

Embracing Developmental Diversity:

Developmentally Aware Teaching, Mentoring, and Sustainability Education

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EMBRACING DEVELOPMENTAL DIVERSITY

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To my nieces Rosie & Isabelle, nephews Wyatt, Carlos, & Miguel,
and Ethiopian “nieces” Meheret, & Sirkaddis

Perhaps one day we will come to experience ourselves as a parent of humankind,
raising consciousness like we now think of raising children.
In the sweep of time and space perhaps we will each learn to live our individual lives
as a homeopathic drop in the pool of humanity
offering to one another multiple intersecting healing waves.
Will we as evolving individuals, ever-indebted to the humanly throng,
continue to co-evolve our most sacred individual selves
in sanctified communion with others?
~Terri O'Fallon

Abstract

This research examined the personal, professional, and developmental impact of introducing a constructive developmental perspective to faculty and students in a post-secondary program in sustainability education and leadership development. It also explored the relationship between adult development and sustainability education, teaching, and mentorship. There is increasing emphasis on integrating human interiors (values, beliefs, worldviews) in sustainability work. However, little research has examined the relationship between adult development and sustainability education. The purpose of this research was to explore deepening the transformative nature of learning and leadership development in graduate education through the use of a developmental framework and assessment, and to contribute to advancing the application of adult developmental research to adult learning and sustainability education. The site of study was Prescott College, and the sample of 11 included four Ph.D. faculty and seven students. This mixed-methods study included semi-structured interviews, a five-month action inquiry process, and a pre and post developmental assessment. The findings demonstrate that sustainability is significantly different for individuals assessed at different developmental stages; learning about adult development is transformative developmentally, personally, and professionally; a developmental awareness may deepen the transformative impact of graduate sustainability education and leadership development; and teaching about adult development is more effective when it is developmentally responsive. Integrating a developmental awareness into graduate and sustainability education is recommended to support learning and growth at all stages of development, support the development of the educators themselves, and support skill development for working well with diverse groups.

Keywords: adult development, adult learning, transformative learning, constructive development theory, sustainability education, sustainability leadership, worldviews

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This Ph.D. journey started about eight years ago with some significant questions about life, learning, and sustainability. I had a palpable (and yet obscure) sense that something more was possible in my work in transformative learning and sustainability leadership development. I have a postcard with a photo of a boy jumping on a bed and a W. B. Yeats quote that reads: “There is another world, but it is in this one.” It is awe inspiring and humbling to recognize that I have found worlds within worlds, which eight years ago I scarcely sensed existed. Every discovery and opening was invited or catalyzed by friends, mentors, and teachers along the way. I am immensely and wholeheartedly grateful.

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CHAPTER 1: INTRODUCTION

Prologue

This dissertation brings together two threads that have woven themselves through the fabric of my life: The threads are education and ecology. In fifth grade I was taken out of class for testing because my teacher was concerned about my schoolwork. I remember being bored in class. My teacher, Mrs. Vitali, started the day by writing the work we needed to complete on the blackboard. I finished the work as quickly as possible because I understood that when I was done, I could move on to activities that interested me more, such as my own reading or interacting with my peers. Apparently the quality of my work was not what Mrs. Vitali expected. The testing, which I remember including inkblots, assessed me as an underachiever. I did not know what that meant, but I knew it was not good. When I was a teenager, I went to a boarding school in Scarborough, North Yorkshire in the U.K. I continued to feel only moderately invested in my studies, mostly uninspired, and felt I was relatively unsuccessful in school. Outside of school, however, I was a curious and engaged person. I read avidly, loved exploring, and sometimes engaged in research of my own, such as writing a report on elephants simply because of my love for the species. I remember walking down the school corridor one day and having the thought that something more has to be possible in education. What is it in us that knows or is in contact with a deeper, more creative, and inspiring vision of what is possible? I never forgot this moment and spent much of my adult life working on realizing that vision.

The other thread is my deep and innate connection with the natural world. Like so many others who are nature-oriented, I found deeper connection and an easier sense of belonging in nature than I did in the human realms. This soon translated into a commitment to work on behalf

of protecting and preserving the natural world. At sixteen I joined Greenpeace, began attending community-organizing meetings, and participated in my first pro-nature, anti-pollution protest march.

These two threads began to intertwine at age 18 when I took an internship as an environmental educator. I have been involved in some form of environmental, place-based, and sustainability education ever since. At first I was more interested in teaching about the natural world, and finding ways of connecting others with nature; however, I was soon thinking about how we educate as much as the content of the education. I wanted students to feel engaged and empowered in their learning and began to draw on experiential, student-centered, transformative, and democratic pedagogies. I also focused on how to cultivate ecological worldviews in my students – essentially how to transform them. I began noticing that some students in the graduate and undergraduate environmental studies programs where I taught included nature and other humans more fully in their circles of care, identity, and responsibility. These students also had deeper capacities for perspective taking and empathy. Other students either didn't appear to have these capacities to the same depth, or their circles of care and identity seemed to be smaller. I also noticed that these students with the smaller circles of identity did not thrive in the progressive, self-directed, and transformative curriculum. I sought to understand why and wanted to become more effective at educating and transforming these particular students.

Around that time I was introduced to adult development theory. My immediate sense was that I had found the tool I was looking for to better understand and transform others' worldviews. My learning also matched my intuitive sense of some of the patterns of worldview development and provided insight into how to support that development. Seven years later, after studying developmental theory, learning about my own developmental unfolding, and applying it

to curriculum development and teaching, my aspiration and application of developmental theory is paradoxically the opposite. Rather than trying to transform another, as an educator I seek to meet a student where he or she is in the process of learning and their developmental unfolding. I aim to do this through listening, seeking to understand, and valuing and respecting the student as they are and who they are. I have found developmental models to be profoundly supportive of this. I also listen for what the student's next steps might be developmentally, and I seek to support these through curriculum design and mentoring. Meeting students where they are as much as possible paradoxically appears to support their transformative development, as opposed to my previous methods of attempting to transform others, which sometimes stimulated resistance and/or a sense of failure or discouragement. Essentially, I was learning to more fully integrate both poles of the support/challenge polarity in my teaching and mentoring. Also, learning about and engaging with my own development as an educator has helped me to be more self aware, including being aware of and better avoiding the tendency to project my own developmental needs onto students, something I did for years but was not aware of doing.

Learning about adult development has also transformed my perspectives and approaches to sustainability education. Sustainability challenges (and our communities) are increasingly global, highly complex, and interconnected. As Harvard development researcher Robert Kegan titled his book, we humans are *In Over our Heads* (1994). Humanity needs to cultivate sustainability practitioners with the skills and capacities to engage and work effectively with complexity; to be adaptive, creative, and generative; to collaborate with diverse stakeholders; and to communicate effectively with a diversity of worldviews and value systems (Brown, 2012; Heifetz, 1994). A developmental awareness and understanding can support the cultivation of these adaptive and transformative leadership capacities. It also provides a helpful map or form

of internal systems thinking for working more effectively with the diversity of worldviews involved in most sustainability challenges, as well as understanding the worldviews of the sustainability practitioners themselves. Additionally, it reveals the limitations of fighting against something or trying to transform others to adopt an ecological worldview, because of the resistance and opposition such approaches can generate, and because worldview development takes time and cannot be forced or rushed (Kegan, 1994).

It is my sense that the emerging field of adult development, which offers a deeper understanding of the ongoing neurobiological and consciousness development of adults, has profound implications for both education and sustainability leadership. This research was an inquiry into that belief, with a vision to contribute to a growing body of research exploring the implications of adult development in education, sustainability, and leadership development.

Introduction

This dissertation focused on the implications of emerging research in adult developmental psychology regarding how to cultivate the skills and capacities needed for adaptive and transformative sustainability leadership and education. Constructive development theory offers an empirically-based map of how adults develop cognitively, emotionally, and behaviorally and can inform the development of curriculum, and the practices of teaching and mentoring (Cook-Greuter, 2013, O'Fallon, 2013).

Developmentally aware and informed teaching and mentorship for sustainability education can work in multiple directions at once. Understanding how adults develop supports educators to design curriculum and mentor in ways that meet students where they are developmentally and support their next steps. It illustrates and values the diverse ways in which students make meaning, and their perspectives and practices with regards to sustainability,

recognizing the strengths and limitations of the different approaches. It supports transformative sustainability education and leadership by guiding skill and capacity development for working effectively and integratively with a diversity of worldviews and value systems. It can also inform the self-awareness and development of the educators and leaders themselves, as well as inform ways of working more effectively with the developmental diversity within a learning community (Cook-Greuter, 2006, 2013; Drago-Severson, 2004a, 2004b; Kegan, 1982, 1994; Torbert, 2004, 2013; O'Fallon, 2010b, 2013).

This research examined the personal and professional impacts of introducing constructive development theory to faculty and students in a post-secondary program in sustainability education and leadership development, and in particular the impact on teaching, mentorship, and sustainability education. It also examined the relationships between stage development and teaching, mentorship, and sustainability practices and perspectives.

The study addressed gaps in the literature in the fields of adult learning, sustainability education, and leadership development, concerning the role that ego development (cognitive, affective, and behavioral development) (Cook-Greuter, 2006, 2014; Torbert, 2004, 2013) and integral adult development (O'Fallon, 2013) play in perspectives and practices in teaching, mentoring, and sustainability education.

The site of study was Prescott College's Ph.D. program in Sustainability Education, and the participants included four faculty and seven students (current and recent alumni). The study was a mixed methods approach that included pre and post semi-structured interviews; a five-month action inquiry process involving reading, reflective writing, and group discussion; and a pre and post developmental assessment through the use of the SCTi-MAP.

Problem statement

A common belief in the modern world is that adults no longer develop in significant ways once they reach adulthood (beyond general maturing). Contrary to this, the last forty years of research in adult development reveals that adults move through qualitatively different ways of knowing who they are, how the world works, and how they know what they know. In other words, neurological, psychological, emotional, and behavioral development continues throughout life, and there are distinctive cross-cultural patterns to this development. According to Harvard professor Robert Kegan,

What gradually happens is not just a linear accretion of more and more that one can look at or think about, but a qualitative shift in the very shape of the window or lens through which one looks at the world. (2002, p. 148)

Some of the general patterns to this development include increasing time frames; expanded perspective-taking capacity (first, second, third, fourth, and fifth person perspectives); widening circles of care, identity, and responsibility; and increasing awareness of and capacity to participate in increasingly complex systems (Cook-Greuter, 2006; Torbert, 2004, 2013; O'Fallon, 2010b, 2013). The general development of identity and care is from self-focus (preconventional), to focus on one's culture or group (conventional), to more world-centric (post-conventional) and to planet and cosmo-centric values systems (Cook-Greuter, 2006, 2014; Drago-Severson, 2004a, 2004b; Kegan, 1982, 1994; Torbert, 2004, 2013; O'Fallon, 2010b, 2013). Each of the developmental stages or phases has particular learning needs, strengths and limitations, awareness, and blind spots. Learning to work skillfully with this developmental diversity is essential for effective, transformative adult learning, sustainability education, and leadership.

Transformative learning is often considered to be an educational process, when it is more of a developmental process. Whether a student is ready to transform, and the particular transformation she or he might be ready for, relates to where the individual is in the process of their developmental unfolding. Understanding and responding to this can make a significant difference in students' learning experiences. Ego development researcher Loevinger (1976) illustrated this concept. "Ego development is growth - there is no way to force it. One can only try to open the doors" (p. 426). When teaching, mentoring, and sustainability education are not developmentally aware or responsive, educators are less likely to recognize the particular developmental needs of students. They might be more likely to project and/or promote a particular worldview, might over- or under-stretch students, and may not fully recognize the growth and development that the student is making, as opposed to the growth and development the educator (or the program) hopes or expects to see. Without an understanding of their own development, teachers are more likely to project their own developmental needs onto students, and teach for a particular developmental transformation, which may or may not be appropriate for students and can generate experiences of failing or being in over their heads. Adult educators unaware of adult development may also be less likely to engage in their own development, not knowing the range of what might be possible, or not perceiving themselves in the midst of a developmental journey.

Similar to transformative learning, the way in which someone perceives and practices sustainability is also a developmental process. "The problem we're solving is the problem we're seeing" (Jones, 2014, para.1). Without a developmental awareness, even more rare in the sustainability field than in adult learning, there can be a tendency to promote a particular worldview or set of values, often an ecological or ecocentric worldview. A commonly used

metric for assessing environmental concern is the “New Environmental Paradigm,” subsequently revised and renamed as the “New Ecological Paradigm” (Dunlap, 2008). This New Ecological Paradigm (NEP) is an ecocentric worldview based on a belief that economic growth is limited by natural resources, that technology will not necessarily overcome humanity’s environmental challenges, and that humans should live in harmony with nature. It contrasts with the Dominant Social Paradigm (DSP), an anthropocentric worldview characterized by belief in the virtues of economic growth, free enterprise, technological progress, and human domination over nature (Catton & Dunlap, 1980; Egri & Herman, 2000). However, not all types of environmental and sustainability beliefs and behaviors are accounted for by the contrast between the DSP and NEP, or between anthropocentric and ecocentric perspectives. As Brown (2012) cited,

Numerous studies (Christmann, 2000; Hawken, Lovins, & Lovins, 1999; Porter & van der Linde, 1999) have demonstrated that the commitment to profits and the pursuit of technological advancement can support managerial development of environmental initiatives; these forces do not necessarily need to thwart sustainability. However, these dynamics can coexist if the NEP were to transcend and include the profit motive of the DSP. (p.72)

This simpler either/or perspective of the DSP and NEP obscures the complexity and diversity of sustainability perspectives and practices. Recognizing and understanding the diversity of motivations, values, and ways of engaging in sustainability work, and the developmental patterns among these different approaches, supports skill and capacity development for working skillfully with and across these differences. Without this developmental understanding, there can be a tendency to promote a particular developmental transformation. This tendency can generate resistance for anyone for whom that particular transformation is not a developmental fit, and can leave others feeling alienated or not valued. For instance, there is a common conflict in the sustainability/environmental fields between what are often called “shallow” and “deep” approaches to change. This conflict undermines and

alienates these so-called “shallow” approaches, such as a stewardship approach to caring for God’s creation, or economic motivations or business solutions for sustainability challenges. There are qualitative differences between these approaches; however, both are worthy of value and have strengths and limitations. For instance, a limitation of the “deep” ecological approaches is this very polarization between the two and the critique and disregard of more “shallow” approaches. The limitation of a more “shallow” approach might be that it is insufficient alone to address the complexity and depth of the challenge it aims to address; however, the contribution expresses care and an interest in contributing to a greater good – something to be encouraged, not dismissed. Including the strengths, and seeking to transcend the limitations through integrative and inclusive approaches to sustainability work, is more likely to avoid the polarized conflicts between the worldviews and support transformative change for all.

A developmental awareness and understanding in sustainability education supports the skill and capacity development for working integratively with diverse worldviews and value systems (transcending limitations and including strengths). In addition, such awareness and understanding supports the development of these worldviews, rather than promoting the transformation towards a particular worldview and disregarding or alienating the rest.

Very few sustainability education, leadership development, or adult learning programs integrate the findings of adult development theory in their program designs and delivery, or integrate them into the teaching itself. There is little empirical research on the role stage development plays in how someone approaches the practice of sustainability education, leadership, or the practice of teaching and mentoring. Finally, I am unaware of any research that examines the impact of learning about adult development, including experiencing a development assessment and developmental coaching on the research participant’s ego development, as well

as her or his perspectives and practices with regards to teaching, mentoring, sustainability education and leadership.

Purpose

The purpose of this study was to examine the personal and professional impacts of introducing constructive development theory to students and faculty in a post-secondary program in sustainability education and leadership development. It also considered the relationships between stage development and teaching, mentorship, and sustainability practices and perspectives. The overarching purpose was to:

- Support the evolution of the field of sustainability education through the integration of a developmental awareness;
- Cultivate sustainability educators and leaders with the skills and capacities to work effectively and integratively with developmental diversity;
- Demonstrate the importance of integrating interiors (worldviews, values and self-identity) in sustainability education and provide a means to do so;
- Explore deepening the transformative nature of learning in graduate education through the use of a developmental framework and assessment tool;
- Contribute to advancing the application of adult developmental research to higher education and adult learning in general and sustainability education and leadership development in particular.

Constructive-developmental theory is based on the assumption that everyone has a lens through which he or she experiences the world, and this lens shapes the reality that each person experiences and the meaning she or he makes of it. Research reveals that these meaning-making

systems develop over time and with patterns that are consistent across gender, socio-cultural context and other personality differences (Cook-Greuter, 2013). Constructive-developmental theory for ego development was created by Jane Loevinger (1970) and expanded upon by Torbert (2004), Cook-Greuter (1999, 2004) and O'Fallon (2010b, 2013). It integrates cognitive (thinking), affective (being or identity), and behavioral (doing) development. Ego development theory and its research has profound implications for the ways in which students respond to and make meaning of their learning experiences and how they approach their subject matter and their research. It also has valuable implications for ways in which educators can design and deliver curriculum and mentor their students in developmentally responsive ways, as well as ways in which to be more aware of their own development and perspective taking. Integrating a developmental perspective into a graduate program in sustainability education – through developmental assessments, coaching, and teaching about development itself as a tool for personal and professional development (for both students and faculty) – has the potential to be transformative for students and educators alike, and to support increased effectiveness in cultivating sustainability educators and leaders (Cook-Greuter, 2006, 2014; Drago-Severson, 2004a, 2004b; Kegan, 1982, 1994; Torbert, 2004, 2013; O'Fallon, 2010b, 2013).

Objectives

Exploring the application of adult developmental research to adult learning and sustainability education, the objectives of this study were:

- To examine the personal and professional impacts of introducing a constructive developmental perspective (including knowledge and awareness of development, and experiencing a developmental assessment and developmental coaching) into a post-secondary program in sustainability education and leadership development.

- To explore how an awareness and knowledge of adult development influences development itself, and the pedagogical practices and perspectives of a sustainability educators and students.
- To examine how a student's developmental stage influences her or his experience and learning in Prescott College's sustainability education Ph.D. program, and her or his perspectives, research interests, and activities/behavior with regards to sustainability.
- To examine how a faculty member's developmental stage influences his or her orientation towards teaching and mentorship of students, curriculum design, and overall beliefs and values about sustainability education and leadership development.

Research Questions

1. What are the personal and professional impacts of introducing a constructive developmental perspective (including knowledge, awareness of adult development, and experience of a developmental assessment) to faculty and students in a post-secondary program in sustainability education and leadership development?
 - a) How does awareness of and knowledge about development influence the practices and perspectives of sustainability educators?
 - b) What are the personal and professional influences on students and faculty?
 - c) What is the developmental impact of learning about adult development on the research participants?
2. How do students' or faculty members' developmental stages influence the following:
 - a) Their perspectives and practices with regards to sustainability education?

- b) Their experience learning about and perspectives on adult development?
- c) Their experience as students in Prescott College's sustainability education Ph.D. program and/or their perspectives and practices with regards to teaching and mentorship?

Methodology Overview

This study utilized a mixed methods research design. Students and faculty in the Prescott College Ph.D. program in Sustainability Education and faculty from Prescott College's Master of Arts program were invited to participate, with a final number of 11 participants: seven students and four faculty. Participants were interviewed using a semi-structured interview method before they learned about the adult development framework and its applications to sustainability education and leadership. Participants completed a developmental assessment, using the SCTi-MAP, received their results, and participated in a developmental coaching session. They also participated in a half-day workshop on integrating a developmental perspective in teaching and leadership for sustainability. For five months participants engaged in an action inquiry process including reflective writing with guided questions, select readings, and conference calls every three weeks. After seven months they retook the SCTi-MAP assessment. A second round of interviews was conducted, using the same interview protocol and questions, after which the participants received the results of their second SCTi-MAP.

Conceptual Framework

Crotty (1998) suggests a taxonomy for social research that guided the development of this research project. According to Crotty (1998), four elements form the basis of any research: epistemology, theoretical perspective, methodology, and methods. The following section examines the first two elements as they informed this research project. The last two elements are explored in Chapter 3. Constructive development theory, adult learning theory focused on transformative learning, and sustainability education and leadership form the epistemological, theoretical, and conceptual framework that guided this inquiry.

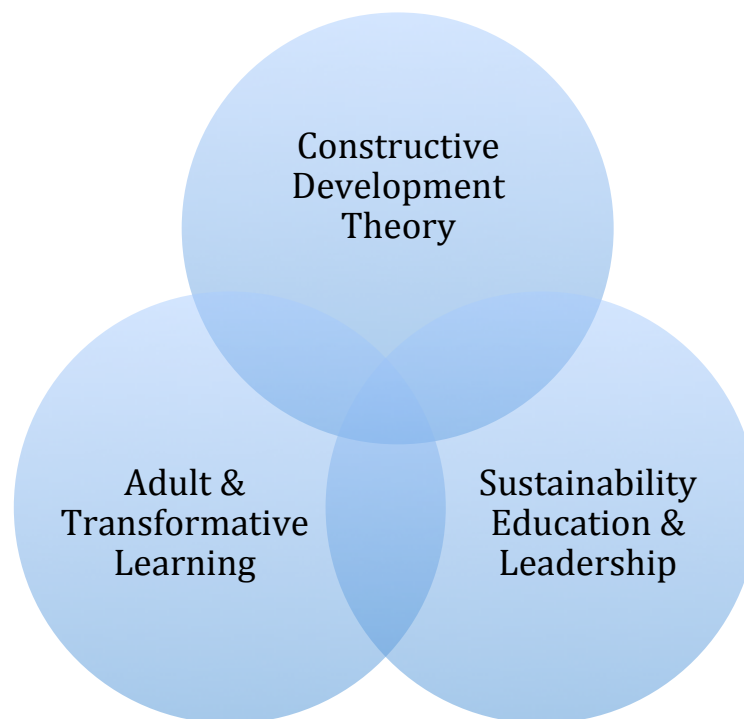


Figure 1. Conceptual Framework

Constructive Development Theory

Constructive development theory, as discussed earlier, is one of a number of stage theories in the larger field of adult development (Cook-Greuter, 2006; Drago-Severson, 2004a, 2004b; Kegan, 1982, 1994; Mezirow, 2000; O'Fallon, 2013; Torbert, 2004, 2013). Constructive development theory focuses on the development of meaning-making processes. It concerns the development of the ways in which adults understand themselves and the world. The constructive development framework for ego development was originally created by Jane Loevinger (1970), was expanded upon by William Torbert (Torbert, et al., 2004, Torbert, 2013). Additional research on the later developmental stages was conducted by Susanne Cook-Greuter (1999, 2004), and more recently, with the development of the StAGES model, by Terri O'Fallon (2013). Ego development includes cognitive, behavioral, and affective development. In my research, I explored the impact of introducing a developmental perspective to faculty and students in a graduate program in sustainability education and leadership development, as well as how adult development influences practices and perspectives on teaching, mentorship, sustainability education, and leadership. I also used adult development as a hermeneutic lens to guide the design of the study and the data analysis.

Sustainability Education and Leadership

Stephen Sterling defines sustainability education as follows:

...a change of educational culture, one which develops and embodies the theory and practice of sustainability in a way which is critically aware. It is therefore a transformative paradigm which values, sustains and realizes human potential in relation to the need to attain and sustain social, economic and ecological well being, recognizing that they must be part of the same dynamic. (Sterling, 2001, p. 22)

In this definition Sterling (2001) makes the connection between sustainability education and the need for a transformation of meaning making, and ways of being and doing in the world.

Prescott College defines sustainability education in the following complementary way:

Education for sustainability is the practice of learning how to achieve global and local sustainable communities. It is a life-long, individual, and social learning progression that challenges the dominant ecological, psychological, economic, and social paradigms.

The desired outcome is an informed, involved citizenry with the social and scientific literacy, commitment, and creative problem-solving skills to engage in responsible individual and cooperative actions toward a sustainable society. Achieving sustainability in all dimensions of human existence depends on adopting an educational paradigm that manifests and supports change toward a sustainable, secure society. The Limited-Residency Ph.D. program in Sustainability Education strives to contribute to synergistic learning and change in consciousness, education, culture – and, ultimately, society. (Prescott College Ph.D. Program in Sustainability Education Website, 2013, para. 2 & 3)

It is common in the overall field of sustainability education to call for a transformation of consciousness or worldviews, as well as lifestyles and behaviors, to more adequately address the complexity and scope of the ecological and social challenges that humans presently face (Hedlund-de Witt, 2013). However, there is less understanding about how to achieve these transformative changes or what exactly is meant by them. Sustainability leadership theory similarly points towards the role that worldviews and values (Boiral, Baron, & Gunnlaugson, 2013; Boiral, Cayer & Baron, 2009; Brown, 2012, Esbjörn-Hargens, 2010) play in cultivating effective sustainability leadership. The research in these areas is exploratory, and none has yet to examine the impact of introducing a developmental perspective on sustainability skill and capacity development. Two recent studies assessed the development of sustainability leaders and looked at their leadership and sustainability activities through a developmental lens (Boiral, Baron, & Gunnlaugson, 2013; Brown, 2012). Developmental research applied to leadership perspectives, capacities, and behaviors reveals that leaders with a developmental awareness are more integrative and capable of working skillfully with diverse perspectives. This awareness

strengthens their ability to respond to complex challenges (Brown, 2012; Kegan, 1994; Rooke & Torbert, 1998; Torbert et al., 2004). This suggests that education that understands and supports adult development will also be effective for cultivating sustainability educators and leaders with the skills and capacities to work with and across developmental differences. However, more research is needed to empirically understand the sustainability practices and perspectives at all stages of development, the learning needs of different stages of development, and the impacts of integrating a developmental perspective in sustainability education and leadership.

Adult Learning Theory and Transformative Learning

Mezirow (1990, 1991, 2000) coined the term transformative learning to describe

...the process by which we transform our taken-for-granted frames of reference (meaning perspectives, habits of mind, mind-sets) to make them more inclusive, discriminating, open, emotionally capable of change and reflective so that they may generate beliefs and opinions that will prove more true and justified to guide action. (2000, p. 7-8)

Although transformative learning researchers and theorists have different opinions about the process of transformation, three common components have been identified as essential for transformation: reflective discourse (Mezirow, 2000), critical reflection (Brookfield, 2000; Mezirow, 2000), and informed action (Yorks & Marsick, 2000), which is the desired result of the discourse and critical reflection (Daloz, 1999, 2000). Adult educators and researchers have found that transforming learners' habits of mind from one way of thinking and knowing to another is challenging (Mezirow, 2000; Taylor, 2000). Constructive development theory can be helpful in understanding the transformative learning process, some of the challenges, and what is meant by transformation (Kegan, 1982, 1994; Daloz, 1999, 2000). While some research examines students' developmental stages and their experience of different transformative

curricula, I was only able to find one study that examined the transformative impact of introducing developmental knowledge and an assessment to learners.

Rationale and Significance

Very little research has been conducted to explore the impact of introducing constructive development theory, including awareness, knowledge and a developmental assessment, to educators in higher education and more specifically sustainability education and leadership development. Research in the field of adult development reveals that there are significant developmental dimensions or differences to how individuals (and groups) engage with sustainability practices and perspectives, teaching, mentorship, and learning, as well as how someone might perceive or experience a developmental perspective itself. These differences and the developmental patterns that connect them, contain valuable insights and information for developmentally aware and responsive teaching and sustainability education.. Understanding these differences and learning to teach and practice sustainability with a developmental awareness and skill for working effectively with these differences, has the potential of deepening the transformative impact of these endeavors.

This is one of the first studies to examine the personal and professional impacts of learning about constructive development theory for faculty and students in graduate education and sustainability education. This research also examined the relationships between the stages of development and teaching, mentorship, and sustainability practices and perspectives. There is very little research in either of these areas of study. This research breaks new empirical ground by providing insight into the impacts of learning about adult development and the behaviors and perspectives of sustainability educators at the different stages of development.

Assumptions

The central assumptions I held throughout this research:

- The central tenet of constructive development theory is accurate: Humans, in general, develop through increasingly complex stages of meaning-making and ways of being;
- A student's or faculty's developmental stage significantly influences her or his practices and perspectives with regards to sustainability education, leadership, teaching, and mentorship, and is therefore worth taking into consideration in how educators teach, mentor, and cultivate sustainability educators and leaders;
- The developmental diversity among faculty and students is significant enough to make this a factor worth researching;
- A developmental approach to teaching, mentorship and curriculum design has potential value for both meeting students where they are developmentally, supporting and mentoring their next developmental steps, and working skillfully with the developmental diversity in a learning community;
- A developmental perspective can contribute to cultivating a deep respect and acknowledgement of students (and faculty) as whole beings, perfect as they are, while valuing and supporting their potential for development – including both their being and their becoming;
- A developmental approach to sustainability education and leadership includes greater capacity and skill for working effectively with and across worldview differences. This includes valuing sustainability perspectives and practices at all stages of development, integrating a diversity of approaches in sustainability initiatives, creating strategies for

including the values of the different approaches, and minimizing the limits or conflicts between the different approaches.

Definition of Key Terminology

Action-logics. Action-logics is Bill Torbert's (2004) Global Leadership Profile term for the ways in which people tend to reason and behave in response to their experience. Torbert introduced action-logics as another term for the stages of adult development, because it emphasizes meaning making as an activity, and because it aligns with the language of organizations and leadership (Torbert, 2004, 2013, 2014).

Adult development. Adult development is a branch of developmental psychology focusing on adults. It recognizes that psychological development continues throughout life, and that there are very distinctive cross-cultural patterns to this development (Cook-Greuter, 1999, 2004; Kegan, 1982, 1994; O'Fallon, 2010b, 2013; Torbert, 2004, 2013).

Constructive development theory. Constructive development theory is one of a number of stage theories in the larger field of adult development (Cook-Greuter, 2006, 2014; Drago-Severson, 2004a, 2004b; Kegan, 1982, 1994; Mezirow, 2000; Torbert, 2004, 2013; O'Fallon, 2013). It focuses on the construction and developmental patterns of meaning-making processes and concerns the development of the ways in which adults understand themselves and the world.

Ego. Ego is "...the underlying principle in personality organization that strives for coherent meaning and orchestrates how we perceive reality" (Cook-Greuter, 2010, p. 50).

Ego development theory. Ego development theory uses the psychological concept of ego as the underlying principle in personality organization that develops and generates coherent

meaning throughout life ego, and orchestrates ways in which humans perceive inner and outer reality, coordinate affect, thought and action (Fingarette, 1963; Loevinger, 1976).

Meaning making. Meaning making is the preferred manner in which an individual uses his or her present capacity to filter information, both internal and external, and to use it in decision-making and relationship building.

SCTi-MAP. SCTi-MAP is a projective assessment tool, comprised of 36 sentence stems that deal with self-perceptions, social situations, and interpersonal relationships. It is the most frequently used and carefully validated measures of human development (Bartunek, et al., 1983; Cohn & Westenberg, 2004; Cook-Greuter, 1999; Torbert, 2003). It assesses cognitive, affective, and behavioral aspects of being, and indicates the subject's overall ego stage or action-logic, or her or his highest, consistently available mode of functioning. The SCTi-MAP is one of the latest versions of the Washington University Sentence Completion Test (WUSCT; Loevinger & Wessler, 1970). Closely related versions of the assessment tool are the Leadership MAP, StAGES assessment and the Global Leadership Profile (GLP).

Conclusion

This research examined the personal and professional impacts (on sustainability, teaching, mentorship) of introducing constructive development theory to faculty and students in a post-secondary program in sustainability education. It also explored the relationships between stage development and teaching, learning, mentorship, and sustainability practices and perspectives. The study addressed important gaps in the literature regarding adult learning, and sustainability education and leadership development concerning the role that ego development

(cognitive, affective, and behavioral development) plays in perspectives and practices around teaching, mentorship, sustainability education, and leadership development.

Working with a developmental perspective can be paradoxical. Developmental awareness is different from promoting development or pressuring another person to grow. It can, potentially and paradoxically, offer the opposite. By being aware of others' development, educators can teach, mentor and engage them in sustainability work, in a way that honors and is responsive to their meaning making, rather than expecting them to adopt a particular set of values or worldview. It can be profoundly and paradoxically liberating, empowering and respectful. This is the ethic and intention with which this research was conducted.

The following chapter includes an overview of the literature of adult development, sustainability education and leadership, and adult and transformative learning directly related to the study.

CHAPTER 2: LITERATURE REVIEW

Introduction

This literature review addresses the question: What are the personal and professional impacts of introducing constructive developmental perspective (including knowledge, awareness of adult development, and experience of a developmental assessment) to faculty and students in a post-secondary program in sustainability education and leadership development? It also looks at the relationships between stage of development and teaching, mentorship, and sustainability practices and perspectives. The literature review explores what is known about the application of adult development to adult education, transformative learning, and sustainability education, and to a lesser extent sustainability leadership, and the limits and critiques. The two primary areas of focus are the intersections between adult development and sustainability education, and the intersections between adult development and adult/transformative learning.

Adult Development Theory

Adult developmental theory is a branch of developmental psychology. Until about 40 years ago, most developmental research focused on children because it was assumed that when an individual reached her or his early twenties, development was essentially complete. The field of human development research now recognizes that psychological development continues throughout life, and that there are quite distinctive cross-cultural patterns to this development (Cook-Greuter 1999, 2004; Kegan 1982, 1994; O'Fallon 2010b, 2013; Torbert 2004, 2013, 2014). These developmental patterns have profound implications for education, mentoring, and ways in which students perceive and orient towards concepts and the educational processes of sustainability education and leadership development. However, it is relatively rare for adult educators, and even rarer still for sustainability educators, to draw on the findings of adult

developmental research. As a result, curriculum design, sustainability work, and teaching practices for adult learners are rarely adjusted for and responsive to the developmental diversity among students or stakeholders. Teaching about adult development as a tool for sustainability education and leadership development is even more rare.

Constructive Development Theory

History and Background

Constructive development theory is one of a number of stage theories in the larger field of adult development. Other stage models for cognitive development and other forms of personal development include the development of operational thought (Piaget, 1970), moral development (Gilligan, 1982; Kohlberg, 1984), spiritual development (Fowler, 1981), self-development through adulthood (Kegan, 1982, 1994), ego development (Hy and Loevinger, 1996), and integral development (O'Fallon, 2013). Constructive developmental theory focuses on the development of meaning-making processes and concerns the development of the ways in which humans understand themselves and the world. It is constructive in the way it includes the ways a person constructs meaning through her or his interpretations of an experience, and developmental in the way it looks at the patterns of how these meaning-making structures, and related sense of self-identity, develop over time as both a natural unfolding and in response to the limitations of existing ways of making meaning (Kegan, 1982, 1994; McCauley et al., 2006).

Although the various stage models focus on different aspects of an individual's development, Kegan (1982, 1994) shares some of the common underlying assumptions:

Identifying a stage of development can predict that which a person can comprehend, attend to, and accept responsibility for, and that which they are likely to find interesting, worthy of exploration, and learning. It helps identify what people can conceive and comprehend if it is presented to them. Identifying a stage of development can also

predict the type of “holding environment” that will facilitate further learning and development. This can include the setting, the types of relationships, and the set of support services and systems that will provide a secure foundation for further exploration. (as cited in Boyer, 2005, p. 782)

Piaget was one of the first developmental theorists to propose a stage model of mental growth. His work built on that of James Mark Baldwin (1897) and other earlier psychologists and sociologists. Piaget called his model genetic epistemology, which he initiated in *The Moral Judgement of the Child* (1948). He explored the ways that children’s capacity for rational thought (later known as cognition) develops in predictable patterns from childhood through adolescence. In the *Origins of Intelligence* (1952), he described four major stages of increasing integration and differentiation in the formation of adult cognition (sensorimotor, pre-operational, concrete operational, and formal operational). The highest stage of cognitive integration he identified was called formal operations, and he projected that this stage was reached in early adulthood. He considered this to be the prototype of mature reasoning and argued that it is necessary for modern society.

Piaget made many important contributions to the field of human development. His methods and perspectives essentially gave birth to the field of child developmental research as well as the beginning of an understanding of adult mental growth. He used language as a window into meaning-making, looked for patterns in people’s responses to verbal stimuli, described these patterns and then looked for their predictive power in describing behavior (Cook-Greuter, 1999). Piaget also explored the ways in which people actively construct meaning to make sense of their experiences. His thinking was that each stage of development is increasingly complex, constitutes a different epistemology or worldview, includes the content of the previous stage, and extends beyond it into a more comprehensive meaning system. In Susanne Cook-Greuter’s (2000) words: “In the most global sense, development can be described as the gradual

unfolding of people's capacity to embrace ever-vaster mental horizons and to plumb ever-greater depths of the heart" (p.15).

Beginning in the late 1960s, several developmental theorists began to challenge the idea that the formal operational stage was the completion of adult development, and began to put forward the idea that some adults continue to develop throughout their lifespan (Kohlberg, 1969; Loevinger, 1966; Perry, 1970). Kegan (1982) introduced the term "constructive developmental" to the literature to refer to these post-Piagetian theories. Limitations to Piagetian and post-Piagetian ideas have been identified by Fischer and Bidell (2006); however, other reviews document the continued usefulness and validity of the research (McCauley, et al., 2006).

The constructive developmental framework for ego development was created by Jane Loevinger (1970) and expanded on by William Torbert (Torbert, et al., 2004), with additional research into the later stages by Susanne Cook-Greuter (1999, 2004) and Terri O'Fallon (2013). Ego development theory uses the psychological concept of ego as the underlying principle in personality organization. According to this theory, the ego develops and generates coherent meaning throughout life. Ego development includes cognitive, behavioral, and affective or emotional development. O'Fallon's (2013) StAGES model looks at the integral development of a person.

Types of Development

Developmental researcher Susanne Cook-Greuter (2013) clarifies that there are two primary ways we develop: These are sometimes referred to as horizontal and vertical development. Both are important to human growth, but they occur in different ways and at varying rates. Horizontal development refers to development within a current meaning-making structure through a process of adding knowledge, developing skills, refining perspectives, and

establishing more connections. Vertical or transformative development, which happens more rarely and in response to persistent discrepancies that cannot be accommodated through horizontal integration, involves a transformation of someone's entire way of perceiving and experiencing the world. Developmental researcher Robert Kegan (2002) shares:

What gradually happens is not just a linear accretion of more and more that one can look at or think about, but a qualitative shift in the very shape of the window or lens through which one looks at the world. (p. 148)

With vertical development (also referred to as stage development) there is an increase in what an individual can be aware of and, therefore, that which she or he can integrate and act upon. These changes in worldview, the emergence of new meaning-making systems, are often far more powerful in influencing behavior and perspectives than any degree of horizontal growth (Cook-Greuter, 1999).

Human development is seen as a sequence of integrated and increasingly complex meaning-making stages or systems, each potentially more effective at addressing the complexities of life. This is a nested hierarchical process, in which each development to a new stage results in a transformation of the previous way of making meaning, while also including the previous stages (Cook-Greuter, 1999). However, human consciousness is a fluid and dynamic process (Kegan, 1984); therefore, while an individual might be assessed as generally operating from a particular stage of development (commonly referred to as the individual's center of gravity) it is also clear that there is a tendency to make meaning from a variety of perspectives throughout any one day, and that under stress an individual might draw from earlier forms of meaning-making (Cook-Greuter & Soulen, 2007).

Core Assumptions

Constructive-developmental theory shares the following summarized assumptions (Cook

Greuter, 2004; McCauley, et al. 2006, p. 636):

- People actively construct their understanding and way of making sense of themselves and the world.
- Growth occurs in a logical progression of stages, evolving from less to more complex and from static to dynamic.
- Later stages are reached only by journeying through earlier stages—each stage transcends and includes previous stages. The movement is often likened to an ever-widening spiral of development.
- Each later stage is more differentiated, inclusive, and integrated—and capable of more optimal functioning in a complex and changing world. Later stages are not better in any absolute sense, but may be better (i.e., more adequate) in a relative sense.
- As development unfolds, tolerance for difference and ambiguity increases, while defenses decrease.
- Development occurs through interplay between the person and the environment, not just one or the other.
- A person's stage of development influences what that person notices or can become aware of, and therefore what she or he can describe, articulate, reflect on, influence, and change.

Developmental research reveals that there are fundamentally different ways of making meaning of the world. Some of the patterns of adult development relate directly to ways in which students learn, the kind of mentorship that may best serve their learning and development, and how sustainability is perceived and acted upon. Given the implications and potential importance of adult development to teaching and learning, sustainability, and leadership

development, my inquiry was to explore the impact of introducing adult development theory to faculty and students in a post-secondary sustainability education and leadership development program. The following sections discuss these theories and their applications to adult education, sustainability education, and leadership development.

Caveats

When considering development, it is important to remember that humans are complex beings, and how they think and behave is influenced by a variety of factors, their stage of development being only of these factors. Don Beck, who researches the development of value systems, describes a value system as like a musical note, while its expression is more like a chord or a melody. Beck and Cowan (1996) describe the values systems in the following way:

These Value Systems describe types in rather than types of people. None of these worldviews is inherently better or worse than any other. They differ in levels of complexity, capacity to deal with diverse situations, and degrees of personal commitment. They do not reflect intelligence or character, or temperament, as those dimensions run across worldviews. People value different things because they think in different ways. Everyone is motivated, but we are not motivated by the same things. Each Value System has a particular set of driving forces that stimulate it to action. (as cited in Brown, 2012, p.13)

It is important to acknowledge that developmental psychology, while discovering patterns that appear to be cross-cultural, is also an approximation of complex phenomena that may never be fully understood. It is critical to note that this theory, like all theories, should be held lightly, with the awareness that even while it offers insights, it is also partial in its understanding. The intention is not to confine people to a particular stage, but actually to support their liberation by deeply understanding where they are developmentally and meeting them there in a way that paradoxically can support their growth and transformation. Additionally, as Cook-Greuter (2013) notes, these models and their stages are idealizations of how adults develop. The actual

lived and embodied expressions of these developmental stages are different from the idealizations.

As Beck and Cowan (1996) stated in the previous quote, later levels are not intrinsically better than earlier levels, nor is someone a better person just for having a more complex meaning system. There are unique capacities that emerge with later stages that may be more adequate for addressing the complexity of a particular context. However, it is essential to recognize that every stage of development and the variety of ways in which people express these stages offer critical contributions and unique perspectives to society. Every stage also has both strengths and “stage-specific vulnerabilities and new forms of unhealthy expression” (Cook-Greuter, 2013, p. 17). Devaluing someone due to his or her current way of making meaning is a misuse of this model. Every stage of development is inherently valuable and worthy of respect and care. Additionally, the unfolding of developmental perspectives is not predictably evident along the lines of age, gender, nationality, or affluence.

Ego Development Theory, StAGES, and Action-Logics

This research drew from a variety of constructive developmental theories including Kegan’s (1994) theory of cognitive development, Cook-Greuter’s (2013) Leadership Development Framework adapted from ego development theory, Torbert’s (Torbert et. al., 2004) action-logics, and O’Fallon’s (2013) StAGES model. These are the theories most frequently discussed in leadership, sustainability, and adult education literature, and the models are validated by extensive empirical research. The names I used for the stages of development were a combination of Torbert’s (Torbert et. al., 2004) action-logics and O’Fallon’s (2013) person-perspectives. I also made use of Torbert’s Collaborative Developmental Action Inquiry (or CDAI) (Torbert, 2004, 2007, 2013) in the research design. Table 1 offers a comparison of

Kegan's, Cook-Greuter's, Torbert's and O'Fallon's models of adult development and their associated stage names.

Table 1

Comparing Developmental Stage Names

Kegan Stages of Development	Cook-Greuter Ego Development Stages (1986, 2002)	Torbert Action-logics (1991, 2004)	O'Fallon StAGES: Person Perspectives (2013)	Developmental Stage Names used in this study
Stage 5: Inter-individual/Post-modern	6 Unitive	Ironist	6.5 Illumined	6.5 Illumined
	5/6 Construct-aware	Alchemist	6.0 Universal/Kosmic	6.0 Universal/Kosmic
	5 Autonomous	Strategist	5.5 Transpersonal	5.5 Transpersonal
	4/5 Individualist	Individualist	5.0 Construct Aware	5.0 Construct Aware
	4 Conscientious	Achiever	4.5 Strategist	4.5 Strategist
Stage 4: Institutional/Modern	4/5 Individualist	Individualist	4.0 Pluralist	4.0 Individualist
	4 Conscientious	Achiever	3.5 Achiever	3.5 Achiever
Stage 3: Interpersonal/Traditional	3/4 Self-Conscious	Expert	3.0 Expert	3.0 Expert
	3 Conformist	Diplomat	2.5 Conformist	2.5 Diplomat
	2/3 Self-defensive	Opportunist	2.0 Rule Oriented	2.0 Delta
Imperial	2/3 Self-defensive	Opportunist	1.5 Opportunist	1.5 Opportunist
	2 Impulsive	Impulsive	1.0 Impulsive	1.0 Impulsive

Loevinger, Torbert, Cook-Greuter, and O'Fallon

Ego development theory was created by Jane Loevinger (1970) and expanded upon by William Torbert (Torbert, et al., 2004, 2014), with additional research into the later stages by Susanne Cook-Greuter (1999, 2004) and Terri O'Fallon (2013). Loevinger's research built on that of Piaget's (1948, 1954) and others. Since its formulation, the ego development theory framework has been rigorously validated, refined, and extended (Cohn & Westenberg, 2004; Hauser, 1976; Hy & Loevinger, 1996; Loevinger, 1979, 1998a), resulting in it being "one of the most comprehensive constructs in the field of developmental psychology" (Westenberg & Block, 1993, p. 792, as cited in Brown, 2012, p.32). The framework has been applied to studies

worldwide, encompassing more than 11,000 individuals, and it has been translated into at least eleven languages (Cohn & Westenberg, 2004; Cook-Greuter & Soulen, 2007; Loevinger, 1979; Manners & Durkin, 2001 as cited in Brown, 2012).

Ego development theory uses the psychological concept of ego as the underlying principle in personality organization that develops and generates coherent meaning throughout life. Ego development includes cognitive, behavioral, and affective or emotional development, and is described by Cook-Greuter (2003) in the following:

A psycho-logical (sic) system with three interrelated components. The operative component looks at what adults see as the purpose of life, what needs they act upon, and what ends they are moving towards. The affective component deals with emotions and the experience of being in this world. The cognitive component addresses the question of how a person thinks about him or herself and the world. It is important to understand that each action-logic emerges from a synthesis of doing, being, and thinking despite the term logic, which may suggest an emphasis on cognition...the leadership development framework provides us with one possible account of how individuals navigate the straits of human existence by using navigational lore, common sense, increasingly complex maps, algorithms, and intuition. (p. 2)

Table two offers a synthesis of the three dimensions: doing, being, and thinking of ego development.

Table 2

The Three Main Dimensions of Each Stage of Development

Function	A psycho-logy [sic] of human meaning-making which addresses the following essential questions.
<i>DOING</i> Coping Needs and ends Purpose	<i>Behavioral dimension</i> How do people interact? What are the needs they act upon, and what ends do they try to achieve? How do they cope and master their lives? What function do others play in an individual's life?
<i>BEING</i> Awareness Experience	<i>Affective dimension</i> How do people feel about things? How do they deal with affect? What is

Affect	the range of awareness and of their selective perception? How are events experienced and processed? What are the preferred defenses?
THINKING Conceptions Knowledge Interpretation	<i>Cognitive dimension</i> How does a person think? How do individuals structure experience? How do they explain things? How do they make sense of their experience? What is the logic behind their perspectives on the self and the world?

Note: Adapted from “Nine Levels of Increasing Embrace in Ego Development,” by S. R. Cook-Greuter, 2013, unpublished manuscript, p. 14. Reprinted with permission.

Loevinger (1976) developed the Washington University Sentence Completion Test (WUSCT) (Loevinger & Wessler, 1970; Manners & Durkin, 2001) to assess differences in meaning-making. The WUSCT focuses on how individuals “tend to reason, feel, and act in response to their experience” (Cook-Greuter & Soulen, 2007, p. 185). This assessment tool shows the ego construct to be conceptually and empirically distinct from intelligence (Cohn & Westenberg, 2004; Newman, Tellegen, & Bouchard, 1998).

Torbert and associates’ early work (Fisher, Merron, & Torbert, 1987; Torbert, 1987) applied Loevinger’s framework and the WUSCT to the context of managerial work. From this work, Torbert (2004) developed the Leadership Maturity Framework (LMF), which was then more fully developed in collaboration with Cook-Greuter (2004). The LMF was described as follows:

When applied to managers and leaders, the LMF provides a way of understanding how they tend to interpret events and, thus, how they are likely to act in a given situation or conflict. Although people may have access to several action-logics as part of their repertoire, they tend to respond spontaneously with the most complex action-logic they have available, or from their center of gravity... The LMF refers to stages as action-logics because it focuses on how professionals tend to reason and behave in response to their experience. (p. 278)

As is described in this quote, the developmental stages of meaning-making were called

action-logics in the LMF framework. This term was chosen to align with the language of organizations and leadership. It also emphasized the way each of these meaning-making systems represents a dynamic form of activity and interactivity, rather than a static structure. The LMF or action-logics framework describes nine ways of adult meaning-making. Torbert and Cook-Greuter revised the WUSCT assessment tool to be consistent with the LMF framework, including more rigorous definitions and measurements of later stages (Cook-Greuter, 2004; Torbert & Associates, 2004).

There are now two versions of the WUSCT: the Global Leadership Profile (GLP) (Torbert, 2014) and the Sentence Completion Test Integral–Maturity Assessment Profile (SCTi-MAP). The SCTi-MAP, one of the more finely tuned and validated assessment tools in the field, is the instrument used in this study. It is discussed in greater detail in Chapter 3, and the sentence stems for the assessment profile can be found in Appendix D.

StAGES

The StAGES model is a new theory and assessment methodology for human development, created by Terri O’Fallon (2013). This model evolved from and builds on Loevinger’s (1970) ego development theory, expanded upon by Torbert (Torbert, et al., 2004, 2014), with additional research into the later stages by Cook-Greuter (1999, 2004). StAGES has been statistically grounded (with a high level of reproducibility) to correlate with the SCTi-MAP, the most widely used and researched assessment tool of adult human development, and the assessment used in this study (O’Fallon, 2013).

The StAGES model validates three new, later stages of development beyond Construct Aware, (5.5 Transpersonal, 6.0 Universal/Kosmic, and Illumined 6.5), and is the first integrally based model, incorporating quadrants, states, lines, and types. It “reveals a natural sequence of

deep ‘vertical’ structures, as well as iterating, wave-like patterns of development.” O’Fallon uses the person perspective-taking capacities of each stage of development (first, second, third, fourth etc.) as way of naming the stages.

The StAGES description for the Transpersonal 5.5 stage of development was used in this research, as well as some additional descriptions such as the iterating pattern between receptive (3.0, 4.0, 5.0 etc.) and action-oriented stages (3.5, 4.5, 6.5 etc.) (O’Fallon, 2010b, 2013).

Overview of the Stages

Each stage of ego development values and interacts with education and sustainability in remarkably different ways; each one is essentially operating in a landscape unique to its way of being, seeing, and acting in the world. The general patterns to the stages of development include an increasing time frame; an expanded perspective-taking capacity (first, second, third, fourth, and fifth person perspectives); widening circles of care, identity, and responsibility; and an awareness of and developing capacity to participate in increasingly complex systems. There is also a potential trend towards decreasing prejudice, judgment, and exclusion of others. There is a decreasing identification with one’s own worldview and increasing comfort with uncertainty and ambiguity. The most complex stages are theoretically available to everyone; that is, they exist as a developmental potentials from birth. The general development of identity and care is from a focus on one’s self, to one’s culture or group (pre-conventional worldview), to a more world-centric view (conventional), to a contextual and systems or planet-centric view (post-conventional), and later to a cosmo-centric worldview (Cook-Greuter, 2004, 2014; O’Fallon, 2010b). These patterns are then reflected in how people define and participate with education and sustainability.

With each subsequent stage of development there is an increasing capacity to take and

hold multiple perspectives and a corollary dis-identification with one's own perspective. In other words, there is an increasing willingness to be curious rather than convinced, and an increasing capacity to engage with and truly understand other perspectives. There is also increased capacity to engage with complex and abstract thought and to reflect on one's own interior thoughts, feelings, and experiences.

Imagine someone who can only take a first person perspective – as is true of children and some adults. Such a person has thoughts and feelings, but it never occurs to him or her that others' thoughts and feelings might differ. He or she is likely to project personal thoughts and feelings onto others but is not aware of doing so. As a second person perspective emerges, there is the recognition that others have their own views and may indeed have views about others. There is increasing capacity for self-reflection and to take perspectives other than one's own. A third person perspective offers a so-called "objective" perspective on reality. With this arises an interest in the rational mind and the scientific method to analyze and assess others and their ideas. A fourth person perspective brings with it an awareness of culture and context and their influences on personal perspectives. Everything becomes more relative and unique to each person's context; with it comes recognition of the social construction of reality. A fifth person perspective offers a perspective on the very fact that humans have perspectives, one that is not only context bound or informed, but one that is aware of the very nature of constructs: that people create the world they experience through the constructs they hold/create, and that these perspectives develop over time. With this developing capacity to take multiple perspectives comes an increasing awareness and valuing of the needs, perspectives, and concerns of others, including other species (Cook-Greuter, 2004; O'Fallon, 2010b, 2013).

Table 3 describes six (of the nine) action-logics. It summarizes the stage descriptions and

draws on theoretical research about how each action-logic is likely to engage with sustainability and education (Boiral et al., 2009; Brown, 2005, 2012; Drago-Severson, 2009; Esbjorn-Hargens & Zimmerman, 2009; Kegan, 1994, O'Fallon, 2013). Each of the stages of development is introduced in greater detail in Chapter 4.

Table 3

Stages of Development and Sustainability Education Perspectives and Practices

Developmental Stage	Main Focus	Space & Time Frame	Leadership and Feedback Orientation	Orientation to Education and Sustainability
<p>Diplomat 12% Late 2nd Person Perspective</p>	<p>Socially expected behavior, approval, “one right way”, avoids conflict, loyalty to chosen group. “Wants to belong” (Norms rule needs)</p>	<p>Space: Ethnocentric “WE” Our circle, our beliefs</p> <p>Time: Past and Today</p>	<p>Enforces social norms, encourages, cajoles, requires conformity. Feedback received as disapproval, upholds allegiance, social glue</p>	<p>Sustainability: Stewardship ethos, sustainability can be a moral & spiritual obligation, Nature as a garden to steward, legacy for children, pollution as a sin, concerns for security. Eco-Manager, Boy & Girl scouts, good citizenship, National Park Service. Education: To maintain the past and respect tradition. By being good, disciplined & following the rules you have a place in society. Black & white thinking</p>
<p>Expert 37% Early 3rd Person Perspective</p>	<p>Expertise, procedure and efficiency, error free tasks, what’s logical and effective, interiors arise “Knows the answer”, critical of others (Craft logic rules norms)</p>	<p>Space: Early Worldcentric All of us</p> <p>Time: Months</p>	<p>Seeks perfection, argues own position, efficiency and improvement. Tactical ideas and solutions. Dismisses feedback from non-experts, takes it personally</p>	<p>Sustainability is a technical issue that requires proven environmental services. Need to gain expertise in environmental knowledge & implement new technologies & solutions. Critique that sustainability lacks a clear definition. Education: To assure the future, become an expert on something, so that you can be of service and build useful things. More nuanced shades of black & white thinking. Difficulty prioritizing tasks, ideas.</p>
<p>Achiever 30% Late 3rd Person Perspective</p>	<p>Delivery of results, effectiveness, goals, success within system, “What’s successful”, scientific analysis, thinking about thinking (System effectiveness rule craft logic)</p>	<p>Space: Worldcentric All of us</p> <p>Time: 1-5 years</p>	<p>Provides logical arguments, data, makes task/goal contractual agreements, Accepts feedback if it supports goals, optimizes strategic outcomes.</p>	<p>Sustainability is the ultimate technical & social challenge, with profit & opportunity. Climate change is the most serious problem companies are facing. Waste is proof of inefficiency. Need sustainability performance measures. Ecology. Urban planning. Education: To become successful, now if possible. To improve oneself regardless of impacts on health, family etc. Either/or thinking</p>
<p>Individualist 12% E 4th Person Perspective</p>	<p>Systemic problem solving, dislikes hierarchy, subjectivity of beliefs, questions assumptions, social contexts, recognizes limits to science/analysis “All ways equally valid” (Relativism rules single system effectiveness)</p>	<p>Space: Planetcentric, Sentient-centric</p> <p>Time: 1-10 years, time relative</p>	<p>Adapts or ignores rules when needed, or invents new ones, discusses issues, airs differences, welcomes feedback for authenticity. Original, creative solutions.</p>	<p>Sustainability is our responsibility to the Planet. With increased freedom, comes increased responsibility. Must avoid tragedy of the commons. Intrinsic rights of Nature. Deep ecology, environmental justice. Eco-Radical. Include diverse stakeholders. Education: To respect self, others, nature. Identity development, beyond cultural expectations. Become authentic as you can internally, not in superficial or materialistic ways. Both/and thinking</p>

<p>Strategist 5% L 4th Person Perspective</p>	<p>Linking theory and principles with practice, dynamic systems, paradox. Deep appreciation of others, & development “Actualization of self and others” (Most valuable principle rule relativism)</p>	<p>Space: Planetcentric All, developmentally us Time: Multi-generational</p>	<p>Leads in reframing situation so decisions support overall principles, strategy, integrity, catalyses breakthrough shifts, Invites feedback. Works with shadow projections</p>	<p>Sustainability requires holistic, complex approach integrating culture, justice & nature. Make decisions based on greatest good for humanity & nature. Sustainable development, New Cosmology, Eco-Holist. Education: To respect the interior & exterior of individuals & collectives by taking into account developmental levels, harmonize all aspects of life & integrate. One within another thinking - paradox</p>
<p>Construct Aware 2% E 5th Person Perspective</p>	<p>Interplay of awareness, thought, action and effects; transforming self and others. Complexity of meaning making. Constructs. (Deep processes & intersystemic evolution rule principles)</p>	<p>Space: Early Kosmocentric Time: Historic Cosmic Time-frame</p>	<p>Reframes, turns inside-out, adaptive, dynamic steering, Feedback part of natural system, essential & held lightly. Generates social transformation. Projections in the moment</p>	<p>Sustainability: Recognizes the plethora of sustainability definitions related to worldviews, & understands they are constructed & reified through belief systems. Bring incredible adaptability to the navigation & interweaving of all of these views. Integral Ecology. Education: To go beyond personal accomplishment & focus on actions that concern the planet, its development and evolution as a whole.</p>

Note. Adapted from Cook-Greuter (2004), O’Fallon (2010b, 2013), Rooke & Torbert (2005), Boiral et al. (2009), Brown (2005, 2012), Drago-Severson (2009), Esbjorn-Hargens & Zimmerman (2009), Kegan (1994). The percentage of stage of development found in a sample of 4,500 adults in the U. S. (Cook-Greuter, 2004).

Collaborative Developmental Action Inquiry

Collaborative Developmental Action Inquiry (CDAI) (Torbert, 2003, 2004, 2009, 2010, 2013) is described by Torbert:

It seeks to triangulate among the subjective aspects of action and inquiry (within the first-person), the intersubjective interactional aspects of action and inquiry (between second-persons engaged with one another), and the objective aspects of action and inquiry (among a collective of third-persons-and-things at-a-distance-from and often-anonymous-to one another). (2013, p.2)

It offers methods and guidance for reflecting during action, revealing possibilities for behavior change, and creatively generating new options for action. It also integrates organizational

learning and Loevinger’s stages of ego development, further developed by the research of Cook-Greuter (2013).

By integrating first person subjective, second person intersubjective, and third person objective learning (studying ‘myself,’ studying ‘ourselves,’ and studying ‘them’), CDAI:

...heightens your awareness of your own purposes and assumptions, of the quality of your conversations moment by moment with the other person or persons with whom you are meeting, and of how your action in the moment relates to group and corporate quality. (Torbert, 2003, p. 7)

Collaborative Developmental Action Inquiry points to the four territories of experience shown in the table below, as constituting the first-person field of action inquiry. This first-person inquiry is bound by the current limits and often-unexamined assumptions of the self’s capacity for perception, perspective-taking, and meaning-making (i.e. the developmental action-logic through which one currently experiences life). Adding the two additional fields of inquiry – second and third person inquiry– offers a fuller understanding, and engagement with life.

Table 4

The Deep Four Territories of Experience

Territory	Experience
First	Outside events: results of actions, observable phenomena
Second	Own sensed embodiment and performance: one’s own behavior, skills, patterns of action as sensed from within
Third	Action-logics: cognitive/affective structures, models, maps, meaning-making style
Fourth	Intentional attention: presencing awareness, vision, intuition

Note: Adapted from “Developmental Action Inquiry: A distinct integral approach that integrates theory, practice, and research in action,” by Torbert, W., Herdman-Barker, E., Livne-Tarandach, R., McCallum, D., & Nicolaidis, A., 2010, in S. Esbjörn-Hargens et al (Ed.s) *Integral Theory in Action*. Albany NY: SUNY Press, p. 415. Reprinted with permission.

Collaborative Developmental Action Inquiry also includes single-, double- and triple-

loop learning and change. Single-loop learning includes hypothesis testing and behavioral change (Torbert, 2003, 2004). Double-loop learning, similar to transformative learning, consists of changes of assumptions and beliefs (Mezirow, 1990, 2000). Triple-loop learning entails the re-visioning or transformation of the underlying intentions and desires that, in turn, affects human mental models and actions (Torbert, 1991, 2003, 2004, 2013).

Torbert (2004, 2013) articulates the developmental patterns relating to these three forms of learning:

Single-loop learning is practiced regularly at the Achiever action-logic, double-loop learning is first explicitly recognized at the Individualist action-logic and becomes a touchstone of the Strategist action-logic. Triple-loop, in-the-moment inquiry is increasingly practiced in everyday life at the Alchemist and Ironist action-logics. (Torbert et al., 2004)

Engaging in single-, double- and triple-loop learning has the possibility of supporting and catalyzing development itself. Torbert (2003) wrote: “Developmental Action Inquiry takes us to the very frontier of our current way of balancing. It may even take us beyond our current way of balancing—out of that balance, perhaps temporarily altogether off balance—as our way of balancing transforms” (p. 34). In this sense, CDAI provokes or stimulates what Mezirow (2000) calls “disorienting dilemmas” (p. 22), experiences of disequilibrium that can lead to learning and growth by revealing the insufficiency or incompleteness of a prior perspective.

Collaborative Developmental Action Inquiry informed the design of the action inquiry reflection cycles that guided the research participants’ inquiry, dialogue, and reflection as they learned about adult development, inquired into their own development, and explored its application to teaching, mentoring, and sustainability education.

Sustainability Education

This section reviews literature and research on sustainability education and in particular the role that worldviews, values, and adult development can play in effective sustainability education. It is common in the overall field of sustainability education to call for a transformation of consciousness or worldviews, as well as lifestyles and behaviors, to more adequately address the complexity and scope of the ecological and social challenges that humanity presently faces (Brown, 2010b, 2012; Esbjörn-Hargens & Zimmerman, 2009). While work in sustainability and social and ecological change points towards the need to change behaviors, lifestyles, and the design of human systems, there is a growing recognition that these changes are difficult to achieve without considering the worldviews, mindsets, and values of the people one is either trying to change or to engage in efforts to create change (Esbjörn-Hargens & Zimmerman, 2009; Hedlund-de Witt, 2013; O'Brien & Hochachka, 2010). Sustainability researchers and practitioners McEwen and Schmidt (2007) emphasize the role of worldviews in the following statement: "Sustainability is as much about the mindset through which the world is seen as it is about the activities taken in support of it" (p. 30).

The increasing recognition of the role of values and worldviews in social and ecological change work is reflected in the development of new fields such as conservation psychology, which applies psychological findings to sustainability and conservation efforts (Clayton & Myers, 2009; Saunders, 2003), and the growing interest in research on values, beliefs, and perspectives related to sustainability challenges, such as Yale University's "Global Warming's Six Americas" (2008), and Mike Hulme's (2009) well regarded book titled "Why We Disagree about Climate Change." Research on worldviews, values and their roles in social and ecological change work has tended to aim towards understanding the diversity of perspectives at play in

relation to particular issues, in order to better design campaigns, change initiatives, and communication strategies, and the like. This research also aims to transform these worldviews and their associated behaviors away from more anthropocentric values and towards more ecocentric and sustainability-friendly values (Brown, 2010b, 2012; Esbjörn-Hargens & Zimmerman, 2009; Hedlund-de Witt, 2013).

In sustainability education there is also an increasing integration of and call for transformative and whole person learning (O’Riordan & Voisey 1998; Cress, 2004; Sterling, 2002; Reid, Mustakova-Possardt & Podger, 2010). Sustainability educator and researcher Heather Burns (2011) articulated this when she said that “if educators are to effectively prepare learners with the knowledge, skills, and values they will need for creating more sustainable places and communities, a transition must be made from transmissive teaching models to transformative learning processes” (p. 1). How to achieve the transformation of worldviews and values is not well understood and is rarely grounded in or informed by the research in adult developmental psychology.

In the past decade, however, there have been more studies examining the implications of developmental psychology for sustainability education including Reid, Mustakova-Possardt and Podger’s (2010) study on “A whole-person approach to educating for sustainability” and Meyers and Beringer’s (2010) study of cognitive and identity development of college students in learner-centered and project-based sustainability pedagogy. Reid et al., (2010) state that much of what sustainability education calls for in terms of capabilities and disposition, such as selflessness (Taylor, 2000), a “connective cultural consciousness” informed by a relational worldview (Sterling, 2007), and a new ecological, humanistic, and transformative worldview that assumes interdependence and interconnection, have been shown by psychological developmental research

to pertain to mature critical moral consciousness (Mustakova-Possardt, 1998, 2004), in other words, later stages of adult development. Their case study, albeit limited in scope, suggests that a whole-person approach to education for sustainability may yield more fruitful societal and personal benefits than traditional, and predominantly, behavioral approaches. Meyers and Beringer (2010) make the point that although the theory and practice of sustainability education at the post-secondary level has increased greatly in the last few years (Adomssent, Godemann, & Michelsen, 2008), in particular curricular theories and pedagogical innovations (Beringer, 2007; Beringer, Adomssent, & Scott, 2008), the scholarly literature analyzes such conceptions without reference to well-established understandings of students' college-age development, which they would do well to address. Meyers and Beringer (2010) argue that “emancipatory sustainability education at the post-secondary level needs to be informed by psychological theory on college-age intellectual, moral, and identity development” (p. 70).

To conclude, sustainability education increasingly advocates for integrating a transformative approach to learning and calls for worldview transformation to cultivate the values and capacities seen as necessary for sustainability work. Research in adult development informs how students (and faculty) perceive and orient to sustainability; how to design pedagogies to address different developmental needs; and suggests that many of the aims and outcomes of sustainability education, including its call for a transformation of worldviews, has developmental implications. However, the only research done in this regard has been either theoretical or exploratory. Research applying adult development theory to sustainability education at the post-secondary level, such as this study, can begin to address these gaps in the literature.

Sustainability Leadership Development

This section reviews literature and research on sustainability leadership, in particular the role that worldviews, values, and adult development can play in cultivating effective sustainability leadership. The research provides insight into the psychological foundation underlying effective and transformative leadership (Boiral, Cayer & Baron, 2009; Brown & Riedy, 2006; Esbjörn-Hargens & Zimmerman, 2009). Sustainability leadership and change leadership literature is included because there is more research exploring the relationships among worldviews, values, adult development, and sustainability practice than can be found in the sustainability education literature. It is also included because sustainability education in higher education is often informed by the work of sustainability practitioners, leaders, and change agents. For purposes of this research, the term leadership is not limited to individuals who hold a particular role or position of leadership; rather, it includes anyone working towards positive social and ecological change, individually and/or collectively.

In general, research in the field of sustainability leadership is still at an early stage, with limited quantitative results (Cox, 2005; Gustafson, 2004; Quinn & Dalton, 2009). The lack of large-scale, empirical research makes it difficult to draw conclusions about the nature of sustainability leadership; however, there are patterns toward which the research points.

Many in the sustainability and change leadership fields observe that the complexity of social and ecological challenges and rapid rates of change call for leadership that is adaptive, collaborative, transformative, and creative (Brown, 2012; Heifetz, 2009; Sharma, 2000). This is articulated by Boiral, Cayer, and Baron in the following: “The complexity of environmental issues, their interdisciplinary and global nature, the surrounding societal pressures, and the internal transformations they necessitate all create the need for specific skills, changes, and

approaches” (Boiral, 2006; Fernandez et al., 2006; Sweet et al., 2003, as cited in Boiral et al., 2008). From their review of the environmental leadership literature, Boiral et al. (2008) summarize that in addition to environmental or sustainability values, leaders engaged with these issues need to be able to: (i) deal with the complexity of environmental issues; (ii) integrate seemingly contradictory outlooks; (iii) understand and address the expectations of a wide range of players; and (iv) profoundly change organizational practices” (p. 483). Like other leadership scholars who consider the development of sustainability leaders, they propose that how a leader knows is at least as important as what a leader knows (Boiral et al. 2009, Brown, 2012). Eigel (1998) articulates similar views in the following:

It is not the content of a behavior or leadership style that matters, that is, what is actually done or believed, but rather how one epistemologically makes sense of the content of the behavior or leadership style that makes a difference. (p. 27)

Boiral et al. (2009) looked at the existing literature on leadership and constructive developmental psychology (e.g., Cook-Greuter, 2004; Rooke & Torbert, 2005; Torbert, et al., 2004) and extended it to environmental leadership. They hypothesize a close relationship between how leaders address environmental issues and their stage of development. A table summarizing their seven action-logics of environmental leadership can be found in Appendix I. Their proposition requires further empirical research on the behavior of sustainability leaders with different action-logics.

Another theoretical application of constructive developmental theory to sustainability and ecological identity was conducted by Esbjörn-Hargens (Esbjörn-Hargens & Zimmerman, 2009; Hargens, 2005). These authors propose a model of eight “ecological selves,” which represent different ecological worldviews, abstracted from constructive developmental research. To do this, the authors draw upon the action-inquiry research of Cook-Greuter (1999) and Torbert

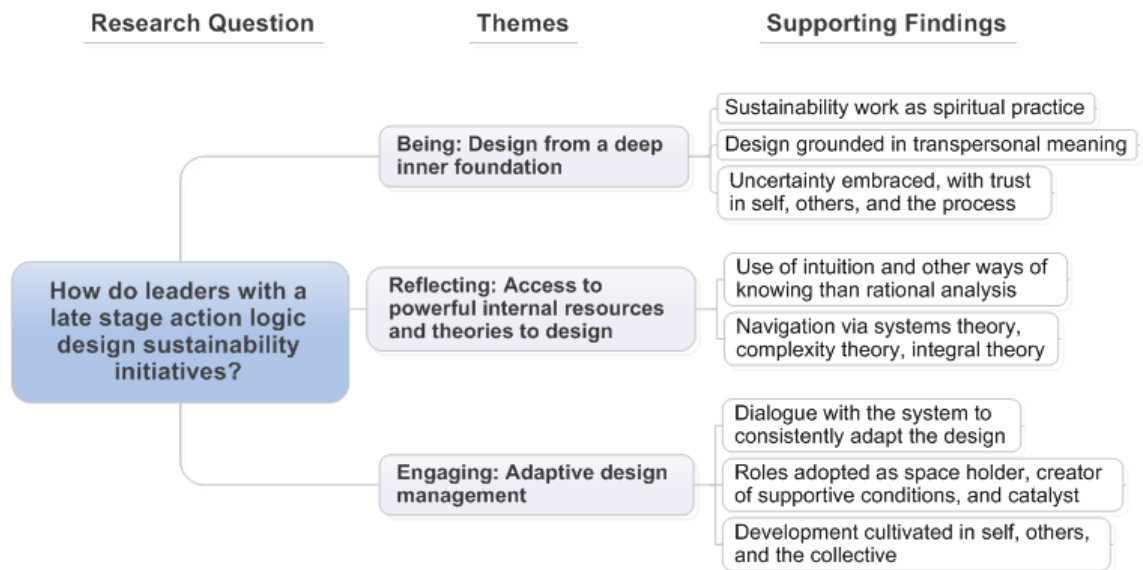
(2004) on post-autonomous ego development, as well as the “value memes” of Beck and Cowan (1996), based upon research on values by Graves (1974, 2005). The eight ecological selves embody the various value systems that individuals might hold with respect to the natural world (See Appendix J for a table summarizing Esbjörn-Hargen’s “Eight Ecological Selves” as cited in Rogers, 2012).

Doppelt (2003, 2010) interviewed 57 senior leaders in business and government from North America and Europe about their change strategies for sustainability, built a framework for leading change toward sustainability, and drew heavily on the fundamentals of systems thinking (Bertalanffy, 1968; Laszlo, 1972) and change leadership models (Kotter, 1996; O’Toole, 1996). Doppelt makes the point that too much attention is placed on new technologies and policy instruments for sustainability and that there has been insufficient focus on how to change the internal thought processes, assumptions, and behaviors required to adopt the tools and techniques. To change organizational culture, Doppelt recommends addressing two key areas: (a) the organization’s governance system, and, (b) its leadership (as cited in Brown, 2012).

Barret Brown’s (2012) study is one of two studies I was able to find on sustainability leadership that measured the action-logic of its participants. Brown’s (2012) research considers how sustainability leaders with post-conventional meaning-making systems, or action-logics, design and engage with sustainability initiatives. Brown found that these post-conventional leaders: (1) design from a deep inner foundation, including grounding their work in transpersonal meaning; (2) access non-rational ways of knowing, and use systems, complexity, and integral theories; and (3) adaptively manage through “dialogue” with the system, three distinct roles of space holder, catalyst and creator of supportive conditions, and developmental practices. He proposes that “a constructive-developmental lens offers considerable insight for sustainability

leadership theory” and that “all leadership programs should include the development of meaning-making capacity, in view of the enhanced abilities that may emerge with each post-conventional stage” (Brown, 2012, p.189).

Figure 2. Summary of Brown’s Research Findings



Note. Summary of themes and findings of Brown’s research into how late stage sustainability leaders design initiatives. Adapted from “Conscious Leadership for Sustainability: How Leaders with a Late-stage Action-logic Design and Engage in Sustainability Initiatives,” by B. Brown, 2012, Fielding Graduate University, *ProQuest Dissertations and Theses*, p. 125. Copyright 2012 by ProQuest. Reprinted with permission.

Boiral, Baron, and Gunnlaugson (2013) explored how the stages of consciousness development of managers influenced their abilities and commitment to environmental leadership in different types of businesses. In their study of 15 top managers in small and medium industrial enterprises, the participants’ development ranged from Diplomat through Individualist. The research looked at the differences between the conventional stages (Diplomat, Expert, and Achiever) and the post-conventional stage Individualist with regards to environmental leadership. This study also illustrated the values and capacities associated with both environmental leadership and the later stages of consciousness development, which included a

broader and systemic perspective, long-range focus, integration of conflicting goals, collaboration with stakeholders, complexity management, and collaborative learning, among others. They also found developmental differences between the Achiever and Individualist business leaders' abilities in and commitment to environmental leadership. The study found that Achiever managers' environmental commitment was variable. When present, the commitment was driven by economic opportunities and industry pressures, or justified by an articulation of economic and strategic issues rather than being explained in terms of personal values. The study found that Individualist managers were the most committed to environmental protection, were seen as "green leaders" by their employees, and were more inclined to propose creative solutions, question existing rules, and promote participative approaches.

A 2013 study by Brown and Divecha explored correlating action-logics to how people talk about sustainability. The researchers worked towards developing a model of this correlation through an iterative process of examining interviews of 47 sustainability leaders, thirteen of whom were participants in Brown's Ph.D. research and had already gone through a developmental assessment. The remaining thirty participants, mostly senior managers in two multinational corporations, were interviewed and the transcriptions of the interviews were coded against the action-logics model, which was then refined and rechecked against the data. A more detailed view of the model can be found in Appendix K. The authors acknowledge that what they have developed is the outline of a model, rather than a rigorous metric, that demonstrates to how to correlate sustainability statements to action-logics with low uncertainty. The development of such a metric, while valuable for the sustainability field, would require more research to test and develop. However, this model can be helpful in characterizing sustainability perspectives and meaning-making. Divecha and Brown offer:

Categorizing sustainability with action-logics may help realize the benefits of developmental perspectives for deeper understanding. The potential is to expand the research to create a more comprehensive and validated model (and/or metric) for assessing people's sustainability understanding and views. Such a sustainability action-logics model may be useful for enabling better and more effective sustainability interventions. (2013, p. 20)

Further research is needed to validate and refine this model; however, it illustrates how people make sense of sustainability in distinctly different ways (Brown & Divecha, 2013).

To conclude, the research on sustainability leadership points towards the importance of including values, worldviews, and psychology in understanding the development of sustainability educators and leaders. Adult development can be used to better understand and work skillfully with the diversity of perspectives and practices engaged by sustainability practitioners. It offers a more nuanced and detailed understanding of these differences, rather than a more dualistic view of those who have environmental values or an eco-centric worldviews and those who do not, or are more anthropocentric in their worldviews. Additionally, understanding how sustainability perspectives and practices are likely to develop through the stages informs sustainability education and leadership development. More empirical research is needed to understand the behavior and practices of sustainability educators and leaders with different action-logics, and this research aimed to contribute to closing the gap in the literature.

Adult Learning

Adult learning is a complex and diverse field of theory and practice; therefore, it can be challenging to define:

Perspectives on adult learning have changed dramatically over the decades. Adult learning has been viewed as a process of being freed from the oppression of being illiterate, a means of gaining knowledge and skills, a way to satisfy learner needs, and a process of critical self-reflection that can lead to transformation. The phenomenon of adult learning is complex and difficult to capture in any one definition. (Cranton, 1994, p. 1)

Developmental researcher and educator O'Fallon (2011) speaks to this when she writes, "there is a different educational theory for every developmental perspective," making the point that educators operating from different action-logics are drawn to and enact different educational theories (para. 3). The idea is that there are multiple dimensions of diversity, including, for example, family backgrounds, learning styles, age, and culture, all of which influence learning needs and interests. However, there is a "hidden form of diversity," which Drago-Severson (2004a) calls "the new pluralism", that functions like an internal operating system in the individual. The developmental diversity of both the educators and their students has significant implications for teaching and learning. Constructive development theory for ego development looks at the development of the whole person (including affective, behavioral, and identity development) and therefore integrates and includes many of the other forms of diversity. This research explores this form of diversity: developmental diversity and the implications for sustainability education, and adult teaching and learning.

In addition to the diversity of individuals in a teaching/learning context, the rapidly changing contexts of life in the twenty-first century also informs the needs and aims of adult education. The aims of adult education have often been stated as preparing adults to participate in the domains of work, family, and society (Merriam & Caffarella, 2006). However,

accelerating complexity and the rate of changes in the increasingly global world call for “innovative habits of learning as a way to better manage work/life situations” (Goleman, 1997; Goleman et al., 2002; Heifetz, 1994 as cited in Nicolaidis, 2008). The ability to think systematically increasingly becomes an imperative if humans are to thrive in a more interdependent global society and constructively engage with complex global issues (Harris, 2002).

Given the diversity and complexity of understanding and meeting the needs of adult students in the twenty-first century, it is generally recognized that adult education is more effective when it includes knowledge and skill development, and the development of worldviews or meaning-making structures. Adult education concerns not only what people know, but also how people know, and how both of these factors contribute to informing action in the world. Mezirow (1991), who coined the term “transformative learning,” echoes this when he says, “It is not so much what happens to people but how they interpret and explain what happens to them that influences their actions, hopes, emotional well-being and performance” (p. 13). In keeping with this notion, adult learning theory and practice makes a distinction between learning as knowledge acquisition and learning as growth of more complex ways of meaning-making, which is sometimes referred to as the difference between informational and transformational learning, or as was mentioned earlier in the chapter, horizontal and vertical development (Cook-Greuter, 2004; Drago-Severson, 2004a; Kegan, 2000; Mezirow, 2000). Both types of learning are important, and the key, suggests Kegan (2000), is one of timing: knowing when to give one more attention than the other.

Mezirow (1990, 1991, 2000) describes transformative learning in the following way:

...the process by which we transform our taken-for-granted frames of reference (meaning perspectives, habits of mind, mind-sets) to make them more inclusive, discriminating,

open, emotionally capable of change and reflective so that they may generate beliefs and opinions that will prove more true and justified to guide action. (2000, p. 7-8)

Although transformative learning researchers and theorists have different opinions about the process of transformation, there are three common components identified as essential for transformation: reflective discourse (Mezirow, 2000), critical reflection (Brookfield, 2000; Mezirow, 2000), and informed action (Yorks & Marsick, 2000), the desired result of discourse and critical reflection (Daloz, 1999, 2000).

Adult developmental research applied to adult and transformative learning sheds light on the meaning-making process of adult learners, the developmental differences in making meaning, and the corresponding learning support and challenges needed at different developmental stages. It also informs the process of transformation or vertical development itself – attending to the form that transforms (Drago-Severson, 2004a, 2004b; Kegan, 1994). However, it is only relatively recently that researchers have begun to apply a developmental lens to students' experiences of transformative learning (e.g. Fisher & Torbert, 1995; Harris, 2002, 1996; Kegan 1982, 1994; McCallum, 2008), and more research is clearly needed.

Implications of Constructive Development Theory for Adult Learning

The implications of constructive development theory for adult learning are many and varied. Constructive development theory can inform the development of curriculum, and the practices of teaching and mentoring for effective and transformative learning, by informing what more developmentally mature teaching/learning can look like (by providing a map of emerging capacities). Adult development theory can also guide curriculum design, along with teaching and mentoring, in developmentally responsive and appropriate ways: how to meet students where they are developmentally and support their next steps, as well as how to more effectively work with the developmental diversity of a learning community (Cook-Greuter, 2006; Drago-

Severson, 2004a, 2004b; Kegan, 1982, 1994; O'Fallon, 2010b, 2013; Torbert, 200b, 2004, 2014).

An important first step is recognizing the developmental diversity of learners. How adults make meaning, how they respond to different educational experiences, and their capacities for and styles of self-reflection, self-direction, and collaborative learning are all significantly influenced by a student's developmental stage. In this study, the student research participants' developmental assessments ranged from Achiever through Transpersonal. The faculty members' assessments showed a range from Achiever to Strategist. This data offers an example of the developmental diversity that is possible in a group of graduate students and faculty, and demonstrates the importance of learning how to work skillfully with such a diversity of meaning-making.

Developmental research applied to adult learning reveals significant difference across the developmental stages with regards to how individuals orient to and perceive feedback, their perspective-taking capacities, their space frame or whom they include in their circles of care and responsibility, and their time frames (differing capacities to include past and future generations in their decision-making and behavior). It also addresses the rules that guide individuals' sense-making and choices of action, whether their thinking is more black and white, either/or, both/and or paradoxical, their capacity for and style of self-reflection, and their awareness of and capacities to work effectively with complexity. While knowing something about a student's development is only one dimension of the complexity of the individual, it can provide insight into his or her learning experiences. These developmental differences can inform mentoring, teaching, and curriculum development. They indicate ways of providing developmentally informed learning support and challenges. These patterns will be discussed in greater depth in subsequent chapters; however, the following paragraphs examine two of the patterns:

perspective-taking and feedback. These patterns offer an example of a developmental progression relevant to learning and teaching.

Perspective-taking is a central pattern of the developmental process. Kegan examines the subject-object move at the center of constructive development theory: When people are subject to something, it has them rather than them having it. In other words they are not able to see it and therefore cannot work consciously with it or change it. With ego development and the StAGES model, perspective-taking capacity expands throughout the stages from first through sixth person perspectives and beyond. As illustrated in Table 5, an awareness of one's own interior does not arise until the beginning of the third person perspective, first available with the Expert action-logic. Until this point, self-reflection, considered essential for transformative learning, is challenging if not impossible. It is still highly difficult at the Expert action-logic and needs to be clearly structured and guided. Students operating from this stage of development may be prolific at generating new ideas or curriculum, for instance, but will have difficulty reflecting on their own processes and why they generated the work they did. Self-reflection becomes easier at the Achiever action-logic, especially if it is clearly tied to goals and outcomes. Self-reflecting in this way can be transformative for Achiever students. Self-reflection tends to be highly valued by Individualists, and as result, research methods such as autoethnography and phenomenology are of interest. Much of higher education aims for critical self-reflection, a capacity that becomes available at the Achiever action-logic or Kegan's self-authoring stage (Drago-Severson, 2004a, 2004b; Kegan 1982, 1994). Another common goal of postmodern higher education is social deconstruction, and this capacity is not naturally available until the context-aware capacities of a fourth person perspective at Individualist. Expecting outcomes beyond a student's developmental capacity puts them in over their heads and might be

experienced as an over-stretch. It is important to understand the developmental support that different students might need and integrate these measures into the design of curriculum. It is equally important to be attentive to the epistemological demands and assumptions that classes make on students and recognize that if a student cannot engage successfully in an activity, it might be because it is beyond the capacities of his or her current way of making meaning (Cook-Greuter, 2006; Drago-Severson, 2004a, 2004b; Kegan 1982, 1994; O’Fallon, 2010b, 2013).

Table 5

Action-logics, Perspective-Taking Capacities and Patterns of Thinking

Developmental Stage	Perspective-Taking and Polarity Patterns
Diplomat	Late 2 nd person perspective: In relationship with another, can take his or her own perspective, needs, desires and those of the other. “See others seeing them.” Concerned about socially expected behavior, approval, avoids conflict, loyalty to chosen group. Wants to belong. One right way thinking.
Expert	Early 3 rd person perspective: Stands back and observes two others interacting and objectively sees what is happening. Beginning recognition of one’s own ideas separate from social groups (interiors arise). Interested in expertise, procedure and efficiency, what is logical. Has a hard time prioritizing these ideas. Knows the answer. Black and white thinking.
Achiever	Late 3 rd person perspective: Interested in rational scientific analysis, success within system, thinking about thinking. Prioritizes ideas for effectiveness and goal-oriented results. Either/or thinking.
Individualist	Early 4 th person perspective: Stands back and can see the objective observer, observing the two others – sees that the observer is situated in a social context, and therefore subjective. Aware of social contexts internally and externally. Has a hard time prioritizing contexts – relativism. Both/and thinking.
Strategist	Late 4 th person perspective: Understands and prioritizes interior and exterior contexts, sees developmental unfolding, shapes contexts to support development of self and others. Works with dynamic systems and paradox, linking theory and practice. One within the other thinking.
Construct Aware	Early 5 th person perspective: Stands back and sees the previous pattern of observing observers observing, awareness of the constructs people hold, the complexity of meaning-making, witnesses the emptiness of words and illusion of meaning. Has difficulty prioritizing constructs.

Note. Adapted from Cook-Greuter (2004), O’Fallon (2010b, 2013).

Another example of developmental progression relevant for curriculum design is how feedback is perceived through the stages of development. As seen in Table 6, the earlier stages of feedback (Expert 3.0 person perspective) can be experienced as deeply threatening and may

only be accepted from those considered to be authorities in the field. Student-to-student and collective feedback and assessment processes can be threatening and less effective at the Diplomat and Expert stages of development.

Table 6

Action-logics and Patterns in Relation to Receiving Feedback

Developmental Stage	Feedback
Diplomat	Receive feedback as disapproval, or as a reminder of norms. Deflect feedback that threatens loss of face. Unable to give feedback to others. Cannot question group norms.
Expert	Take it personally, defend own position; dismiss feedback from those who are not seen as experts in the same field
Achiever	Accept feedback especially if it helps them to achieve their goals and to improve
Individualist	Welcome feedback as necessary for self-knowledge and to uncover hidden aspects of their own behavior, to discover their authentic self
Strategist	Invite feedback for self-actualization; conflict seen as an inevitable aspect of viable and multiple relationships
Construct Aware	View feedback (loops) as a natural part of living systems; essential for learning and change; and take it with a grain of salt.

Note. Adapted from Cook-Greuter (2004), O’Fallon (2010b, 2013).

Another area of significance of adult development theory and research for education is the recognition that educators are also developing, which influences their perspectives and practices with regards to teaching and mentoring. Constructive development theory can support the professional development of faculty through increased self-awareness, self-knowledge, and self-reflection, and by supporting an understanding of the developmental diversity of students. Developmentally aware professional development might help educators avoid a common tendency to unknowingly project their own developmental needs or worldviews on their students, which may not be a developmental match for their students (O’Fallon, 2011).

Additionally, a particular program and school have their own developmental tendencies related to the culture of the school, the aims of the program, and the development of the faculty members. Although these frameworks focus on the development of individuals, groups or collectives also demonstrate their own developmental patterns that relate to the aggregate development of the individuals, the culture of the collective, and the collectives' maturation. According to several researchers and theorists, much of undergraduate education aims for the development from Kegan's (1982) socializing to self-authoring (Diplomat to Achiever/Individualist) ways of thinking (Kegan, 1982, 1994; Loevinger, 1998; Cook-Greuter, 2002; Baxter Magolda, 2002, 2004). This includes developing capacities for self-reflection, critical reflection, and the development of personal values and voice independent of one's social groups. Cook-Greuter articulated this in the following:

Achiever is the target stage for much of Western culture. Our educational systems are geared towards producing adults with the mental capacity and emotional self-reliance of the Achiever stage, that is, rationally competent and independent adults. (2013, p. 40)

Graduate and Ph.D. education often assumes that the students have access to these developmental capacities, which is sometimes the case but not always. From my observations and experience as a student, it was my sense that Prescott College's Ph.D. program is designed from and teaches primarily to the Individualist action-logic. The program values self-directed learning, self-reflection, and critique of the social construction of reality, integrates social and ecological systems in its approach to sustainability, and values transformative learning. As a result, the developmental transformation that Prescott College's Ph.D. Program is likely to support is from Achiever to Individualist. This particular developmental transformation is likely to be more relevant for some students and less for others. Learning about adult development theory may also support and inform program development.

Constructive development theory also informs the transformative learning process. An understanding of the developmental stages can guide the transformative process by revealing how a student or educator is currently making meaning and what might be next or is newly emerging. This can inform the kinds of support a student might need and what might be challenging for her or him (Harris, 2002; McCallum, 2008). In sustainability education there is a common call for the transformation of worldviews from a more anthropocentric worldview to a more ecocentric worldview. This usually also means from a value system that does not value sustainability towards one that does. The pressure to transform can create resistance in another person or an experience of overstretch, which can result in developmental regression or fallback (McCallum, 2008; Torbert, 2004). Additionally, constructive development theory suggests that developmental movement from one stage to the next generally takes years. Kegan states that it takes five years; however, more recent research shows that in certain developmental contexts and in response to significant life events, development from one stage to another can happen more quickly (O’Fallon, 2010a). Given that stage development can be slow, that a pressure to transform can be counterproductive, and that an individual’s readiness to transform is particular to his or her own developmental process, it can be more effective and supportive to provide a mix of challenge and support. Kegan and Lahey (2006) emphasize this point in the following: “An optimal incubator for development provides opportunities to both experience success by exercising fully already developed capabilities and stretching toward the development of slightly more complex capabilities” (p. 11).

Adult development theory has significant implications for and contributions to make to adult learning theory and practice. The following section reviews adult development research applied to education.

Adult Development Research in Education

The research at the intersection between adult development and adult learning has predominantly made use of Kegan's (1982) subject-object developmental model, and to a lesser extent the ego development and action-logics frameworks (Cook-Greuter 1999, 2004; Kegan 1982, 1994; Torbert 2004, 2013). The research is focused in two main areas: teacher development or preparation, particularly for K-12 educators and school leaders (e.g., Garvey Berger, 2002; Hammerman, 2002; Hasegawa, 2004), and the application of a developmental lens to examine the impact on students' development or the learning outcomes in a particular learning context or curriculum (Guilleaux, 2011; Harris, 2002; McCallum, 2008). Some of the research, although less of it, examines the development of particular capacities across the levels, such as Nicolaides' (2008) research on how people navigate ambiguity. I found only one study by Dr. Neale that examined the impact of learning about adult development itself (Drago-Severson, 2012).

Levine (1980) used adult development theory to assess the personal and professional development of teachers in an elementary school. More recently, Helsing et al. (2008) argued for a developmental perspective for educators' professional development. Sutton et al. (1996) used the constructive developmental framework from Belenky, Clinchy, Goldberger, and Tarule (1997) to understand preservice teachers' epistemological beliefs. They suggest that the pedagogy of preservice teacher education could be informed by an understanding of adult development.

Garvey Berger (2002) looked at the link between teacher belief and practice. She examined the way twelve novice teachers understand and believe they have enacted their experiences of the Harvard Teacher Education Program (HTEP). Berger's findings suggest that

teachers with different developmentally related capacities are differently able to withstand the socializing forces of their school contexts, to transfer their learning from their HTEP into their classrooms, and to find or create communities of practice with their colleagues.

Hammerman (2002) researched how math teachers' meaning-making affected their ability to apply their learning from a professional development institute to their teaching. Hammerman described the epistemological demands made on experienced teachers by curricular and pedagogical innovations in mathematics education. He found a strong link between the stage of development of the educator and how she or he was able to integrate and work effectively with constructivist pedagogical reforms. Hammerman found that Kegan's (1982) self-authoring stage (Achiever to Individualist action-logic) was the minimum stage of development needed to effectively learn and ultimately practice the concepts of constructivist thinking implicit in the pedagogical reforms.

In a four-year ethnographic study, Drago-Severson (1997) researched how adapting a developmental perspective to leadership influenced the opportunities principals have to increase teacher effectiveness and transform school cultures. More recently Drago-Severson (2004a) investigated the developmental dimensions of what principals need to sustain their learning from professional development and to support the development of educators in their schools. Drago-Severson (2004a) examined how a particular head of school "exercised her leadership on behalf of promoting adult growth. How does this head understand and experience her role? What are the attitudes, beliefs, and values that appear to govern her actions? How are her ideas translated into action?" (p. 80). Drago-Severson's (2004a) study reinforced the usefulness of adult development theory as a research tool.

Guilleaux (2011) also studied the development of principals. He found that introducing

adult development theory as a way of framing leadership development supported students' learning. It gave them a language to assess themselves, articulate their learning, and determine their learning goals for becoming principals.

Hasagewa (2004) examined the ways in which teachers' developmental stages affected the way they experienced the shift into a teacher leader role. She found that the more mature the complexity of meaning-making, the easier the experience of the shift into taking more leadership responsibilities was for a teacher. It can be hypothesized that the development of perspective-taking plays an equal if not greater role in the experience and effectiveness of the teachers' new role.

Collay and Cooper (2008) used the adult developmental lens of self-authorship (Baxter Magolda & King, 2004) to examine two teacher leadership graduate programs with a focus on transformational learning. In a study that used adult development theory to characterize adult learning, they found that transformational curriculum did support the development of self-authorship in female teachers. The authors concluded that self-authorship is necessary for effective school leadership in today's complex world.

In addition to teacher and school leadership development, adult development theory has also been used to examine adult and post-secondary students' experiences of curriculum and how development influences their learning needs and outcomes. A number of recent studies (Harris, 2002; Martynowych, 2006; McCallum, 2008; Nicolaides, 2008) all point to meaning-making as a significant influence on what and how students learn, and the developmental supports they might need for their learning to be more effective, successful, or transformative.

Harris (2002) examined how stage development influences a student's experience of a

transformative learning process. She found that the students at earlier stages of development were less likely to experience transformative learning, and those at later stages were more likely to. Harris made the point that transformation can happen at all levels of development; however, course design might preference transformation at a particular level (Individualist) and often the later stages (Individualist/Strategist). She also found that a student's developmental stage influenced the nature of the support she or he required and the use of particular learning strategies.

McCallum (2008) explored the relationship between participants' stages of adult development and their learning experiences in a Group Relations Conference. His research found that the participants' stages of development account, in part, for their capacities to learn from their experiences in this particular learning context. He also found that participants' developmental maturity affected how quickly they were able to recover from behavioral regression brought on by the complexity and conflict they experienced in the learning process.

Nicolaides (2008) looked at the relationship between adult development and how someone experiences and describes ambiguity or uncertainty. She found distinct forms of meaning-making in the participants' relationships with ambiguity. The Individualist inquired into ambiguity, the Strategist learned his or her way through ambiguity, and the Construct Aware surrendered to ambiguity. Finally, the Ironist (an ego development stage which includes Transpersonal) generated ambiguity in order to discover the creative potential that it promises.

To conclude, the research on adult development and adult/transformative learning demonstrates the significant implications of understanding developmental differences in meaning-making, and the corresponding learning support and challenges needed at different developmental stages. There is little research, as far as I am aware, of the impacts on educators

and students, (developmental and otherwise) from learning about adult development.

Summary

The three theoretical lenses that guided this inquiry were constructive development theory, adult learning theory focused on transformative learning, and sustainability education. Constructive development theory, and more specifically ego development theory, was also used as a hermeneutic lens to guide the design of the study and the data analysis. Research at the intersections of the three fields of constructive development theory, adult/transformative learning, and sustainability education reveal significant developmental dimensions to how individuals (and groups) engage with sustainability, teaching, and mentorship, as well as how individuals might perceive or experience a developmental perspective itself. These differences, and the developmental patterns that connect them, contain valuable insights and information for developmentally aware and responsive teaching and sustainability education. Understanding these differences, and learning to teach and practice sustainability with a developmental awareness and skill for working effectively with developmental differences, has the potential of deepening the transformative impact of these endeavors.

Little research has explored the impact of introducing constructive development theory, including awareness, knowledge, and a developmental assessment, to educators in higher education and, more specifically, sustainability educators. This study aimed to contribute to closing the gap in the literature. In the following chapter I review the study's methodological framework and research methods in greater detail.

CHAPTER 3: METHODOLOGY AND METHODS

This chapter details my research methodology and methods. The epistemology and general research design are reviewed. I then describe the rationale for the methodology and delineate the processes of participant selection, data collection, and analysis. Finally, I state my anticipated findings and conclude with a discussion of possible internal integrity threats and limitations to the study.

Research Design Overview

This study explored the personal, professional, and developmental impacts of introducing a constructive developmental perspective to faculty and students in a post-secondary program in sustainability education and leadership development. It also explored how adult development influences sustainability education, teaching, and mentorship.

The research questions were:

1. What are the personal and professional impacts of introducing a constructive developmental perspective (including knowledge, awareness of adult development, and experience of a developmental assessment) to faculty and students in a post-secondary program in sustainability education and leadership development?
 - a) How does awareness of and knowledge about development influence the practices and perspectives of sustainability educators?
 - b) What are the personal and professional influences on students and faculty?
 - c) What is the developmental impact of learning about adult development on the research participants?

2. How do students' or faculty members' developmental stages influence the following:
- a) Their perspectives and practices with regards to sustainability education?
 - b) Their experience learning about and perspectives on adult development?
 - c) Their experience as students in Prescott College's sustainability education Ph.D. program and/or their perspectives and practices with regards to teaching and mentorship?

This is a mixed methods approach to research using developmental structuralism as an interpretive lens. Data were gathered through two rounds of semi-structured interviews, a five-month action inquiry process including reflective writing, group and individual phone calls, and a developmental assessment instrument administered at the beginning and end of the study.

Methodology

Mixed Methods Design

The methodology chosen for this study was mixed methods. Mixed methods, as a distinct research approach, is relatively new in the social and human sciences. It appears to have originated in 1959 when Campbell and Fiske used multiple methods to study the validity of psychological traits – through a multi-method matrix – using multiple approaches to data collection including interviews and observations, combined with surveys. Part of the rationale for mixed methods research is that biases in one method can neutralize or cancel biases in another method. Triangulating data sources provides a means for seeking convergence across qualitative and quantitative methods (Jick, 1979), and research from one method can help develop and inform the other method (Creswell, 2003).

There are three general strategies (with a variations in each strategy) that are used to

guide mixed methods research:

- Sequential – in which the researcher seeks to elaborate on or expand findings of one method with another method.
- Concurrent – in which the researcher converges quantitative and qualitative data to provide comprehensive analysis of the research problem.
- Transformative – in which the research uses a theoretical lens as an overarching perspective within the design that includes both quantitative and qualitative methods. The lens provides a framework for the topic of interest, the methods of collecting data, and the outcomes or changes anticipated by the study. This strategy can be sequential or concurrent (Creswell, 2003, p.16).

The growing interest in mixed methods research is reflected in the increasing number of articles, journals, and books that focus on mixed methods approaches (Creswell, 2003, p.208).

Challenges to a mixed methods design are that it can be time intensive, and it requires a familiarity with both quantitative and qualitative approaches to research.

I chose a mixed methods methodology because I was interested in both quantitatively (pre and post developmental assessments) and qualitatively (pre- and post-interviews and reflective journals) assessing the impact of introducing a developmental perspective (through knowledge, inquiry, and assessment) to students and faculty in a post-secondary program in sustainability education and leadership development. The mixed methods strategy I chose for the research design was a concurrent transformative strategy. This strategy is guided by the use of a particular theoretical perspective, which in this case is constructive development theory or developmental structuralism. The qualitative and quantitative data were collected concurrently.

The design can either be nested (unequal prioritization of the qualitative and quantitative methods) or involve triangulation in which both approaches are of equal priority. I used a triangulation design to look for convergences within the data, and I integrated the data during the interpretation phase.

Developmental Structuralism

Developmental structuralism studies someone's subjective experience from an objective, third-person, so-called "outsider's" perspective. This is done over long periods of time to discern patterns and their unfolding sequences. Examples of patterns that structuralists have found include: Maslow's hierarchy of needs (Stephens, 2000), Kohlberg's stages of moral development (Kohlberg, 1984), Piaget's levels of cognition (Piaget, 1954), Kegan's five orders of consciousness (Kegan, 1994), and Loevinger's ego-development stages (Loevinger, 1976).

Wilber (2006) describes the practice of structuralism in the following way:

Pose a series of questions to large groups of people. See if their responses fall into any classes. If so, follow those classes over time and see if they emerge in a sequential order of stages. If so, attempt to determine the structure or makeup of those stages. (as cited in Brown, 2010, p.18)

I did not conduct structural research; instead, I drew on the research of others, in particular constructive-developmental theory for ego development, which integrates cognitive (thinking), affective (being or identity) and behavioral (doing) development. This theoretical framework was created by Jane Loevinger (1970) and further developed by Torbert (2004, 2013), Cook-Greuter (1999, 2004) and O'Fallon (2013).

Overview of Information Needed

The problem and purpose statement in Chapter 1 discussed a lack a research on the impact of introducing a constructive development framework to students and faculty in post-

secondary education as well as the relationships between adult development, sustainability education, and teaching and learning. The research questions included in Table 8 were developed to inquire into and understand the implications of doing this. The necessary information was collected and analyzed by the methods described in more detail later in this chapter. Table 7 presents an overview of the research questions, information needed to answer those questions, data collection methods, and methods of data analysis.

Table 7

Information Needed, Sources of Data, and Methods of Data Analysis

Research Questions	Information Needed	Data Collection	Data Analysis
1) What are the personal and professional impacts of introducing a constructive developmental perspective (including knowledge, awareness of adult development and experience of a developmental assessment) to faculty and students in a post-secondary program in sustainability education and leadership development?			
a) How does awareness of and knowledge about development influence the practices and perspectives of sustainability educators?	<ul style="list-style-type: none"> Participant describes influence on practices and perspectives Demonstration of influence (or lack of) through comparison of pre and post interviews, pre and post SCTi MAP, calls, and written reflections 	<ul style="list-style-type: none"> Interviews (pre and post) Written Reflections Verbal reflections on group and one-on-one calls SCTi-MAP (pre and post) SCTi-MAP coaching session Observation field notes and memos 	<ul style="list-style-type: none"> Constant comparative analysis: open to analytical coding. Research questions guide creation of categories, and emergent categories were sought NVIVO to analyze, code and synthesize transcriptions of the interviews, written reflections, observation notes & memos
b) What are the personal and professional influences on students and faculty?	<ul style="list-style-type: none"> Participant describes personal and professional influence Demonstration of influence (or lack of) through comparison of pre and post interviews, pre and post SCTi MAP, calls, and written reflections 	<ul style="list-style-type: none"> Interviews (pre and post) Written Reflections Verbal reflections on calls SCTi-MAP (pre and post) SCTi-MAP coaching session Observation field notes and memos 	<ul style="list-style-type: none"> Constant comparative analysis: open to analytical coding. Research questions guide creation of categories, and emergent categories were sought NVIVO to analyze, code and synthesize transcriptions of the interviews, written reflections, observation notes & memos
c) What is the developmental impact of learning about adult development?	<ul style="list-style-type: none"> Change in SCTi-MAP score Change in sentence stem responses 	<ul style="list-style-type: none"> SCTi-MAP (pre and post) SCTi-MAP coaching session 	<ul style="list-style-type: none"> Comparison of pre and post developmental assessment scores and sentence stem

			responses
2a) How do student's or faculty's developmental stage influence their perspectives and practices with regards to sustainability education?	<ul style="list-style-type: none"> SCTi-MAP developmental assessment Participant describes practices and perspectives 	<ul style="list-style-type: none"> SCTi-MAP (pre and post) Interviews (pre and post) Written Reflections Verbal reflections on calls Observation field notes and memos 	<ul style="list-style-type: none"> Constant comparative analysis: open to analytical coding. Developmental stages guide coding and analysis. NVIVO to analyze, code and synthesize transcriptions of the interviews, written reflections, observation notes & memos
2b) How do students' or faculty's developmental stages influence their experience learning about and perspectives on adult development?	<ul style="list-style-type: none"> SCTi-MAP developmental assessment Participant describes their experience and perspectives 	<ul style="list-style-type: none"> SCTi-MAP (pre and post) Interviews (pre and post) Written Reflections Verbal reflections on calls Observation field notes and memos 	<ul style="list-style-type: none"> Constant comparative analysis: open to analytical coding. Developmental stages guide coding and analysis. NVIVO to analyze, code and synthesize transcriptions of the interviews, written reflections, observation notes & memos
2c) How do students' or faculty's developmental stages influence their experience as a student in Prescott College's sustainability education Ph.D. program and/or their perspectives and practices with regards to teaching and mentorship?	<ul style="list-style-type: none"> SCTi-MAP developmental assessment Participant describes their experience and perspectives on learning, teaching and mentorship 	<ul style="list-style-type: none"> SCTi-MAP (pre and post) Interviews (pre and post) Written Reflections Verbal reflections on calls Observation field notes and memos 	<ul style="list-style-type: none"> Constant comparative analysis: open to analytical coding. Developmental stages guide coding and analysis. NVIVO to analyze, code and synthesize transcriptions of the interviews, written reflections, observation notes & memos

The data I collected included:

- two rounds of eleven SCTi-MAP developmental assessments
- two rounds of 60-minute interviews
- six written reflections per participant (less were submitted)
- observation and field notes from the workshops I gave to students (two two-hour workshops via video conference calls) and faculty (a three-hour, in person workshop),
- observation and field notes from the developmental coaching calls (30 minutes each), from the four or five group calls every three weeks of the action inquiry process, and from the one-on-one calls

As described later, I used a variety of methods to analyze and interpret the data. In the next section I explain the site selection for the research.

Site Selection

Prescott College's Ph.D. program in Sustainability Education was the site selected for the study. Participants included Prescott Ph.D. and Master of Arts Program (MAP) faculty, and Ph.D. students and alumni. I chose this site because of its advanced degree program in sustainability education and my access to students and faculty in the program.

Prescott College's Ph.D. program in Sustainability Education strives to promote the evolution of ecological understanding, psychological/philosophical consciousness, and social learning for a humane and sustainable future. The desired outcome is "an informed, involved citizenry with the social and scientific literacy, commitment, and creative problem-solving skills to engage in responsible individual and cooperative actions toward a sustainable society" (Prescott College Ph.D. Student Handbook, 2012). In addition, the Prescott College mission is as follows:

To educate students of diverse ages and backgrounds to understand, thrive in, and enhance our world community and the environment. We regard learning as a continuing process and strive to provide an education that will enable students to live productive lives while achieving a balance between self-fulfillment and service to others. Students are encouraged to think critically and act ethically with sensitivity to both the human community and the biosphere. Our philosophy stresses experiential learning and self-direction within an interdisciplinary curriculum. (Prescott College Ph.D. Student Handbook, 2012)

The program handbook references Mezirow et al.'s (2000) approach to transformative educational methodology that includes engaging the learner through experience, participation, and reflection in the construction of meaning and knowledge. Sustainability educator Stephen Sterling (2001) is quoted as stating that sustainability education should be "...essentially

transformative, constructive, and participatory” (p.35).

The program aims for the transformation of meaning making. It is concerned with ways in which students and faculty perceive and interact with the world ecologically and socially, and ways in which students conceive of and engage in education. The program draws on educational philosophies and theories, including adult learning, and constructivist, humanist, and radical philosophical traditions. The pedagogy, or more accurately termed the andragogy, includes experiential, self-directed, and student-centered learning.

This low-residency Ph.D. program began in 2005. Students come from across the United States and the world. There are a total of 64 students presently in the program, and approximately 37 graduates. A total of nine core faculty presently teach in the Ph.D. program.

Selection of Participants

This study used purposive sampling. Purposive sampling was chosen because it is a natural fit with exploratory research. In addition, I purposefully selected both the institution and the participants because of their ability to provide data to answer my research questions (Creswell, 2003). This sampling method enabled me to use members of a specialized population for in-depth investigation. The purpose for using such sampling was to gain a deeper understanding of a smaller population rather than to generalize to a larger population (Neuman, 2006). Invitations to participate in the research were sent to all current and graduating Ph.D. students, nine Ph.D. faculty members, and three MAP faculty members and administrators at Prescott College. The MAP faculty and administrative staff to whom I sent the invitation were recommended to me by my core faculty, Rick Medrick, and Paul Burkhardt, Vice President for Academic Affairs and Provost. This was a self-selection process, although I made sure that all participants understood that participation required a time commitment of between 15 and 20

hours (see Appendix C and D for more information about the research invitation).

My rationale for a self-selection process was because I sought a group of participants who would be willing to make the necessary time commitment for the research process, and because I hoped to find a developmentally diverse research sample. According to Torbert's (2004, 2013) and O'Fallon's (2013) nomenclature describing the adult stages of development and their respective action-logics, the diversity of the 11 participants included those who ranged from the conventional Achiever 3.5 stage of development, to one who assessed at the post conventional Transpersonal 5.5 stage of development (O'Fallon, 2013; Torbert, 2004, 2013). While this sampling method had advantages as described above, it also may have attracted participants who were interested to learn about adult development. As a result, there may be limitations in any generalizations based on this study because of these volunteers' interest in adult development, relative to other students and faculty in Prescott College's Ph.D. program.

I began the study with eight faculty members and seven students. Four faculty members dropped out of the study, due to time constraints, and the final sample size was eleven. I introduce the participants in greater detail in Chapter 4.

Data Collection

Data collection methods included two rounds of 60-minute, semi-structured interviews, a pre and post developmental assessment using the SCTi-MAP, reflective writing, field notes, and observations on the developmental coaching sessions, the workshop, and conference calls that took place as a part of the action inquiry process, which lasted five months.

Pilot Study

In the pilot study conducted in March, 2012, I invited members of my doctoral cohort and some of the Ph.D. faculty to take the SCTi-MAP assessment. The individuals who chose to

participate also received developmental coaching for 30 minutes from a certified coach, and I gave them a two-hour workshop on adult development. There were five students in my cohort who participated (out of a total of nine) and one faculty member (out of two invited). Their range of development was Achiever through Construct Aware. I interviewed one of the participants from the pilot study (Katie) for this research, to add an additional Strategist student's perspective on the experiences of Prescott's Ph.D. program.

Semi-Structured Interviews

I conducted two rounds of 60-minute, semi-structured interviews with each participant, at the beginning of the study and at the end. A semi-structured interview is a method of research used in the social sciences. While a structured interview has a rigorous set of questions, which does not allow the researcher to divert, a semi-structured interview is open, allowing new ideas to be raised during the interview as a result of the interviewee's responses.

The interviewer prepares an interview guide, which is an informal grouping of topics and questions that the interviewer can ask in different ways for different participants. Interview guides help researchers focus an interview on the topics at hand without constraining them to a particular format. This freedom can help interviewers tailor their questions to the interview context/situation, and to the people they are interviewing (Creswell, 2003).

In the two rounds of semi-structured interviews, I met via phone or video call for approximately 60 minutes with each participant. The first round of interviews was conducted prior to the participants taking the developmental assessment, between July and August, 2013. I asked for permission to record the interviews, explaining that the recordings would be kept confidential, though they would be shared with a transcriber. I used a series of open-ended questions guided by my research questions. In the first round of interviews I sought to elicit

participants' perspectives and practices in relation to sustainability education and leadership development, mentorship, curriculum design, and teaching practices, and any prior knowledge and experience they might have had about adult development and its application to sustainability education and leadership development, mentorship, curriculum design, and teaching practices. In the second round of interviews, I sought to elicit participants' experience of learning about adult development, participating in a developmental assessment and coaching session, participating in the developmental workshop, and participating in the further action inquiry reflective learning process. I also inquired into any changes in their perspectives and practices regarding sustainability education and leadership development, mentorship, curriculum design, and teaching practices, and the influence on and application of adult development to these areas of practice (See Appendix F for more detail).

I strove to insulate my observations from my own biases and worldview. By writing down my observations and interpretations, I was able to reflect upon them and look for potential distortions from my worldview. I recognize that I cannot be completely objective, however, and that my methodology cannot be fully differentiated from my identity. Additionally, I entered this study with anticipated findings, as noted below. These come from my experience studying developmental psychology and adult learning, sustainability education, and leadership. Rather than ensuring completely pure observations, I trusted that the data were "confirmable." This means that the data can be tracked to their sources and that I used explicit and implicit logic to build my interpretations from the data (Erlandson, et al., 1993).

After the interviews were complete, I assigned each file a pseudonym to keep the identity of each interviewee confidential. The interviews were recorded digitally, labeled with pseudonyms to maintain the confidentiality of the interviewees, and transcribed by a professional

transcriber who signed a confidentiality agreement (See Appendix G). After each interview I documented salient issues, questions, and observations that arose.

SCTi-MAP

The SCTi-MAP (also known as the Leadership MAP), (Cook Greuter, 2006, 2014; Torbert, 2003, 2004) is a test comprised of 36 sentence stems that participants were invited to complete and submit for careful scoring. The SCTi-MAP is a projective technique, with sentence stems that deal with self-perceptions, social situations, and interpersonal relationships. The sentence stems enable participants to project their frames of reference into the incomplete sentences, while partially restricting the domain of the answers (Loevinger, 1979, 1998b). The structure of the sentences and language are assessed as much as the content. This psychometric instrument and the evaluative scoring system have proven to be reliable in helping to determine participants' developmental "center of gravity" (Cook-Greuter, 2006, 2013), their most available and consistent way of constructing the meaning of their experiences (See Appendix E for more detail).

Unlike others tools, the SCTi-MAP makes significant and subtle distinctions of the later stages of adult development. It identifies an individual's main developmental stage or action-logic. This is the level from which an individual habitually makes sense of her or his experience and the world. The profile points to someone's unique strengths and vulnerabilities, fallback positions and concerns, areas of major challenge, and potential for personal growth (Cook-Greuter, 2006, 2013).

The SCTi-MAP is one of the latest versions of the Washington University Sentence Completion Test (WUSCT; Loevinger & Wessler, 1970). Over four decades, the WUSCT has been extensively refined and validated (Cohn & Westenberg, 2004; Hauser, 1976; Loevinger,

1979; Manners & Durkin, 2001), and has been revised several times (Cook-Greuter, 1999; Hy & Loevinger, 1996). It is one of the most frequently used measures of human development (Bartunek, et al., 1983; Cohn & Westenberg, 2004; Cook-Greuter, 1999) and most carefully validated personality assessments available today (Torbert, 2003) (See Appendix G for more details on validity and reliability).

The SCTi-MAP measures cognitive, affective, and behavioral aspects of being. A SCTi-MAP final rating indicates subjects' overall ego stage or action-logic, or their highest, consistently available mode of functioning. Participants completed the initial SCTi-MAP after the first round of interviews, mid-July to mid-August, 2013. Participants were instructed to take 45 minutes to complete the online instrument, although some took much less time to complete the assessment. The assessments were scored by a certified scorer, and participants and I received results shortly after they completed the test. Each participant's developmental assessment was kept confidential by assigning a pseudonym to the file. Participants received 30 minutes of developmental coaching by a certified coach, in mid to late August, although one faculty participant (Samantha) did not receive her coaching until October due to scheduling challenges. The coaching calls were recorded so I could listen to them and make notes.

Participants completed the second SCTi-MAP after five months of action inquiry and seven months after their first assessment, in late March, 2014. The re-test took place after the second round of interviews, and participants received their results shortly afterwards.

Action Inquiry Reflective Learning Process

Participants were guided through a five-month action inquiry learning process to learn about adult development and its application to personal development, sustainability education, teaching, and mentorship. I decided to work with the students and faculty as separate groups, to

allow both groups to have a sense of privacy and independence from one another. The learning experience started with participants taking the SCTi-MAP developmental assessment, receiving the results and a descriptive report, and participating in 30-minute developmental coaching sessions with certified coaches. After this, both groups (faculty and students) were given a workshop to introduce them to the ego development framework. The faculty workshop was offered in person for three hours on August 23, 2013; however, one of the original faculty participants (Jeff) was unable to attend and received a two-hour version via video conferencing on September 16, 2013. The student workshop was divided into two, two-hour video conference sessions on August 16 and September 19, 2013. The workshops included an overview of the action-logics/ego development model of adult development and its application to sustainability education, teaching, and mentorship. Emphasis was placed on experiential learning and discussion about the model and its application. After the workshop, I asked participants to submit written reflections. Following the workshops, faculty and student participants, (again in separate groups) engaged in an action inquiry learning process over the course of five months. There were five learning cycles, each of which lasted approximately three weeks and included a focus action-logic, a topic such as developmental mentoring or sustainability through the action-logics with associated readings, videos or recorded talks, reflective writing, and an hour-long reflective conference call (video for the students, audio with faculty). During the fifth learning cycle, I made some changes to engage participants more actively with their learning and to tailor it to their particular needs and interests. Instead of the predetermined topic, I scheduled a 30-minute, one-on-one call with each participant in mid-January, 2014, to support participants' learning and help them choose an area of focus or application for the remaining learning cycle. During the final group call, participants shared their learning with each other. (For more detail

see Appendix H).

Faculty and students engaged with the action inquiry in significantly different ways (more in Chapter 4). Students were consistently present and engaged on calls, submitted the requested written reflections, completed an application project, and for the most part reviewed the readings and other learning materials. Students also chose to share their reflections with one another and responded to each other's reflections. Faculty mostly did not complete the written reflections, readings, or the learning projects. However, they did consistently participate in the calls. Table 8 offers an overview of the action inquiry and data collection timeline. Throughout the action inquiry process I took notes and wrote memos about my experiences and observations. I also responded to participants' written reflections via email and occasionally by phone calls.

Table 8

Action Inquiry and Data Collection Timeline

Event	Students	Faculty
Pre-Interviews	July 4 -15	July 11- Aug 5
Pre SCTi Map	July 15 - Aug 4	July 30 - Aug 10
Coaching	Aug 4 -19	Aug 10 -19
Workshops	Aug 19, Sept 16	August 23 in person (Sept 16 online, Jeff)
AI call #1	October 28	October 28
AI call #2	November 18	November 18
AI call #3	December 9	December 16
Individual Calls	Jan 5 -15	Jan 5 -15
AI call #4	Jan 20	Feb 3
AI call #5	Feb 24	
Post-Interviews	March 1- 8	March 1- 8
Post SCTi Map	March 8 – April 1	March 8 – April 1

Observations and Field Notes

I took field notes after the interviews, during the developmental coaching sessions, during the developmental workshops, and during the action inquiry process. These notes served as an additional form of data and as a means of triangulation (Maxwell, 2005). This triangulation, using multiple data collection methods, provided stronger substantiation of the constructs that I employed and the hypotheses that I generated. I also wrote memos throughout the process and kept a researcher's journal during the data analysis phase.

Through my observations I sought additional insight into how participants' experienced and made meaning of the developmental perspective and its application to their own personal and professional development, sustainability education, teaching, and mentorship. Field notes were also a validity check on the assumptions I held and the meaning I made of participants' experiences and perspectives.

Protection of Human Subjects

Each participant was informed of the study purpose, approach, and what to expect. This included how participant data was collected, stored, used, with whom it might be shared, and overall confidentiality. Participants had a right to know this information without ambiguity (Seidman, 1991). All participants signed an informed consent form (Appendix B). The collected data were not made available to any member of the public; only those involved in my scholarship at Prescott College knew details about the study. I used pseudonyms in all files and subsequent writings to protect participant identity and data. No comments, examples, or other information indicative of identity were published without explicit participant approval. Participants had the right to remove themselves from the study at any time, without repercussions. Participants were able to ask questions at any time or discuss reservations until any issues were resolved. Data

were collected via audio recordings and transcribed by a professional transcriber who signed a confidentiality form (Appendix G). All data were kept within password-protected computer files.

Data Analysis and Synthesis

The data set included the pre and post interviews, up to six written reflections per participant, SCTi-MAP coaching session, pre and post SCTi-MAP results, group and one-on-one calls, memos, and field notes. Interviews were transcribed by a professional transcriptionist.

The qualitative part of my mixed methods design used a constant comparative method for data analysis. This method was first proposed by Glaser and Strauss (1967), as a means for developing grounded theory. However, it is also used widely in qualitative research as a general approach for inductive and comparative data analysis (Merriam, 2009, p. 175).

Analysis of Data

Phase 1 - First cycle coding: January-March, 2014

1. I read the transcripts while listening to the interview recordings for both interviews, for each participant, made corrections where needed, took notes on my overall impressions, reviewed the notes made during the initial interview, and summarized these reflections and observations in a memo for each participant.
2. I kept a daily researcher's journal that I maintained throughout the analysis and interpretation phase.
3. I began coding using a combination of deductive codes based on the research questions, adult developmental theory, and inductive coding seeking emergent patterns in the data, using NVivo 10 software. I went through one participant's data at a time, coding his or

her interview transcripts, written reflections and my observation notes and memos regarding the participant.

4. Through the first cycle of coding, I added new codes as patterns emerged and re-ordered the codes for better organization.

Phase 2 - Second cycle coding: March-April, 2014

1. Prior to the second cycle, I revised the coding scheme, eliminating codes that were not relevant, clustering codes into themes and reorganizing the codes to reflect the emergent patterns.
2. I recoded all the data using the revised coding scheme, making analytic memos as needed, and adding analysis and reflections to each participant's memo, essentially creating a reflective summary of each person's data.
3. I revised these summary memos to reflect a more complete picture of each participant's experiences and my reflections and analysis.
4. I began to write about the themes emerging in the data in the form of early findings.
5. I created a framework matrix to summarize the data for each participant according to the themes emerging from the coding process. I integrated my reflective and analytic memos, as well as the raw data itself in the matrix.

In the first phase of the data analysis, I began the coding process with a combination of deductive codes based on my research questions and adult development theory. I also coded inductively, seeking emergent patterns in the data. In terms of the research questions, I sought data relating to participants' perspectives and practices with regards to sustainability education, mentoring, teaching, and learning, and how these have changed over time within the timeframe

of the research and beyond. I also wanted to understand the participants' experiences in learning about adult development, and their perspectives on this subject prior to participating in the research. I was also interested in their perspectives and understanding of its application to teaching, learning, and sustainability after participating in the research. I sought descriptions of participants' experience of Prescott College's Ph.D. program, whether as a student or a faculty member, and in particular what they considered to be the strengths and challenges, how they experienced or approached mentoring and teaching, and the transformative impact of the program.

During coding relating to adult development theory, I looked for relationships between the stage of development at which the participant was initially assessed and his or her approaches to sustainability, teaching, and mentoring; the experience as a student or faculty member in the Prescott College Ph.D. program; and the participant's experience learning about adult development. I also made cross-category comparisons of the data by grouping participants according to developmental stages and looking for patterns relating to the major coding categories: action inquiry, learning about adult development, sustainability education, teaching and mentoring, and experiences with Prescott College's Ph.D. program. I also looked for emergent patterns within each of the developmental stages. Additionally, with the understanding that an individual operates from a variety of meaning-making structures, both earlier and later than his or her "center of gravity" assessment, I also coded data that suggested meaning making from a range of developmental stages. I created a framework matrix of the developmental stages (Achiever through Transpersonal) and the coding categories, integrating my reflective and analytic memos, and the coded data.

After the first phase of coding, I significantly revised the coding scheme, grouping and

regrouping codes into categories, dropping codes that were less relevant and combining codes that were similar, until I came up with six major categories of codes. These were as follows: action inquiry, learning about adult development, developmental stage, sustainability education, teaching and mentoring, and experiences with Prescott College's Ph.D. program. I then recoded the data, using the new coding scheme, continued to create analytic memos, and coded the memos and participant summaries.

After receiving the second set of developmental assessment scores, I compared the two assessments using the early and late person perspective scores for the individual participants, the group of participants as a whole, and students and faculty separately. I compared their assessments quantitatively by assigning a numeric value to the difference between the first and second assessment. For instance, one participant (Stuart) assessed at Late Individualist, 4.0 stage of development in his first assessment, and 4.5 Strategist in his second assessment. Numerically I gave this a score of $+.25$, meaning an increase of half a stage of development. An increase of a whole stage of development is equal to a $.5$ increase. I also looked at the amount of time that participants took to complete the assessment and compared the amount of time they took for the pre and post developmental assessment. Finally, for the participants that showed a significant developmental change from the pre and post assessment, I returned to the data and looked for patterns, relating to their pre and post interviews and early and later written reflections, that might illustrate or reflect the developmental change or contradict it.

Throughout the analysis phase, I wrote a series of memos (Maxwell, 2005) regarding the emergent themes. I was making of the patterns in the data, questions that I had, and ideas for implications. At the end of the process of analysis, I developed memos that compared/contrasted the participants' descriptions and the meaning I was making of them with their developmental

assessments, pre and post, in order to see what behavior and thinking patterns correlated across individuals in these groups, as well as to determine any perspectives and practices that were discrepant. In these memos, I reflected on how the differing developmental maturity levels affected the perceptions of learning about adult development, as well as mentoring, teaching, and experience in Prescott College's Ph.D. program, as either a student or faculty member.

I conducted member checks with each of the participants, offering them transcripts of their quotes used to support and illustrate the findings and some of the interpretation that accompanied the quotes. I sought their comments, feedback and revisions as needed. These member checks also helped to maintain descriptive validity (Maxwell, 2005).

After the first and second phase of coding, I began an iterative process of running coding queries, I created two framework matrixes to summarize the data, and I began sketching out the early findings. One framework matrix summarized the data for each participant according to the themes and categories emerging from the coding process. The other summarized the data according to the developmental stage and the coding categories. I repeated this cycle of reviewing the memos and summarized data, running coding queries, and cross checking the initial findings with the results of the data analysis. Through this iterative process it became apparent that my research questions and the study I conducted generated four major findings or learning claims regarding the participants' experiences learning about adult development, and the relationships between their developmental stages and their perspectives and practices with regards to teaching, mentorship, and sustainability education. These findings and their implications are presented in detail in Chapters 4, 5, and 6.

Anticipated Findings

The anticipated findings below were written in March, 2013, before conducting the

research:

- I expect that there will be a diversity of responses among participants to the developmental framework. I expect that some of these responses will be influenced by the individual's developmental stage. Later stages (Strategist and beyond) may be more interested and able to work effectively with the complexity of the model and its application. However, individuals assessed at the developmentally earlier Achiever stage may also find value and be interested in the model. Individuals assessed at Individualist (and potentially Construct Aware) may not be interested, and/or resistant to the hierarchical dimensions of the model.
- I expect that there will be a range of commitment among participants to the action inquiry process and that the impact of learning about adult development will be affected by the degree of a participants' involvement.
- I expect that the students may be more open and responsive to learning about the developmental framework than faculty. I anticipate that some of the faculty may be participating to support me as their student, and may not be significantly invested in the learning process, which will likely have an effect on the outcome of the research.
- I do not expect much difference between the SCTi-MAP scores of the pre and post test, given that there are only seven months between each of these assessments.
- I do expect differences in the ways that people approach teaching, mentorship, curriculum design, sustainability education, and leadership, based on their developmental differences. I expect there to be increasing complexity in how individuals approach sustainability with increasing developmental maturity. I expect that individuals assessed at Individualist may not be as aware of projecting and promoting their own values and

beliefs on others, which might limit how transformative their mentoring is for students that are developmentally earlier or later than Individualist. I expect that Strategist individuals may intuitively understand development and may be very interested in transformative learning, self-development and integrating multiple worldviews in their approaches to sustainability education.

Integrity, Trustworthiness, and Validity

Internal Integrity

My research was an exploratory study of integrating a developmental perspective (knowledge, awareness, and experience) into higher education for sustainability education and leadership development, and it examined sustainability education, teaching, learning, and mentorship through a developmental lens. It revealed that doing so supports the personal and professional development of students and faculty and has the possibility of advancing sustainability education, sustainability leadership, and adult learning practices. As such, I made every effort to ensure credibility. This section details the potential internal integrity threats to this study and my strategies to counteract or minimize them. I first address my own biases and assumptions, as well as descriptive, interpretive, constructive, and theoretical validity threats.

Researcher Bias

As was mentioned in the prologue to Chapter 1, I have been learning about and applying my understanding of adult development to my teaching and sustainability work for approximately eight years. I was also a student in the Prescott College Ph.D. program. The student participants were colleagues, and were either members of my own doctoral cohort or the cohort directly before or after mine. The faculty members involved were my faculty, including

the chair of my dissertation committee. While there were advantages to my familiarity with the context and participants, I needed to ensure that my assumptions or hopes did not color or lead me to reinterpret participants' statements and my observations based on my own assumptions. As much as I strove to remain neutral and objective, my subjectivity cannot be removed from this epistemological equation and therefore needs to be made explicit and also an object of reflection.

My strategies for counteracting these biases and assumptions based on prior experience and familiarity with the theory was to admit these threats; ask for feedback from my committee; write memos to identify and objectify the emotional, mental, or other internally-sourced influences that arose; and track these assumptions and the ways in which they affected the research. I shared my self-reflections on biases and assumptions with other colleagues and researchers in my cohort. This independent feedback helped me to see my biases and blind spots and thereby gain greater objectivity.

Reactivity

Reactivity refers to the potential impact I may have had on a participant's behavior because of her or his awareness of being studied (Neuman, 2006). I sought to reduce this factor to allow the participants' experiences to take precedence over the researcher's experience (Maxwell, 2005). I was mindful of my role as a fellow student in the Ph.D. program, as well as the role relationships between myself and the faculty. Also, I was aware that I was the one teaching the participants about adult development, while also researching their experiences learning about it. Faculty members spoke of wanting to support my research as their reason for participating in the study, but I wanted them to clearly understand that supporting me did not require that they find value or personal or professional impact as a result of the action inquiry

process. I communicated to participants on a number of occasions that I wanted to hear the full range of their experience, and that so-called “negative” data was equally as valuable, if not more so, as “positive” reflections because of its challenging nature. During the final interviews, I asked participants to explicitly share their challenges in learning about adult development, what they were critical of, and what did not work well. I asked this question more than once if I sensed that the person was hesitant to share fully. In general, participants shared that they felt comfortable honestly expressing their experiences, did not feel as if they needed to express a particular view point, and that they appreciated my openness and encouragement in this regard.

As an educator of adults, I have considerable experience teaching and facilitating groups of students. One of the principles that guides my teaching is to be both aware of my own reactivity and teach in a way that encourages openness, honesty, and the expression of divergent perspectives. The feedback I receive from my teaching suggests I am generally able to teach in a way that supports discovery, inquiry, and growth.

I was also mindful of reactivity generated through the use of the SCTi-MAP. It is natural that an inventory assessing developmental ways of knowing (Cook-Greuter, 2006) can instigate anxiety and lead participants to feel as though there is a value judgment implicit in the test. This was something I discussed with participants in the initial workshops, occasionally in the group calls, and during the developmental coaching sessions. It was also one of the areas of reflection in the research itself. The results are discussed in finding two and four.

Descriptive Validity

Lincoln and Guba (as cited in Merriam & Assoc., 2002) suggested that instead of focusing on replicating exact findings, qualitative research is more interested in “whether the results are consistent with the data collected” (p. 27). Erickson (as cited in Merriam & Assoc.,

2002) noted that, “rather than abstract universals arrived at through statistical analysis, what we have in qualitative research are concrete universals. The general lies in the particular: what we learn in a particular situation we can transfer to similar situations subsequently encountered” (p. 28). Instead of trying to meet the quantitative standards of reliability, the most that I may be able to accomplish in my research is to maintain consistency in the data collection and accurately describe the interviews as honestly and carefully as I can. I was rigorous in my attention to the details and process of data collection. The interviews were digitally recorded and transcribed verbatim. I listened to each recording, while reading the transcription, to verify the accuracy and made minor corrections as needed.

Interpretive Validity

I needed to ensure that another researcher might make similar interpretations of the data. As Maxwell (2005) recommends, I consistently looked for ways that my interpretations and conclusions did not accurately express the data, or might be better explained from another perspective. Additionally, I strove to strengthen the interpretive integrity and validity by triangulating data from several sources including the pre and post SCTi-MAP scores, the literature review, interviews, written reflections, my notes and memos, and discussions with my committee members. I checked my interpretations with committee members and conducted member checks with all eleven participants, sharing the quotes I intended to use. I received responses from four participants and one request to edit a quote, which I did.

It was important to be mindful of the dialectical relationship between the insights, observations, reflections, and questions that I noted in my researcher’s journal, memos, and the data as I was moving through the interpretive process. It was also important to keep track of participants’ experiences and the process of including them in my interpretive process. I included

them by remaining in communication with them beyond the action inquiry process through emails, and I offered to have calls with participants after they received the results of their second developmental assessment, although only three of the participants requested to do so.

Limitations and Delimitations of the Study

This section identifies the limitations and delimitations of this research. It addresses aspects of the research design, including sample size, sampling procedure, instrumentation, and the impact of my personality and subjectivity.

Sample Size

This study was exploratory and focused on a specific context. It had a small sample size of 11 participants. This sample is not sufficient to make generalizations about the impact of introducing a developmental perspective into other academic contexts or to other faculty and students in graduate sustainability education and leadership development programs, or to make generalizations about the relationships between stages of development and perspectives and practices with regards to sustainability education, teaching, learning, and mentorship. It is sufficient, however, to gather initial data about the impact of this learning process on this particular group of faculty and students, and the relationships between stage of development and sustainability education, teaching, learning, and mentorship, as well as to point towards future research.

Sample Procedure

My sampling procedure also created limitations. Rather than have a random sample of students and faculty from Prescott College, participants were self-selecting, which suggested a potential interest in the focus of the research and the learning process.

Sample Population

I hoped to have a diversity of developmental stages represented in my study sample, as well as a roughly equal number of faculty and students and at least two participants at each stage of development. Invitations were sent to 12 faculty and staff at Prescott College and about 30 current students. Of those who responded positively, there were originally eight students and eight faculty members. One student dropped out before the study began and four faculty members dropped out mostly within two months of the beginning of the study, citing time constraints. That left me with seven students and four faculty members. Developmentally, there were two student participants initially assessed at Achiever, three students and two faculty members assessed at Individualist, two faculty members and one student assessed at Strategist, no participants assessed at Construct Aware, and one student assessed at Transpersonal.

Instrumentation

The SCTi-MAP assessment, while rigorously validated (Cook-Greuter, 1999), also presents limitations. It is one dimension of a complex human being, with a variety of factors that can contribute to how sustainability educators approach their teaching, mentoring and curriculum design. For instance, it does not indicate the degree of mental health, social adjustment, or subjective well-being of an individual (Hy & Loevinger, 1996). Other assessments such as the subject-object interview (Kegan, 1982, 1994; Lahey, et al., 1988), also strive to measure meaning-making structure. The developmental framework developed by Kegan (1982, 1994) provides an alternative perspective on the maturity of meaning making. Additionally, there are aspects of other developmental lines, psychological states, and personality typologies that contribute to developmental maturity (Wilber, 2000). Therefore, this study only offers one lens of insight into the complexity of the participants, their experiences learning about adult

development, and in Prescott College's Sustainability Education Ph.D.

The seven-month time frame between the pre and post developmental assessment is unusually short. This is a limitation of the study. In the field of constructive development theory, the general belief is that it takes at least five years to develop from one stage of development to the next, if development occurs at all. As a result, a significant developmental change would not be expected within a shorter time frame, such as less than a year. The reliability of the results may be called into question and may require a second retest after an additional six months to a year, to ensure stability. Given this, I did not expect much of a developmental change in the time frame of the study; however, I chose to do the test/retest because I wanted a baseline of data, with the possibility of extending this research over a longer time frame.

The five-year time frame for moving from one developmental stage to another has been challenged by recent research that shows that in developmentally informed programs, participants can develop between one and two stages within a one- to two-year time frame, such as Pacific Integral's Generating Transformative Change leadership development program (O'Fallon, 2010a). O'Fallon's research suggests that developmental change can occur in shorter time frames and therefore lends more reliability to these results. This would be strengthened by an additional retest a year after the last assessment.

Self

My own meaning-making structure, personality type, and experience as a student in the program that I researched all presented some possible limitations. These also served as assets. The lenses that shape my worldview clearly contributed to my data analysis and interpretations. I sought to be aware of this occurrence, particularly with regards to unconsciously projecting my

own meaning making or frame of reference onto another's experience. The interview transcriptions offered an opportunity to reflect on when and how I did this. I noticed a number of times when I responded to individuals' reflections in a way that suggested to me I had not fully listened or understood their experience. Reading the transcripts in greater depth and detail allowed me see this tendency and to be more aware of it as I went through the data analysis and interpretation phase. I also wrote a daily researcher's journal that helped me to pay attention to my moods, assumptions, and reflections on a daily basis. I also noticed how my moods affected my interpretations. I could not prevent this from happening; however, I sought to be aware of it and potentially limit its impact. I also noticed when I had an emotional reaction, positive or negative, with regards to an interview, group call, or reading a participant's reflections. I took note of these reactions, reflected on them, and attempted to remedy the attraction and/or aversion that the reaction generated. I also sought to understand the meaning beneath the reaction.

My meaning making, personality, and personal experiences also served as an asset in the research process, and I sought to make use of these insights and capacities. In addition to my rigorous data analysis, I paid attention to my intuitions. I followed my intuitive hunches and looked to see if there was support in the data. I drew on my own experience as a student in the program as I reflected on the program's transformative impact on students with different meaning-making structures.

My own stage of ego development clearly had an influence on the entire study, from the design through the analysis, and I strove to be aware of this as often as possible, for it to serve the process as it could, and to minimize the limits of it as well. In both 2011 and 2013 I was assessed at Construct Aware. In the 2013 assessment, the range of my responses was from Diplomat through Transpersonal. This means that in general I am likely to interpret participant's

experiences through a fifth person perspective lens, one that is aware of the way our perceptions and perspectives are shaped by thought processes and language itself. It also means that because I am not situated in the Transpersonal, 5.5 stage of development, it is likely that I may have missed some of the subtleties of that individual's expression and experience. However, because I am able to access that stage part of the time, it may not have been so limiting.

Summary

In this chapter I detailed the major steps and dimensions of my research methodology. A mixed-methods approach is most appropriate for this exploratory study on integrating a developmental perspective into a post-secondary program in sustainability education and leadership development. For data collection, I used a pre and post assessment of participants' meaning-making structure and pre and post semi-structured interviews, written reflections from an action inquiry process, and observation field notes. Comparative thematic analysis guided my interpretation of the data. Finally, I identified the internal integrity threats to this study, detailed my strategies to address them, and concluded with an overview of limitations.

In the next chapter I introduce the context of the study by introducing the research participants. Subsequently, Chapters 5 and 6 present the findings, interpretations, implications, and recommendations for future research.

CHAPTER 4: INTRODUCTION TO PARTICIPANTS

Introduction

The purpose of this chapter is to introduce the research participants and review the developmental action-logics. In addition to introducing the participants in greater depth, the intention for reviewing the action-logics or stages of development is to assist the reader who may not be familiar with this particular model of adult development.

Characteristics of the Study Participants

The participants in this study ($N=11$) included seven current and recently graduated students and four faculty from Prescott College's Ph.D. in Sustainability Education. Participation was a self-selection process. Research invitations were sent to all current and graduating Ph.D. students and to eight Ph.D. and four Master of Arts Program (MAP) faculty and administrators at Prescott College (See Appendix C for more information). I began the study with eight faculty and seven students. Four faculty dropped out of the study, due to cited time constraints. Only one of the faculty participants had any prior experience with adult development theory.

Prescott College's Ph.D. in Sustainability Education is a low-residency Ph.D. program and was started in 2005. Students attend from all over the U.S.A., as well as internationally. There are a total of 64 students presently in the program, and approximately 45 graduates. Of the seven students in the study, three graduated in the previous year, three were in their final year, and one was in the third year of the program. The ages ranged from early thirties through early seventies. Two of the student participants were born in countries other than the U.S.A., one lives outside the U.S.A. in a non-Western country, and for both of them English is their second language. There is also a diversity of professions from the public to the private sectors,

two are in higher education, one teaches outside of higher education, two work for government agencies, and two work in the private sector.

Of the faculty in the study, all four teach in Prescott College's Ph.D. program. There are a total of nine core faculty teaching in the Ph.D. program. Three of the four live near Prescott, Arizona. One of the four was born and grew up in a non-Western country and learned English as a second language. Three of the four have backgrounds in social sciences, and the other has a background in the natural sciences. Their ages range from mid forties to early seventies. Two of the faculty taught in the Ph.D. program for five years or more, and two for less than five years.

Of the four faculty who dropped out of the study due to time constraints, all participated in the pre-interview, all took the initial developmental assessment, three of the four received developmental coaching, and all four participated in the initial workshop that introduced adult development. Three of the four dropped out in October, three months into the seven-month research process, and the fourth dropped out close to the end of the study because of her minimal participation, again due to cited time constraints.

All participants were given pseudonyms for this study, and other details about their profession or areas of research were changed to protect their anonymity.

Developmental Action-logics and Introduction to Participants

In the following section, I use Susanne Cook-Greuter's (1999, 2002, 2003, 2004, 2006), Bill Torbert's (1991, 2003, 2004, 2010, 2013), and Terri O'Fallon's (2010b, 2013) research to describe the developmental action-logics represented by the participants in this study. I introduce the participants according to their initial developmental assessment using SCTi-MAP psychometric inventory.

It is important to remember that the stage that someone is assessed at by the instrument is

considered to be his or her “center of gravity,” or central meaning-making tendency. However, these stages can be described as more wavelike, in that humans draw from a variety of stages in any one day, moving between the stages depending on the contexts involved and one’s internal state. The assessment protocols reflect these patterns in the diversity of responses that individuals give to the sentence stems. For instance, an individual assessed at 3.5 Achiever might have responses ranging from 2.5 Diplomat to 4.0 Individualist. Additionally, each person has the stages latent within them, and can potentially access any of them at any time. Finally, someone’s stage of development is never a complete picture of a person or how they are behaving; it is simply one angle on the complexity of a human being, revealing some patterns while obscuring others.

The professional SCTi-MAP has been in development since 1983, when W.R. Torbert and S. Cook-Greuter adapted Loevinger’s instrument for professionals and explored its use with managerial populations. It uses Cook-Greuter’s (2006, 2013) theoretical distinctions throughout the scale, including the concepts of increasing levels of perspective on the self or self-awareness and her refinements of the stage sequence at the later end of development, with the late-scoring categories tested repeatedly for validity and reliability (Cook-Greuter, 2006). In addition, I use O’Fallon’s StAGES model, which builds on Cook-Greuter’s and Torbert’s research, to describe the receptive-active patterns, the person-perspective names for the stages, and the description for the Transpersonal stage, roughly equivalent to Cook-Greuter’s Ironist stage (O’Fallon, 2013).

The participants’ initial assessments ranged from the 3.5 Achiever through 5.5 Transpersonal. It should be noted that none of the participants were assessed at 5.0, Construct Aware or Alchemist (Cook-Greuter, 2006; O’Fallon, 2013). Table 9 summarizes some of the characteristics of participants and their initial developmental assessments. Figure 2 illustrates

the distribution of development stages in the study. Table 10 shows the distribution of development stages for students and faculty and for a larger sample size of 20, including data from a pilot study (also self selected from within Cohort 6), and the four faculty and staff who ultimately dropped out of the study.

Table 9

Participant's Age Group, Initial Developmental Assessment and Role at Prescott College

Participants	Age Group	Initial Developmental Assessment	Student or Faculty
Jeff	50-59	4.5 Strategist	Faculty
Karl	70-79	4.5 Strategist	Faculty
Samantha	60-69	4.0 Individualist	Faculty
Stuart	40-49	4.0 Late Individualist	Faculty
Allison	50-59	4.5 Early Strategist	Student
Barney	60-69	3.5 Achiever	Student
Francesca	30-39	4.0 Individualist	Student
Helen	40-49	4.0 Late Individualist	Student
Luisa	40-49	3.5 Achiever	Student
Michele	40-49	5.5 Transpersonal	Student
Vanessa	30-39	4.0 Individualist	Student

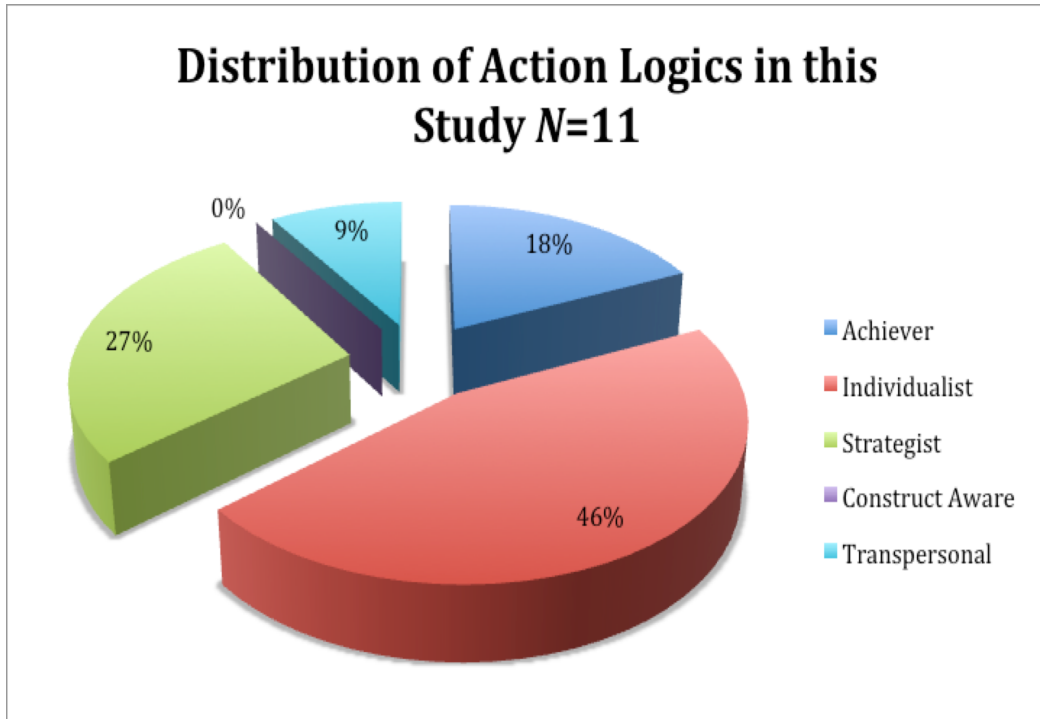


Figure 3. The Distribution of Initial Development Stages in the Study (N=11).

Table 10

Initial Developmental Assessments of Students and Faculty (N=20)

Developmental Stage	Students	% of Students (N=12)	Faculty	% of Faculty (N=8)	Total #	Total %
3.5 Achiever	3	25%	2	25%	5	25%
4.0 Individualist	3	25%	4	50%	7	35%
4.5 Strategist	3	25%	2	25%	5	25%
5.0 Construct Aware	2	16.7%	-	-	2	10%
5.5 Transpersonal	1	8%	-	-	1	5%
Total #	12		8		20	

Note: The table includes five additional individuals from the pilot study data, and the four faculty who dropped out of the study.

3.5 Stage of Development (Achiever or Conscientious)

This stage is the maturing of the third person perspective and is a forward leaning, action-oriented stage. At this stage the subtle identity (ideas, thoughts, emotions) is well established,

and individuals can actively make choices and prioritize among their ideas. They may want to pursue their goals and visions independently or with others. This action-logic is a “target stage” for Western culture due to the competencies that it entails (Cook-Greuter, 2002, p. 16).

Achievers tend to pursue results and effectiveness rather than merely efficiency (80/20 rule); have longer-term goals; are future-oriented; are in charge of self as agent; and tend to see themselves as initiators rather than pawns of a system. Achievers also highly value systematic (scientific) knowledge, and formal operations and abstract rationality are at their peak in this stage. Rather than one reason or cause, they often look for multiple reasons or root causes in a chain of events. They explore what makes themselves and others tick through feedback and introspection, learning to understand themselves backward and forward in time. They are interested in working towards the betterment of the world according to what they deem as good for all. At this stage, the 3.5 individual may seek proactive ways around problems; begin to appreciate complexity and multiple views, but keep them separate; may be blind to the subjectivity behind objectivity; seek consensus: so-called “agree to disagree”; value mutuality and equality in relationships; feel guilt when not meeting own standards or goals; and tend to be self-critical. While 3.0 Experts have a vague sense of all people being family, 3.5 Achievers can carry this forward into world-centric action. Human rights are increasingly important, and delivering results and taking responsibility are their hallmarks. Achievers can be relentless in the ways they pursue their goals, sometimes to the neglect of family, personal life, and even health. However, they often work well with teams, delegating and collaborating for the purpose of efficiency in pursuit of their aims (Cook-Greuter, 2006; O’Fallon, 2010b, 2013).

Two student participants in the study were initially assessed at Achiever. There were originally two faculty/staff also assessed at Achiever; however, both dropped out of the study.

Their expressed reason for dropping out was time constraints. Given that about 30% of adults in the U.S. were assessed at this stage of development between 1980 and 1995 (Cook-Greuter, 1999) (it is likely a higher percentage now), it is expected that there would more Achiever students and faculty in the Prescott College Ph.D. program. And with a larger random sample, I expect the percentage of Achievers would be higher. Table 11 includes the participants who were assessed at the Achiever stage of development in the initial assessment.

Table 11

Participants Initially Assessed at the 3.5 Achiever Stage of Development

Name	Gender/Age range	Role at Prescott College	Initial Developmental Assessment
Barney	Male/60-69	Student	3.5 Achiever
Luisa	Female/40-49	Student	3.5 Achiever

4.0 Stage of Development (Individualist or Pluralist)

Individuals at this stage are able to take a fourth person perspective, which generally comes about from many trials and errors with goal setting. They can stand back from the third person perspective that makes factual observations and judgments, and see contexts – how the third person perspective arises out of a context (for instance, gender, class, race) that shapes or influences the factual judgment. With this new perspective Individualist's can become very introspective, searching for their own and others' subjective assumptions. They begin to recognize different voices for different interior contexts, such as a parent voice, child voice, friend voice, etc. This initiates a search for an authentic self. They are self-motivated towards unique personal accomplishments independent of socially approved roles. Individualist's are less interested in goals, and they are more interested in process and how it unfolds in the

moment. Once focused on the analytical mind, they are now interested in feelings and connection between the mind and body, and they develop empathy for the well being of a wholeness larger than their own. Individualist's can struggle to prioritize or categorize the voices in the interior or contexts on the exterior, and therefore everything becomes equally valid and relative. They begin to question their own assumptions and those of others, realize the subjectivity of beliefs, and talk of interpretations and beliefs rather than truth. They may seek changes in their lives and work situations, as they seek their own identity and authenticity. Individualist's begin to adapt their behavior to different contexts, can engage in systematic problem solving, and begin to seek out and value feedback. Their time awareness is approximately ten years, and their scope of concern includes all of sentient life and can extend to the planet as a whole (Cook-Greuter, 2005; O'Fallon, 2010b, 2013).

People experiencing this stage:

- Are able to think in both/and ways and see both sides of an argument or polar pair. They are deepening their interior and exterior focus and begin to hold both together.
- Might prefer to spend hours in dialogue and value hearing from everybody.
- Can be wary of objective thinking and prefer subjective feeling and thinking. This can lead them to reject more rational ideas and scientific understandings.
- Are interested in other ways of knowing, dreams, somatic elements, embodiment, and intuition. All ways can seem equally valid. They can get attached to their non-rational sources of knowledge.
- Want everyone to be free of judgments, dogma, etc., but tend to not see their own dogmatic judgments of those who do not believe what they do.
- See how self and others are socially constructed by their contexts, and thus all ideas and

knowledge are relative.

- Can be wary and possibly dismissive of business and economic approaches to sustainability and more conservative religious worldviews.
- Are aware of complex adaptive horizontal systems, but may regard all hierarchy with suspicion, including nested or functional hierarchies, which can be essential when making leadership or moral decisions.
- Value transformative learning experiences and may struggle with what they perceive as more traditional, academically rigorous assignments. May be more interested in qualitative research methods and not as interested in quantitative methods (O'Fallon, 2010b, 2013).

Two faculty and three students were assessed initially at the 4.0 Individualist or Pluralist stage. This is the largest percentage of action-logics in the study sample, as well as in the larger sample including data from the pilot study. I expected a higher percentage of 4.0 Individualists or Pluralists than is found in the general population. The two reasons for this prediction were that Prescott College, as a Liberal Arts school, has values and beliefs closely aligned with the Individualist action-logic. Secondly, although an interest and commitment to sustainability work can be present in any of the action-logics, it more naturally emerges at Individualist, where there is a widening scope of care to include all of sentient life and the planet itself. There is also an emerging understanding of complex adaptive systems, including the connections among social, ecological, and economic systems, the foundation of the sustainability field. Table 12 shows the participants who were assessed at the Individualist stage of development in the initial assessment.

Table 12

Participants Initially Assessed at 4.0 Individualist or Pluralist Stage of Development

Name	Gender/Age range	Role at Prescott College	Initial Developmental Assessment
Samantha	Female/60-69	Faculty	4.0 Individualist
Stuart	Male/40-49	Faculty	4.0 Late Individualist
Vanessa	Female/30-39	Student	4.0 Individualist
Francesca	Female/30-39	Student	4.0 Individualist
Helen	Helen/40-49	Student	4.0 Late Individualist

4.5 Stage of Development (Strategist)

The Strategist is maturing and integrating the fourth person perspective. Like the Achiever, this is a forward leaning, action-oriented phase. The search for the authentic self may have progressed to a point where these individuals have settled on an image that can be accepted. A new sense of confidence emerges. Strategists often see the limits of much processing, begin to prioritize exterior and interior contexts, and want to move forward towards solutions. This is the first stage in which individuals can see their own transformations through time, and will naturally understand this change without any understanding of developmental theory. Seeing that development occur, they may become quite zealous about their own and others' development, and want to take on any and all practices that might support it. They now embrace both process and a future-oriented focus by working with principles rather than goals. Their time horizon is multigenerational, and they can see multigenerational patterns. They begin to recognize their own projections, seeing that those things on which they judge others (positive and negative) are qualities in their own being. This is seen after the fact through reflection, and supports their embrace of paradox. Feedback is very important, and they are discerning about what is useful and what is not. They bring together interior/exterior into mind/body integration.

Strategists are better able to tolerate the negative traits in others and differences in opinions and values. At this stage of development there is a greater valuing of all of the previous stages of development as necessary for healthy human development. (Cook-Greuter, 2005; O'Fallon, 2010b, 2013).

People experiencing this stage:

- Tend to be committed to transdisciplinarity and to organizing and engaging multiple perspectives to propose solutions for complex problems.
- Understand, appreciate, and consider how things appear from several different and even conflicting perspectives.
- Interested in creating developmental and transformative containers for others.
- Focus on self-development in order to increase their capacity to work with complex systems and serve their purpose.
- Embrace paradox and projections as inevitable and look for guiding principles and values by which to discern.
- Egalitarianism is complemented with natural degrees of ranking, excellence, and overlapping dynamic systems. Natural hierarchies are recognized.
- Adept at creating shared visions that encourage personal and collective transformations across developmental diversity.

One student and two faculty were assessed at 4.5 Strategist stage of development in the initial assessment. After the second assessment, all four faculty and two students were assessed at this stage. This is a high number given that the later stages are increasingly rare, and Strategists made up only 4.9% of a study of the general population in the U.S. between 1980 and 1995 (Cook-Greuter, 1999). With a larger random sample from within the Ph.D. program, the

overall percentage of Strategists may be lower than this self-selected population. Table 13 includes the participants who were assessed at the Strategist stage of development in the initial assessment.

Table 13

Participants Initially Assessed at 4.5 Strategist Stage of Development

Name	Gender/Age range	Role at Prescott College	Initial Developmental Assessment
Jeff	Male/50-59	Faculty	4.5 Strategist
Karl	Male/70-79	Faculty	4.5 Strategist
Allison	Female/40-49	Student	4.5 Early Strategist

5.0 Stage of Development (Construct Aware, Alchemist or Magician)

This is the beginning of the fifth person perspective, which includes an awareness of the constructs that shape human understanding and experience of the world. Because this represents a newly emerging perspective, individuals in this stage can be overwhelmed by the awareness of so many perspectives and struggle to sort out and prioritize different constructs. The central goal for Construct Aware is to be aware. These individuals can perceive the structure of their own thinking processes. As Cook-Greuter (2005) notes:

This is the first time in development that the ego becomes transparent to itself. Final knowledge about the self or anything else is seen as illusive and unattainable through effort and reason because all conscious thought, all cognition is recognized as constructed and, therefore, split off from the underlying, cohesive, non-dual truth. They realize that the pursuit of objective self-identification and rational, objective explanations of the universe are futile—artifacts of our need to make permanent and substantive that which is in flux and immaterial. (p. 28-29)

There is an appreciation of ambiguity and polarities – experiencing one within the other, as well as exploring influences and effects from multiple scales (individuals, organizations,

history, and culture) of existence. The Construct Aware are also more able than any other action-logic to deeply access their own past ways of meaning making. This enables them to tailor their communications and actions to others' meaning-making systems (O'Fallon, 2010b). There are so few people at this stage that there may not be others with whom to reflect, and to help them make sense of their experience. These individuals may appear to be less active as this is a more receptive stage. Construct Aware individuals may deemphasize development, comparisons, or anything that has a trajectory or prioritization, as they foreground the apprehension of their new identity, watching awareness in the moment in ordinary, every day existence (O'Fallon, 2010b, 2013).

None of the participants in the study was assessed at Construct Aware; however, one of the student participants in the pilot study was assessed at 5.0, and another student, assessed at late Strategist, appeared to be in the process of moving into Construct Aware. I mention this because students assessing at later developmental stages than their faculty may be increasingly common, given that younger generations appear to be developing more quickly. It is an interesting and perhaps disorienting phenomenon for educators to consider how to mentor students who are developmentally later than they are.

5.5 Stage of Development (Transpersonal)

According to O'Fallon (2013) the mature fifth perspective is an active stage. These individuals are aware of constructs and begin to prioritize, create, morph, and change them to serve evolutionary unfolding. This can manifest in building their own complex creations, combining ideas and constructs into new forms in a particular area of interest. They are likely to see connections and consciously constructed meta-perspectives where others do not, and they have greater flexibility and reflexiveness. Additionally, individuals operating from this stage can

begin to experience a peaceful letting go into a Transpersonal self. They have a high tolerance for things as they are, and their experience of emptiness can bring profound acceptance, feelings of oneness, and sacredness. Their compassion for others can be wide and deep. They have significant capacities to redefine, reframe, construct, and reconstruct, and to see unusual connections between what others might see as disparate fields or endeavors.

One of the student participants was assessed as Transpersonal, as is shown in Table 14.

Table 14

Participants Initially Assessed in the 5.5 Transpersonal Stage of Development

Name	Gender/Age range	Role at Prescott College	Initial Developmental Assessment
Michele	Female/40-49	Student	5.5 Transpersonal

Summary

The site of the study was Prescott College's Ph.D. Program. There were seven students and four faculty in the research sample. Of these eleven participants, two initially assessed at Achiever 3.5 stage of development, five initially assessed at Individualist 4.0 stage of development, three initially assessed at Strategist 4.5 stage of development, and one initially assessed at Transpersonal 5.5 stage of development. The four findings that emerged from the study and the supporting data are presented in Chapter 5.

CHAPTER 5: FINDINGS

Introduction

The objectives of this study were to examine the personal and professional impact of introducing constructive development theory in a post-secondary program in sustainability education and to look at how development shapes teaching, mentorship, and sustainability education. The research questions that guided the study were:

1. What are the personal and professional impacts of introducing a constructive developmental perspective (including knowledge, awareness of adult development, and experience of a developmental assessment) to faculty and students in a post-secondary program in sustainability education and leadership development?
 - a) How does awareness of and knowledge about development influence the practices and perspectives of sustainability educators?
 - b) What are the personal and professional influences on students and faculty?
 - c) What is the developmental impact of learning about adult development on the research participants?

2. How do students' or faculty members' developmental stages influence the following:
 - a) Their perspectives and practices with regards to sustainability education?
 - b) Their experience learning about and perspectives on adult development?
 - c) Their experience as students in Prescott College's sustainability education Ph.D. program and/or their perspectives and practices with regards to teaching and mentorship?

In this chapter, I introduce the core findings as they emerged from my analysis and interpretation of the participants' descriptions of their practices and perspectives with regards to sustainability education, teaching, and mentorship, and their experience learning about adult development through the five months of action inquiry. For each finding presented in this chapter, I describe the finding, include quotes from the participants' interviews and written reflections, and provide an initial analysis and interpretation.

Summary of Findings

Finding One

Sustainability definitions and practices are significantly different for individuals assessed at different developmental stages. Recognizing this is important for effective and transformative sustainability education and leadership development. Each stage of development or action-logic has unique and valuable contributions to make to sustainability education, and each action-logic has limits or blind spots. Learning to recognize these differences and work skillfully across and with the strengths and limitations can guide teaching, mentoring, curriculum development, and sustainability initiative design.

Finding Two

Learning about adult development can be transformative developmentally, personally, and professionally. There are four dimensions to finding number two. These are: 1) developmental change; 2) personal and professional impact; 3) developmental differences in how participants describe the impact and their experience of learning about development; and 4) the differences between students and faculty in terms of how they engaged with the research and action inquiry process and differences in the personal and professional impacts.

Finding Three

A developmental perspective may deepen the transformative impact of Prescott College's Ph.D. program. There are four dimensions to finding number three. The first is that of the original eight faculty, four were assessed at Individualist. It follows that although the vision for the program includes some Strategist capacities, the design, culture, and facilitation of the program is largely Individualist. The second is that seven of the eight faculty, originally in the research sample, lack an awareness and understanding of constructive development theory; therefore, it follows that the program is not designed or informed by a developmental perspective. The third is that there are developmental differences in how students experience learning and transformation in the program. According to the participants in this study, the program is more transformative for Achievers and Individualists and less so for Strategists and Construct Aware. Later stages (Construct Aware and Transpersonal) have a greater capacity to guide their own transformative experience, but may be less influenced by the program and/or faculty. The fourth is that a faculty's developmental stage affects how she or he teaches, mentors, orients to sustainability, and designs learning experiences. Faculty assessed at Achiever and Individualist are more likely to project their own worldviews onto their students and less likely to effectively meet their students' developmental needs. Faculty assessed at Strategist are more likely recognize their students' differing developmental capacities and learning needs, and adjust their mentoring and teaching accordingly.

Finding Four

The language and metaphors used to convey adult development may contribute to some of the challenges people have in learning about the perspective, and teaching about adult development is likely to be more effective when it is done in a way that is developmentally

responsive. All of the participants in the study were challenged by or critical of constructive development theory in some consistent ways, although to different degrees. There were also developmental differences in the challenges or critiques participants had of learning about adult development. Some of the challenges the participants named included use of language, choice of metaphors (i.e. stages), the hierarchical dimensions of the models, categorization, cultural bias, and the influence of business and leadership-oriented language from the research and application in those fields.

Finding One

Sustainability definitions and practices are significantly different for individuals assessed at different developmental stages. Recognizing this is important for effective and transformative sustainability education and leadership development. Each stage of development or action-logic has unique and valuable contributions to make to sustainability education, and each action-logic has limits or blind spots. Learning to recognize these differences and work skillfully across and with the strengths and limitations can guide teaching, mentoring, curriculum development, and sustainability initiative design.

3.5 Achiever

The student participant Luisa, who was assessed at Achiever in both the pre and post developmental assessments, had no prior experience with sustainability before she enrolled in the Ph.D. program. When asked about this and why she chose a Ph.D. program in sustainability education, she spoke of her environmental interest and her connection to the outdoors:

Besides being a moderately outdoorsy person or somebody who at least cares about the environment, and the environment for future generations. I mean that was already part of me. I'm not like...the dominion people, "We hold dominion over everything. We should just use it up." You know what I mean. I'm the opposite of that. And so from that perspective I didn't not fit into the program. I'm not maybe as hardcore as some people. Which is also fine. Everybody is different, but like [another student] says it's in moderation. Everything in moderation. (July, 2013)

This suggests that Luisa may have originally considered sustainability to essentially be about the environment. This is a common assumption, and it is also reflective of Achievers' likelihood to focus on one aspect or a single system of a phenomenon that other stages view as more complex. For instance, focusing on the environmental dimensions of a sustainability challenge that other may view as also including social and economic dimensions. Luisa's research interests at the time of applying to the program also suggested an environment-oriented

definition:

When I first came to the program I had something completely different in mind. I had this big digital system that was going to support sustainability educators and at that point I was thinking it was going to be a big online system with materials for environmental science kinds of things and lesson plans...that would allow you to use these resources. (July, 2013)

Her research interests developed as Luisa progressed through the program, and she ultimately chose to focus on student success and lifelong learning, which she later defined as information literacy skills:

I think for me the most fundamental part of my interest in sustainability education is lifelong learning. In any area, but that's what I think of as education for sustainability or sustainability education – this idea that people can be lifelong learners and what are the ways that we can support people doing that? And that's what carries us through whatever opportunities or crises that come up for individuals or the entire world. (July, 2013)

She described her interest in student success in the following:

The idea is what sustains the students through the program. So, it's not quite the same as sustainability education for the environment or from that perspective, but it is from that idea that without some kind of way for people to sustain themselves on an educational journey. Not that I've ever articulated it quite like that before...so what is sustaining us through this program? (March, 2014)

This focus on student success is action-oriented and also suggests the single system focus mentioned previously. Achievers are generally aware of greater degrees of complexity but are more likely to choose one dimension of the complexity to address. Luisa also spoke of the difficulty of sustaining some of the complexity of her learning from the Ph.D. program:

I will admit that I still – it's almost like I'm aware of it [sustainability] now, but decreasingly so the more I move out from those fundamental courses and the further I move out from talking to other people at Prescott. (July, 2013)

Luisa's orientation towards sustainability work reveals a number of patterns reflective of the Achiever phase of development. Achievers are often interested in working towards the betterment of the world according to what they deem as good for all. This move towards world-

centric action is a significant expansion of the scope of care from one's community or social circle (2.5, Diplomat) to a care for the rights of humanity as a whole. And in contrast to the previous stage's (3.0, Expert) emphasis on solutions to technical sustainability challenges, Achievers are interested in overall results and effectiveness, rather than efficiency alone. They seek proactive ways to solve problems, and they increasingly recognize complexity and multiple perspectives; however, they are likely to keep the multiple perspectives separate. These patterns are reflected in Luisa's concern for the environment, information literacy, and student success. Sustainability at the 4.0 or Individualist stage is often defined through a systems lens, including issues and concerns at the level of ecological, economic, and cultural systems as it is presented in Prescott's Ph.D. program. At the Achiever stage, this level of system complexity is recognized, but it can be more challenging to hold the different dimensions together. Luisa's definition of sustainability was oriented more towards environmental concern. After choosing to focus her research on student success, she spoke of struggling to reintegrate concepts of sustainability into her dissertation, beyond exploring how to sustain a student's success. She also spoke of the challenges of maintaining her understanding about sustainability, as she had less contact with the program. Additionally, Achievers have the capacity to make either/or choices, unlike the Expert stage whose thinking tends to be more black and white. Achievers see their options in a decision and make a choice from among them. This is reflected in Luisa's articulation of her environmental concerns. She distinguished her environmental concerns from others in her state, whom she perceived as seeing themselves having "dominion over nature" and the "right to use it up," as well as distinguishing herself from more so-called hardcore participants in the program, referring to her own approach as more moderate.

An additional student participant, Helen, who had recently graduated after five years in

the program, was assessed at the Individualist or 4.0 developmental stage. However, her ideas around sustainability prior to starting the program reflected some Achiever meaning-making patterns. English is Helen's second language:

So the way I learned about the term sustainability was in the international development field and this was basically about continuation [of a development project]... When we pull out as an international organization or a donor agency, we expect the village to sustain what we've done. Sustainability before I came to Prescott was how can these people continue to do what we've taught them to do - how can we make change stick, how can we make people continue to do what we want to them to do? (July, 2013)

There are some similarities to Helen and Lusía's initial approaches to sustainability. For both, their approaches were not about the integration and balance among ecological, cultural and economic systems, as is more likely to be the focus at Individualist. Their focus was more about the success of a project or endeavor such as lifelong learning or a community development project. Some of the common factors here that connect with the patterns of the mature third person perspective, the Achiever stage of development, include an emphasis on achieving or successfully reaching a goal, an action orientation, world-centric values, and a beginning awareness of systems and complexity, with a more pointed focus on success or effectiveness (Cook-Greuter, 2005; O'Fallon, 2010b, 2013).

4.0 Individualist or Pluralist

Francesca, assessed at Individualist in the first assessment and Late Individualist in the second assessment, spoke of her approach to sustainability that focused on personal sustainability. Early in the Ph.D. program she recognized how unsustainable her personal and professional life were and made significant changes in all aspects of her life (home, work, and relationship). The research method through which she chose to explore self-sustainability was autoethnography:

Something that daunted me for four years was figuring out how do I affect change in a subject that is so broad and hard to define and that means a lot of different things to a lot of different people... To define sustainability in brief, the idea that a system can rebound from adversity and can carry on in a way that is balanced and learn how to return to that balance or equilibrium when the system's threatened... I started to try to find a way to have a more sustainable professional life and from there it extended in my personal life and what I realized at the end was that sustainability is not necessarily equal to perpetual bliss or happiness. It's more that idea of balance... And for me it was feeling valued, being able to express my own ideas and advocate for myself. (July, 2013)

Francesca also spoke of the way that her sustainability definition changed from originally focusing on the sustainability of human and planetary systems to including the sustainability of the individual, including her own identity development separate from cultural and family expectations:

...I just started thinking about sustainability in a kind of wildly different way than I had originally. For me a fundamental need was sort of figuring out my own identity... what I wanted in my life and what I wanted the purpose of my work and self-expression to be - independent of what other people wanted for me including my husband at the time that I started this program. So really looking within myself and trying to get beyond the level of cultural expectation or family expectation or spousal expectation. (July, 2013)

Some of the Individualist patterns reflected in Francesca's sustainability orientation include an understanding of the multiple and overlapping systems that can contribute to sustainability work, an interest in her own identity development (discovering her authentic self) separate from cultural and family expectations, a focus on her own subtle interior (values, beliefs, and identity) as a pathway to personal sustainability, while recognizing the connection between self and larger systems sustainability. She recognized the pluralism of approaches to sustainability, felt challenged to choose and prioritize among the diversity of approaches, and focused on seeking her own unique contribution to the field. The Individualist is a receptive stage, with a greater focus on the present moment and the many internal voices that make up the self. Individualists value knowing themselves and others through story sharing and dialogue. This is reflected in Francesca's research method titled "Story to Song," which she felt was

transformative largely because participants experience that “their story is valuable and therefore that they are valuable” (Francesca, July, 2013).

Another student participant, Vanessa, assessed at Individualist in the initial assessment, also significantly changed her approach to sustainability in the course of the program. Vanessa, like Luisa, had minimal prior experience with sustainability. Vanessa grew up in a small village in Africa, came to the U.S. on a scholarship for college, earned a degree in Engineering, and works as a medical software engineer. She came to Prescott College to pursue her dream of alleviating poverty in her home village. English is a second language for Vanessa. She spoke of her journey in the Ph.D. program as one of building confidence and shifting from a focus on poverty alleviation to supporting abundance, “feeling enough,” and resilience in her own life and her village:

I started off with using resources in such a way that you can leave others that are coming in the future to have enough to eat, but I begin to really question this concept of scarcity because my research is based on poverty. It really just spoke to me that the way that I’m viewing sustainability is about being enough...If you are someone who feels secure enough in your being and in your spirit of course you do have the right to be on the planet and to partake in these resources that we have to share, but also you are enough or you have enough to be able to sustain that inner joy or that inner spirit,...then you are sustaining....It makes perfect sense to me that we should strive for sustainability at the very minimum because the resilience of the community of life and the well-being of humanity depend upon preserving a healthy biosphere with all its ecological systems...As my ancestors fought for my freedom, nature has its own intrinsic rights to exist, flourish, and grow. (July, 2013)

Vanessa also spoke of the way her approaches to sustainability changed:

The definition that you have in your document where you say ‘sustainability is as much about the mind set or world view through which the world is seen, as it is about the activities taken in support of it’, I think it’s the direction in which I am moving because I just get the sense that maybe thinking more about the environment as one of the three legs of sustainability can be more like a tool that will help us to say, now we have this thing, we need to protect it and provide for it, but it’s a lot to do about the way that we view the world as it is. And how we are seeing it....And this is where that spirituality aspect comes in because it is how I’m viewing this world in which I’ve inherited and which I know for sure I’m going to be leaving behind. But, somehow I’m always a part

of it. (July, 2013)

Similar to Francesca, Vanessa recognized the complexity of overlapping systems that contribute towards creating sustainability. Within the larger scope of her work, she sought a new way to approach poverty alleviation and her own lack of confidence by developing a vision for abundance, resilience, and what she called “feeling enough,” both for herself and her work in Africa. There is an emphasis on identity development or discovering her authentic self, common of the receptive, in the moment orientation of the Individualist, as well as a recognition of the pluralism of perspectives contributing to sustainability work. She also spoke of the rights of nature, a concern for Individualists, whose space frame is sentient-centric and planet-centric.

Helen, another student participant, was also assessed at Individualist. Helen came to Prescott College from Egypt and her work in international development. In the previous section on the Achiever developmental stage, I noted that Helen’s original sustainability definition focused on the success of a community development project or goal. She spoke of how this changed after enrolling in the Ph.D. program:

And after I started working on my program of research, I realized that there are so many different definitions of sustainability - the thing about the environment and sustaining our life on earth and sustaining earth and sustaining other than human creatures, all of this was not found in my initial definition... so that was a really steep learning curve for me. I shifted my question completely from the initial question, to what does sustainability mean in terms of diversity, differences, accepting differences, realizing diversity even? (July, 2013)

Helen’s inquiry into sustainability shifted from a focus on project success to honoring and supporting the diversity and diverse needs of the communities with whom she works. This is more reflective of an Individualist’s recognition of and concern for pluralism. She said more about what sustainability means to her now in the context of international development work:

Just by going to villages and making them really like or want what we want them to do

cannot be sustainable because it doesn't come naturally to them and they don't see the immediate relationship between what we want them to do and their lives. That made the big twist in my definition of sustainability.... The definition of sustainability I thought is the sum of differences and the mutuality between those differences. The sum of differences of opinion, of people, of lifestyles, of knowledge systems, of identities, all these different things in life. The different views of life. How can they all interact together in a mutual relationship - that is sustainability for me. (July, 2013)

Her definitions and descriptions reflected the context-aware capacities of the 4.0 stage of development; the recognition that there is a diversity of perspectives and needs in the world, informed by different social and ecological contexts; and that imposing a development goal on a community is not just or sustainable. She also spoke of the importance of mutuality or reciprocity among all these different voices and perspectives.

Samantha, one of the four faculty participants, also assessed at Individualist in her initial assessment. She spoke of her orientation to sustainability education:

...from a rather shallow, but from a human species only standpoint, I think traditionally and also currently, it probably still means...that it's our capacity to maintain and continue to enhance systems that nourish us. And I think that that's the anthropocentric human - so that's the kind of deep as a dishpan level and I think that's the way it's looked at in most cases. And Lord knows sustainability has been defined hundreds and hundreds of times, but I think that from a larger perspective that the human and ecosystem well being are absolutely, inexorably interdependent...by separating them of course that's falling into the Cartesian model of, yeah you can divide them in smaller and smaller bit until then you can see those, but because they are organic I don't think you can really do that in terms of sustainability. So the human and the ecosystem wellbeing...are something that needs to be maintained without compromising the ecosystem or future generations of humans. (August, 2013)

Samantha's thoughts about sustainability education were reflective of the Individualist awareness of overlapping systems and the interconnections between humans and nature. She also spoke of the hundreds of ways of defining sustainability that suggest a recognition of the diversity of contexts and a valuing of pluralism. She critiqued dividing things into smaller and smaller units, as might be more likely in the objective rational analysis of Achiever individuals, and favored a greater wholeness and awareness of subjectivity – again Individualist tendencies

and capacities. Her concern for and valuing of the rights of all sentient life, alongside her critique of anthropocentrism, reflect the Individualist's planet-centric scope of care and the tendency towards social deconstruction or critique. Some similar patterns were evident in her reflection on education:

The survival of the environment means that there are social parts to it and political parts and economic parts and cultural parts and spiritual parts, but in the field of education - and I use education in a very large sense... it's certainly holistic, it's probably eco-judicial if you will and it's culturally relevant, it's intergenerational, it's self renewing. And it's built on a symbiotic healthy inner relationships among the community of all beings... So whether in sustainability education it's trying to remind ourselves that that is what it's all about and so no matter what we do within the field of sustainability that we keep coming back - keep going back to the well if you will... I can't do it on a cosmological basis because I just don't have that much knowledge, but I suspect that it's similar. So it's all based on complexity and sort of the eco-fractals, things that are moving and shifting and in constant relationship. (August, 2013)

When asked about how her approach to sustainability education has changed, Samantha spoke of a time when she "privileged humans" and did not consider the interconnectedness of humans and ecosystems:

Like most people I think have gone through different stages. Most of us have come out of a traditional educational system... built on that Descartian model that assumes that there is a truth and at the best we are scaffolding around that truth... I come out of that tradition like I say like most people do in North America. And because of that I did separate humans from the environment and I saw them as - and I probably privileged the role of humans because I hadn't thought about perspectives and how there are many, many different perspectives and that the human perspective is just one. (August, 2013)

Included in her reflections are the Individualist or Pluralist orientation towards multiple overlapping systems, to pluralism, and to critiquing anthropocentrism, or avoiding limiting one's perspective to only that of humans. This illustrated her awareness, valuing, and inclusion of other species and other perspectives of a deeper and wider pluralism. As a land-based person, Samantha frequently spoke of ecological systems and used ecological metaphors in her descriptions, also common for Individualists. She also critiqued what she called the "Cartesian

approach of dividing things into smaller and smaller bits,” reflective of value on wholeness and inclusion over categorizing and analysis that is common for Individualist’s focus on the present moment. She also expressed an interest in social deconstruction and critique arising from the awareness of the social construction of perspectives and beliefs. In addition, Individualists are likely to talk about what they value by critiquing what they do not or did not value, such as Samantha reflecting on a time when she saw herself and humans as separate from the environment, critiquing what she calls the “Descartian model of traditional education.”

Another faculty participant, Stuart, initially assessed at Late Individualist. Stuart was relatively new to Prescott College and had just begun advising students in the Ph.D. program.

My background is in rain forest ecology with an emphasis on the systems and ecosystem ecology and so without really thinking about it was moving very much in a direction towards sustainability and therefore education about sustainability, because as I like to say, the system that I studied is one of the most complex and sustainably functioning systems available on the planet...And then with this developing awareness in mind, I had also a personal historical quirk in the sense that I was raised by Holocaust survivors and so there was this notion that frugality was a very important element of life and so there I was with this knowledge about sustainability - sustainably functioning systems without even necessarily calling it that and also this profound notion of frugality and simplicity to a degree and those combined in me to find this field interesting. (July, 2013)

Stuart, similar to the other Individualists, spoke of a systems view of sustainability that integrated and included cultural, ecological, and human systems. He also spoke of the context in which he grew up, raised by a Holocaust survivor, and the influence this had on his approach to sustainability. In the following he shared more about his approach to sustainability:

My definition of sustainability is very matter of fact...sustainability is just our capacity to maintain the status quo over time and if that’s a good status quo then good for us and if it’s not a good status quo, then not good for us. Are there approaches that are new that I’m starting to integrate? It’s definitely the notion of regenerative design as opposed to simply sustainability... the notion that we could make it better. That we can restore things although that brings up a lot of questions or we could be generative... However, with sustainability... I am far more likely to think those who don’t get it are apathetic, uncaring or just plain complacent due to their privilege (capacity to waste without care). Anyway I cut it, if people waste, they are doing more harm than good... and the planet

would likely be better off without them. I have that self-righteous notion in my head... I am more crisis minded... more triage minded. I seem to be willing to allow some to fail in order to get the good ones mobilized... meaning I teach to the top of the class (i.e., those most ready to move forwards)... even to the expense of the others. Not sure that's a good idea... I'm experiencing some angst about this. (July, 2013)

In Stuart's articulation of his approach to sustainability, there were aspects of the Individualist action-logic, as well as aspects of a Strategist orientation and awareness. He had a systems focus, planetary awareness, an orientation towards problem solving, crisis, and social critique, all of which are common for Individualists. In addition, he oriented his classes towards regenerative design, which he defined as going beyond sustainability, and he questioned his own belief systems relative to his self-described self-righteousness and his approach to teaching, all of which suggest 4.5 or Strategist perspective taking capacities.

To summarize, some of the patterns around Individualist approaches to sustainability include a focus on multiple overlapping systems, an awareness of the social construction of reality, and a corresponding tendency towards social deconstruction or critiques, a both/and approach to integrating interiors (values, beliefs, diverse perspectives) and exteriors (systems change), and pluralism and relativity of ideas, beliefs and knowledge. Individualists can struggle to prioritize perspectives, can be critical and dismissive of more technical, so-called "shallow" and/or more business-oriented approaches to sustainability, and are interested in identity development and an authentic self, separate from cultural expectations. They value the intrinsic rights of all of life, including the planet as a whole. They also tend to be interested in more qualitative and participatory research methods (Cook-Greuter, 2005; O'Fallon, 2010b, 2013).

4.5 Strategist

Jeff, also faculty in the Ph.D. program, assessed at the Strategist, 4.5 stage of development. He was born and grew up outside of the US and learned English as a second

language. His background is in anthropology and international development education. Jeff offered the following definition for sustainability education. “Learning sustainability is to reorient human species to become beneficial members of an abundant biosphere.” He elaborated on this definition in an essay he wrote about his vision for sustainability education and Prescott College’s Ph.D. program:

Most uniquely, the program focuses on not only on economic and ecological sustainability but also on social equity as well as bio-cultural and linguistic diversities. First, I am convinced that we have to shift from educating “about” and “for” sustainability to education “as” sustainability. While education “about” and “for” sustainability end up cautioning and teaching students: “why and how to do no harm or do less harm;” we take significant steps deeper. We teach: “why and how to do good and be beneficial.” Second, in order to enable them to imagine, design and create a resilient and an abundant world, I tend to push students away from “ideologies that blind” to “seeking ideas that work.” Third, I have also come to conclude that it helps to move away from discursive analysis of “systems of problems” (often leading to paralysis) to find designs that seek “systems of solutions.” Fourth, it is equally important to move away from banking on unitary and universal knowledge to seeking and celebrating pluriversity of traditions of knowledge. I cover these under the banner of bio-cultural as well as linguistic diversities. (April, 2014)

In these quotes, his vision for sustainability reflected a number of tendencies and capacities of the mature fourth person, action-oriented, Strategist stage of development. Such individuals are interested in including and yet transcending the pluralism, social deconstruction, and process orientation of Individualists towards seeking transformative results and outcomes. As was reflected in Jeff’s definition and descriptions, Strategists move beyond the critique and social deconstruction of Individualists’ inclination to define the problems towards seeking the solutions and ideas that work. Additionally, they move towards an integrative vision of human and natural systems aligned towards a reciprocal flourishing, health, and wellbeing. As was reflected in the following quote from Jeff, they also see the importance of integrating interiors (values and beliefs) and exteriors (behaviors and systems) towards enacting their visions for sustainability and justice:

Finally, I want to reflect on how I try to build bridges between what integral theorists call the ‘interiority’ and ‘exteriority.’ Through a process called, ‘zooming-in’ and ‘zooming-out,’ I try to engage students to gauge their inner worlds as well as the outer world. It is not enough comprehending what needs to be done in the world; there are too many to choose from. Eventually what makes a difference is helping each educator/leader to figure out what is his/her inner calling? What is s/he gifted to do? What is the best way for him/her to engage? Not one mode of intervention works for all. (April, 2014)

When asked about how his approaches to sustainability have changed, Jeff described a significant change in his approach in the last ten years:

I had more of a diagnostic framework in 2002. Now I have a much more resilient framework. What I call the transition from system of problems that we do a lot of in academia, to really finding the system of solutions... That has grown my confidence that we indeed are a resilient species and that we will figure it out. We can become the beneficial members of the biosphere and we are going to do that. (August, 2013)

Jeff illustrated again the Strategist orientation away from critique and deconstruction and towards the potential of transformative change, with a vision for humanity and sustainability that is not about minimizing damage. Rather, it is about maximizing mutual benefit for all. Karl, another faculty in the Ph.D. program, also assessed at the Strategist action-logic. Karl described his approaches to sustainability education:

Well I think this area of exploration or study is about becoming more whole as humans both through being aware of all the different dimensions of our lives and looking at how we take part in that. Whether that’s the living a sustainable life which all of us aspire to and few of us are able to achieve in our present existence. To the commitment to being engaged in and support systems and processes that deal with issues of equality and justice...so evolving into a sustainability consciousness is just a natural evolution or next step to using every experience that we can have in the world to broaden our consciousness with how we are all interconnected and have an impact on one another...and how we are part of a system that is connected to everything else. And whatever we do in our local area has an impact ultimately in the larger scheme of things. (August, 2013)

A Strategist tendency reflected in Karl’s description of his vision for sustainability was his interest in and integration of interiors (consciousness) and exteriors (systemic and behavioral change):

I've been especially intrigued in the last five or ten years with the idea of the Akashic Field. And Ervin Lazlo's stand on that...to try to create specific areas or groups of people or locations where consciousness raising, conscious evolution is actually a commitment that people are making. That's certainly been in the back of my mind and my reading of Wilber has provided me with a context for that...we may be a temporary example of the species who has the opportunity to evolve and see where we can take the resources that we have in a direction that will elevate our species and perhaps provide an opportunity to connect with other species whether here or elsewhere in the universe. (August, 2013)

In this quote, Karl expressed an interest in the evolution of consciousness, reflective of the Strategist awareness and understanding of development. In the following quote he further articulated his integrative approach to sustainability:

I have spent most of my career...designing and developing programs that encouraged individuals and some groups to explore their potential for personal growth and commitment to larger world issues that define our current existence, from civil rights and social justice to climate change and environmental degradation. (August, 2013)

Karl, like Jeff, included an awareness and interest in the interconnection of systems of systems at the level of the Cosmos. Strategists value paradox and seek to integrate what others might see as disparate modes of thinking or fields of endeavor, such as consciousness development with social justice concerns and climate change. They are commonly interested in evolutionary transformative change, as is revealed in Karl's vision for the integration of interiors (consciousness) and exteriors (systemic and behavioral change).

Allison, a student participant also assessed at the 4.5, Strategist level, developmental stage, described her approach to sustainability education:

My background or my interest has really been in getting people outside and comfortable in nature and feeling that connection and I guess respect and...learning how to be safe in the outdoors...so pretty experiential and more about teaching concepts like adaptation or interconnectedness rather than facts and natural history....in my work in the [federal natural resource agency] there is a huge focus on the facts and the information in some of the programming. I've had an opportunity to start merging those two kind of conceptual and more specific topics in the environmental education programs...and trying to integrate them together as a way to tie in to the mission of the [a federal natural resource agency]... my focus is more on natural worlds and systems...it's really about integrating because I hang out in this really scientific organization that would really laugh me out of

the room if I started talking about the theory of everything...it's finding the integration which is what it's all about anyway – how to communicate that and how to work with people. (July, 2013)

Allison's inclination to teach more about ecosystem concepts than natural history facts, to integrate previously disparate parts of the agency, and to work across the differences reflect Strategist capacities for integration and perspective taking, and an understanding of worldview development. She also reflected on the differences between her own beliefs and those of the agency for which she works, which reflected her awareness of interior contexts and how they differ:

Part of who I am as a person is really different from the persona of my organization and so I think that there is a culture in any organization and the culture of natural resources and it's changing a lot. It's becoming a lot more integrated, but originally it was very game and fish oriented and less non game. (July, 2013)

In the following quote, Allison further elaborated her value and recognition of the importance of working well across worldview and value differences, which is again reflective of her understanding of interior contexts and the relationships between them:

I have seen an evolution in the field or at least the people that I work with, really maybe the whole field I think has evolved to be - the goal for the folks that I'm working with in environmental and conservation education is to integrate that work or the tools of engagement of people into the other tools we have as conservationists...we are working really hard to try to have the biologists sit down with the educators, sit down with the land managers to think through strategies that are going to work in all the dimensions and employ all the tools that we have at our disposal from the beginning. (July, 2013)

To summarize, individuals assessed at Strategist are able to see the systems of systems interacting and create opportunities for transformative change. They recognize differing interior contexts (world views, values, beliefs) and their evolution, and thus value integrating interior and exterior approaches to sustainability. They tend to be solution-oriented and guided by principles, and they seek to elevate or deepen the transformative nature of change (Cook-Greuter, 2005; O'Fallon, 2010b, 2013).

5.5 Transpersonal

Michele, a student participant in the research, was assessed at the 5.5, Transpersonal stage of development. She described her orientation within the field of sustainability education:

The thing that I'm really engaged with is being a part of the regenerative processes of the planet, and the planetary system is part of everything. The universe and the life of the universe unfolding. I am showing up for the life that is emerging and arising inside of me as part of that larger emergence and so sustainability is not necessarily as scintillating as a construct. It conveys a sense of maintaining. Whereas I feel like there is this intense call for regenerating and catalyzing the emergence of much deeper capabilities inside of emerging systems that have been suppressed. I tend to reorient around the kind of effortless, and also requiring attention, emergence of the regenerative living capacities of the larger systems—Planetary and beyond. (July, 2013)

Transpersonal individuals are aware that language and beliefs are constructs that shape human experience, and they can choose and create constructs to serve an evolutionary unfolding. This was evident in Michele's reflection about the ways she found sustainability limiting as a construct, and is drawn more to "showing up for the life that is emerging and arising inside of me as part of the larger emergence" of the unfolding Universe. She also spoke of tending to "reorient around the kind of effortless, and also requiring attention, emergence of the regenerative living capacities of the larger systems," reflecting an embodied experience and capacity to open to the awareness or causal ground out of which everything arises. Michele spoke again of choosing the sustainability field, not because it conveys all that she seeks, but because it is more integrative of what others might consider disparate parts of herself, such as her interests in permaculture, spiritual directions, and earth-based practices:

What I value in sustainability education in particular is that it is just one of the only places where people are talking about something remotely like that, so I really love Stephen Sterling's work. That seemed really integrative because I've been a permaculture designer for twenty plus years...and also I am a spiritual director and an earth-based practitioner. So there's not a lot of places where people are talking about all those things in a coherent, grounded way altogether in the field of education. (July, 2013)

The mature fifth person perspective of the Transpersonal individual can manifest in the

creation of entirely new methods of research, models, frames, and ways of teaching and learning. These individuals see connections and consciously constructed meta-perspectives where others do not. There is a greater flexibility and reflexive consciousness, with the creativity and capacity to morph and change (O'Fallon, 2013). This was true of Michele's research in which she created new research methods. Michele's offered a brief description of her research:

...a multiscale exploration of how the earth is modeling (educating/for) regenerativity – including personally (and transpersonally) via earth dreaming and earth empathy, in small groups via patterns from nature and bioculture catalyzing regenerative creativity, and in educational design via earth inspired wisdom school design. (Written reflection, March, 2014)

Additionally, individuals operating from this stage can begin to experience a peaceful letting go into a Transpersonal self. They have a high tolerance for things as they are, and their experience of emptiness can bring profound feelings of oneness and sacredness. These patterns were evident when Michele spoke of her transpersonal experiences in nature and sourcing her life and work from this awareness:

And I remember particularly this one moment when I was studying - I was figuring out in evolutionary ecology what thing to study and I was walking through the college campus... I came down off of this hill into this little meadow and I was all by myself and the wind was blowing and because I was trying so hard to pay attention you know... suddenly I got it in one of those epiphanic transcendental moments how everything was moving. I could see the ants or the insects. The grass was moving in the wind. Everything was moving - the air felt vibrant and alive. It was completely unaided by pharmacological substances. But it was like one of those kind of luminous, vibrant experiences which now I think I live that way a lot of the time but at the time what marked kind of a shift... Then subsequently that kind of very vibrant and alive awakening, sensory awakening and kind of co-presencing in and as the living earth definitely shifted my orientation. And now I might say I'm a Wiccan priestess or something right but all of that is just "clap trap" around this idea of what is vibrant and alive. (July, 2013)

The fifth person perspective, Construct Aware stage of development (not represented in this study), is a receptive phase of development in which one experiences the constructed nature of reality, the emptiness and fullness of constructs, and the awareness or causal ground from

which all of this arises. It is a perspective that recognizes not only that human beliefs and perspectives are socially constructed, but that the beliefs and language themselves are constructs that shape what people experience and know to be true. With this awareness emerges the capacities to redefine, move boundaries, and re-construct. The mature fifth person perspective of the Transpersonal individual includes awareness of constructs, and these individuals are able to prioritize, create, morph, and change these constructs to serve evolutionary unfolding.

Additionally individuals operating from this stage can begin to experience a peaceful letting go into a Transpersonal self. They have a high tolerance for things as they are, and their experience of emptiness can bring profound acceptance, feelings of oneness, and sacredness (O'Fallon, 2013). These patterns were evident when Michele spoke of “showing up for the life that is emerging and arising inside of me as part of the larger emergence” of the unfolding Universe. She also spoke of her transpersonal experiences in nature and sourcing her life and work from this awareness.

Summary

Sustainability is significantly different for individuals assessed at different developmental stages; understanding this has significant implications for sustainability education and leadership. Table 15 summarizes the ways in which participants' orientation and approach to sustainability education differ significantly according to their developmental stage. Each stage of development or action-logic has unique and valuable contributions to make to sustainability education, and each action-logic has limits or blind spots. Learning to recognize these differences and work skillfully across and with the strengths and limitations can guide teaching, mentoring, curriculum development, and sustainability initiative design.

Table 15

Developmental Stage, Perspectives and Approaches to Sustainability Education

Perspectives and Approaches to Sustainability Education	
Achiever	Action oriented, with a single system focus. Emphasis on achieving a particular goal such as success in completing the Ph.D. program or the success of a community development project. Scope of care & concern is World-centric.
Individualist	Complex, overlapping systems orientation to sustainability, concern for the diversity of perspectives and the importance of making room for these perspectives through story sharing, self reflection, dialogue etc., awareness of the social construction of beliefs & the deconstruction of anthropocentric beliefs, focus on identifying the problems and barriers to sustainability, emphasis on the development of the authentic self, separate from social or cultural expectations. Scope of care & concern is Planet-centric.
Strategist	Complex dynamic systems of systems, recognize differing interior contexts (world views, values, beliefs) & their evolution, integration of interior and exterior approaches to sustainability, solution oriented & guided by principles, integrate diverse ways of approaching sustainability, while seeking to transcend the limits of each, seek to elevate or deepen the transformative nature of change. Scope of care & concern is Cosmo-centric.
Construct Aware	Not represented in the study sample.
Transpersonal	Sources way of doing and being from a transpersonal experience of encountering a 'vibrant and alive' universe, participates in the larger unfolding and emergence of the Universe, creation of new methods of inquiry and engagement, complexity and consciousness. Scope of care & concern is Cosmo-centric.

Participants assessed at the Achiever stage approach sustainability in an action oriented, single system focus, with an emphasis on achieving a particular goal such as student success in completing the Ph.D. program or the success of a community development project. Participants assessed at Individualist take a more complex, horizontal, and overlapping systems orientation to sustainability; are concerned for the diversity of perspectives and the importance of making room for these perspectives through story sharing, etc.; are aware of the social construction of beliefs and the deconstruction of anthropocentric beliefs; focus on identifying the problems and barriers to sustainability; and include an emphasis on the development of the authentic self, separate from social or cultural expectations. Individuals assessed at Strategist see the systems of systems interacting and create opportunities for transformative change; recognize differing interior

contexts (world views, values, beliefs) and their evolution, and thus value integrating interior and exterior approaches to sustainability; are solution oriented and guided by principles; and value integrating diverse ways of approaching sustainability, transcending the limits of each of them, to elevate or deepen the transformative nature of change. And the individual assessed at Transpersonal sourced her way of doing and being from a transpersonal experience of encountering what she called a “vibrant and alive” universe, and participated in the larger unfolding and emergence of the universe, through the creation of new methods of inquiry and engagement.

In addition to the unique and valuable contributions of each action-logic, there are also emerging capacities at each of the subsequent stages that may be needed to address the increasingly complex, interconnected, and global challenges that humanity presently faces. The patterns of emerging capacities can guide sustainability education and leadership development. As an individual’s development matures, the vision for sustainability is more likely to:

- include a deeper or wider scope of transformative change and proceed from World-centric to Planet-centric to Cosmo-centric;
- be increasingly complex and integrative;
- move toward integrating body, mind, and spirit towards a vision of reciprocal flourishing and thriving for all of sentience;
- progress from either/or, to both/and, to one within another paradoxical thinking;
- integrate a greater capacity and awareness for being with things as they are;
- include an awareness of evolutionary potential (Brown, 2012; Cook-Greuter, 2005; O’Fallon, 2010b, 2013).

The implications of understanding that sustainability is qualitatively different for individuals assessed at different developmental stages, and that there are unique strengths, emergent capacities, and challenges or blind spots with each action-logic, is significant for sustainability education and leadership development. The implications and recommendations for future research are discussed in Chapter 6.

Finding Two

Learning about development can be developmentally transformative, both personally and professionally. There are four dimensions to finding two. These are 1) developmental change; 2) personal and professional impact; 3) developmental differences in how participants describe the impact and their experience of learning about development; and 4) the differences between students and faculty in terms of how they engaged with the research and action inquiry process, and the personal and professional impacts.

Regarding the developmental impact of the study, six of the eleven participants assessed at a later developmental stage in their second assessment, two participants' assessments showed more than one full stage of developmental growth, and two participants assessed at half to one stage earlier developmentally. Regarding the personal impacts, all participants described some positive impact (eight out the eleven describe significant personal impact) in their personal lives including greater self-awareness and self-knowledge; increased compassion, understanding, and acceptance of differences with others; communicating in ways that are developmentally responsive and aware; and more careful listening. In their professional lives, all participants described some positive impact, and seven out of eleven described significant professional impact. These included that learning about development influenced their research design and analysis, mentorship, communication, teaching, and curriculum design. There were also notable differences in the ways in which participants experienced learning about adult development according to their developmental stages.

Developmental Transformation

The research participants took the initial developmental assessment in August, 2013 and completed the second assessment March, 2014, with a gap of seven to eight months. According

to the assessments there were no developmental changes for three of the students (Helen, Luisa, and Michele). One faculty (Jeff) assessed on the earlier side of the same stage, and one student (Vanessa) assessed one stage earlier. Two students (Francesca and Allison) and two faculty (Karl and Stuart) assessed half a stage later. One faculty (Samantha) was assessed one and a half stage later, and one student (Barney) was assessed two and a half stages later developmentally. As a whole the group of participants was assessed later developmentally by four and a half overall stages. This was a significant developmental change and was unexpected within the short time frame of the study. Additional research is needed to assess whether these developmental changes would be sustained; however, it is clear that there was developmental movement for these individuals. These changes may take a while to stabilize and find full expression in the participants' lives. The finding suggests that learning about development, including taking a developmental assessment and receiving developmental coaching within the context of a collective learning experience, can be psychoactive, developmentally catalytic, and transformative.

For the individuals who assessed earlier than their previous assessment, it is possible that they were experiencing developmental fallback as a result of stress in their lives. Vanessa, who assessed a stage earlier, was in the last semester of the Ph.D. program, was writing her dissertation and spoke of being under considerable stress. Additionally, for the first assessment she took more than the recommended 45 minutes and spoke of really valuing the opportunity to reflect on her responses to the questions, whereas she only took 17 minutes to complete the second assessment. It is likely that this may have affected her assessment.

Table 16 offers a detailed look at the differences between the first and second developmental assessments.

Table 16

Comparison of Pre and Post Developmental Assessments

Participant	Role & Age	Assessment 1	Time for Assessment 1	Assessment 2	Time for Assessment 2	Developmental Change
Luisa	Student, 40-49	Achiever, 3.5	12 min.	Achiever, 3.5	23 min.	0
Helen	Student, 40-49	Individualist, 4.0	1 hr. 26 min.	Individualist, 4.0	25 min.	0
Vanessa	Student, 30-39	Individualist, 4.0	?	Achiever, 3.5	17 min.	-.5
Francesca	Student, 30-39	Individualist, 4.0	17 min.	L. Individualist, 4.0	15 min.	+.25
Stuart	Faculty, 40-49	L. Individualist, 4.0	21 min.	Strategist, 4.5	46 min.	+.25
Samantha	Faculty, 60-69	Individualist, 4.0	?	L. Strategist, 4.5	1 hr.	+.75
Allison	Student, 50-59	E. Strategist, 4.5	33 min.	Strategist, 4.5	18 min.	+.25
Karl	Faculty, 70-79	Strategist, 4.5	5+ hrs.	L. Strategist, 4.5	1 hr. 22 min.	+.25
Jeff	Faculty, 50-59	Strategist, 4.5	1 hr. 19 min.	E. Strategist, 4.5	29 min.	-.25
Barney	Student, 50-59	Achiever, 3.5	14 min.	L. Strategist, 4.5	5 hr.	+1.25
Michele	Student, 40-49	Transpersonal, 5.5	1 hr. 13 min.	Transpersonal, 5.5	1 hr. 31 min.	0
Total Change						+2.25 (4.5 stages)

Positive Personal and Professional Impacts

All participants described some positive impacts both personally and professionally, eight of the eleven participants described significant personal impact, and seven of the eleven described significant professional impact. Regarding personal impact, participants spoke of greater self understanding and self acceptance, increased understanding of others, improved communication and relationship dynamics, a deeper understanding of working with difference, greater perspective taking, empathy and listening, and that the developmental assessment and

coaching felt affirming and honoring. Table 17 shows the different ways in which participants described the positive personal impact of learning about adult development, as well as the differences between individuals, different developmental stages, and differences between students and faculty. Finding four presents the challenges participants described in learning about adult development and/or their critiques of the perspectives.

Table 17

Positive Personal Impacts Described by Participants

Positive Personal Impacts							
Participants	Understanding of Self, Self Acceptance	Understanding of Others	Communication, Relationship Dynamics	Working with difference	Perspective Taking, Empathy, Listening	Assessment felt affirmative, honoring	Total % per Developmental Stage
Achiever							
Luisa	x	x			x		50%
Individualist							
Helen	x	x	x	x	x	x	66%
Vanessa	x	x	x	x	x	x	
Francesca	x	x	x	x	x	x	
Stuart		x			x		
Samantha		x		x			
Strategist							
Allison	x	x	x	x	x	x	87%
Karl	x	x	x	x	x	x	
Jeff	x	x	x	x	x	x	
Barney	x	x		x			
Transpersonal							
Michele	x	x	x	x	x		83%
Totals	9	11	7	9	9	6	
Students	(7) 100%	(7) 100%	(5) 71%	(6) 86%	(6) 86%	(4) 57%	83%
Faculty	(2) 50%	(4) 100%	(2) 50%	(3) 75%	(3) 75%	(2) 50%	67%
Percentages	82%	100%	64%	82%	82%	54%	77%

It is interesting to note that all participants described a greater understanding of others. Almost all spoke of a greater understanding and acceptance of themselves and more capacity and skill for working effectively with others, in particular with whom they felt the greatest difference in terms of perspectives, values, and beliefs. Most spoke of increased empathy, compassion,

perspective taking, and a deepened understanding of the importance of carefully listening to another's perspective, beliefs, and needs. Although only six out of eleven described the actual experience of taking the developmental assessment and receiving the results as affirming and honoring, this is a notable result, given a common concern that being assessed at a particular stage of development might feel limiting and bring up negative feelings with regards to being categorized. The participants who spoke of feeling affirmed felt that the assessment was accurate, that it helped them to see themselves in their own development, and that it helped them recognize the ways they were growing. The following quote from student participant Francesca illustrated this:

Where I placed in my assessment in the beginning and the conversation that I had with [the developmental coach] was very affirming because it reflected back to me that I was exactly where I thought I was based on the language and the writing that I did in my own dissertation; that I was definitely moving along this particular path and it helped me to keep that in perspective because I can sometimes listen to my inner critic and feel impatient that I am not doing enough or I'm not progressing forward enough or doing enough to make the world a better place from the framework of the work that I do. (March, 2014)

Of the five who did not speak of the assessment as being affirmative or having a positive personal impact, one participant (Luisa), spoke of wanting to assess at a later stage, but ultimately felt the report was accurate. Barney, who first assessed at Achiever and later at Late Strategist, expressed some discomfort in his initial assessment. This was not surprising, given that his second assessment reflected a very different developmental picture; however, Barney experienced other challenges with the model and perspectives, which are discussed in greater detail in finding four. The other two participants who did not say much about their developmental assessment also assessed at a significantly later developmental stage in their second assessment (Samantha and Stuart).

In terms of professional impact, participants described learning about adult development

influencing how they approach mentoring, teaching and supervising, curriculum and project design, how they work with colleagues, their understanding of different cultural and professional contexts, communication, decision making and how they approached conflict, and that their understanding of adult development was influencing their research design and analysis. Table 18 shows the different ways participants described the areas of positive professional impact of learning about adult development, as well as the differences between individuals, different developmental stages, and between students and faculty.

Table 18

Positive Professional Impacts Described by Participants

Positive Professional Impacts							
Participants	Mentoring Teaching Supervising	Curriculum, Project Design	Working with colleagues	Understanding cultural & professional contexts	Applied to Research	Communication, decision- making, conflict	Total % per Developmental Stage
Achiever							
Luisa	x					x	33%
Individualist							
Helen	x	x	x	x	x	x	70%
Vanessa	x	x		x	x	x	
Francesca	x	x	x	x	x	x	
Stuart	x		x			x	
Samantha	x						
Strategist							
Allison	x	x	x	x	x	x	83%
Karl	x	x	x	x	x	x	
Jeff	x	x	x	x		x	
Barney	x			x		x	
Transpersonal							
Michele	x	x		x	x	x	83%
Totals	11	7	6	8	6	10	
Students	(7) 100%	(5) 71%	(3) 43%	(6) 86%	(5) 71%	(7) 100%	78%
Faculty	(4) 100%	(2) 50%	(3) 75%	(2) 50%	(1) 25%	(3) 75%	62%
Percentages	100%	64%	55%	73%	55%	91%	72%

Tables 17 and 18 show differences in the personal and professional impact between the developmental stages. Overall, Achievers described the least personal and professional impact, Strategists and Transpersonal the most, followed closely by Individualists. As a whole, participants described a greater personal impact (77%) than a professional impact (73%). I expected this given that it takes time to learn this material and to start applying it in both personal and professional contexts. I expect that, with more time, the participants interested in continuing to work with the perspective will develop a greater understanding and gain more experience working with it in a variety of contexts. There were also developmental patterns that

may be relevant to the degrees of personal versus professional impact. These are discussed in the following section. Additionally, there is a significant difference between the degree of impact that students described (80.5%) and the degree of impact that faculty described (64%).

The following quotes illustrate some of the ways participants described the personal and professional impacts of learning about adult development, engaging in the action inquiry research process, taking a developmental assessment, and receiving developmental coaching.

Francesca spoke of the way the experience helped her to take a perspective on her own development:

One aspect I find interesting about the process I am going through with your research is that it has given me an opportunity to step outside of my own mind and body and self-labeling in order to see how I have been developing through an objective, external lens. And thus far, it seems like positive development. In other words, according to [the developmental coach], I am doing a good job of development. (Written reflections, October, 2013)

Helen spoke of the experience supporting her ability to teach in a way consistent with her values and awareness, even as these differ from the cultural context in which she teaches:

It's so easy to fall back on the standardized achievement system which is "okay shut up everybody and this is what you are going to be doing". Learning about adult development helped me keep true to my integrity in a way...I would have been perhaps challenged to a point that I wouldn't be able to do this a hundred percent of the time. But I can say that I did it a hundred percent of the time. It gave me that kind of support...What happened is that at the end of the semester when the university in Britain comes - we have a delegate that comes and looks at all the different curricula and looks at all the different papers and folders and portfolios and exams and everything. Actually my course was the only one who got to - they called it a curriculum or module that should be used as a role model. (March, 2014)

Vanessa spoke of the experience helping her to integrate diverse perspectives and awareness including an appreciation of the rights of animals and ecosystems:

For example, if you are not thinking about diversity then maybe the way that you write something can be - it can be true, but it can be very straight and narrow compared to being a bit more wholesome. And I'm thinking maybe from an ecological perspective, we all want to throw that word out there. But that word alone is challenging us to be

wholesome or to think more holistically and yet unless we are going through a process where we are assessing ourselves, as we evolve and develop, we may not necessarily realize that the rights of animals are just as important as the rights of trees; do you know what I mean? (March, 2014)

Allison talked about realizing that although she can get frustrated by misunderstandings between herself and others, everyone has a different perspective on the world, and it is helpful to take this into consideration:

One of the primary realizations I've had from the experience is in regards to misunderstandings with other people. Sometimes things seem obvious to me, but I get frustrated when other people don't see it the same way. Our readings and discussions have helped me recognize that others may be looking at the same thing, but seeing a different piece of it than I do. So, when we talk it seems as if we are seeing something completely different, but we are really looking at different parts of the same thing, a sort of "Five Hindus and the Elephant" story. I have to work to remember that it's OK, what they are seeing is really there, just as what I see is, and it is important to keep talking so that I can understand what their experience is. We are looking out different windows on to the same landscape, but our views don't necessarily overlap all the time. (March, 2014)

Jeff spoke of paying more attention to the interior beliefs, values, and development of his students, recognizing these differences, accepting them, and finding ways of acting on this awareness:

I think as I said all of these experiences, these feelings, these observations happen all the time, but your research and this discussion has brought more attention. It is making me more mindful or attentive. I have these different kinds of students. I would not have done this systemic assessment of my students, like in what range are they? I have become much more aware. I'm now seeing that picture. I'm giving value to what that range is and what is my role in those six different or ten different situations; right? So, it's just the whole level of awareness and my reality is the same, but my awareness is becoming different and accepting, but at the same time recognizing that I can't just be a quiet observer. I need to do something. (March, 2014)

Developmental Differences

There were significant differences between the developmental stages in the way participants experienced learning about development and the way they described the personal

and professional impact. Overall, the Achiever participant described the least personal and professional impact and struggled with the complexity of the material. Strategists described the greatest impact and had the least conflict with constructive development theory. The transpersonal participant spoke of some significant insights and impacts, as well as being equally challenged by many aspects of the model. The Individualist students reported significant impact, whereas the faculty, initially assessed at Individualist and later at Strategist, either did not feel they had learned enough for the experience to have a significant impact (Stuart), or felt critical of much of the theory and perspective (Samantha).

Achiever 3.5

The 3.5 stage of development is an action-oriented, forward-leaning stage of development, and individuals operating out of this developmental phase tend to be keenly focused on pursuing goals and visions through seeking results and effectiveness rather than efficiency. They are interested in their own ideas and those of others, and in thoughts and feelings and exploring these through introspection and feedback. However, they are likely to assume that others see things as they do. They seek proactive ways around problems; they begin to appreciate complexity and multiple views, and seek feedback, especially when it helps them improve or reach a goal. The developmental framework may be of interest in terms of their desire to get ahead and improve; however, they are likely to find the model complex and hard to understand, given that they do not yet have much access to the 4.0 awareness of social contexts, internally and externally, the 5.0 awareness of constructs, or the 6.0 awareness of the unity of opposites (Cook-Greuter, 2005; O'Fallon, 2010b, 2013).

Although two individuals were originally assessed at Achiever in the study sample, Barney was later assessed at Late Strategist. Additionally, two of the four faculty who dropped

out of the study had assessed at Achiever. Therefore, there was essentially only one student participant, Luisa, who assessed at Achiever.

When asked why she chose to participate in the study, Luisa expressed an interest in learning about adult development, in addition to supporting my research. She was only able to participate in two of the five Action Inquiry calls, and she only submitted two of the five written reflections. However, she was an engaged and committed participant who worked hard to understand adult development and apply her learning. Luisa also spoke of wanting to be assessed later in the developmental scale, but that she ultimately felt the report was accurate:

I can tell you that initially when I first got the results back I was happy but then I was also, you always want to do better. You always want to score higher on a test kind of thing....So it took a little while to get over that idea even though it had nothing to do with what the report said. Because the report is pretty accurate actually. Although I do think I do things at the next stage a little bit more than maybe was reflected. But, that's okay also because then it just means maybe it means that I'm a little bit more aware having gone through the description of what I do or don't do in different ways. (March, 2014)

Luisa applied her learning about adult development to her role as a supervisor in a university library. One of her significant insights came when she realized that she had assumed that all of her supervisors were developmentally earlier than she was:

First, I think it's nice to have this report because it gives you a place to start from...So, it was nice for me to look at if I'm an Achiever and I'm always assuming that everybody is operating at a previous stage, but that's not necessarily always true. I mean in my department. Maybe they are operating at a – and I hadn't looked at any of the characteristics from the later stages to see if well maybe the problem is I'm coming from this place and this person is actually a lot more aligned with universal organizational goals as opposed to personal goals and I just have it flipped around. So that was kind of a – the day I realized that I was like “Oh, well duh. You are not always at the top of the list Luisa.” But, I haven't really examined it from that other perspective. From coming around to see if I'm looking up instead of back. (March, 2014)

In reflecting on her experience learning about adult development, Luisa's spoke of the challenges she faced:

I think some of the documentation was difficult for me to understand. And that's real, just

a real functional thing...I wish I had more time to devote to it. That's the other thing. I think I probably missed a lot by not being able to be available for all the calls. (March, 2014)

Ultimately, the experience of learning about adult development had some impact on Luisa, but it was not immediately evident that the impact was significant, primarily due to the complexity of the material and her availability to engage with it:

I would say it has helped me to pay a little bit more attention to where I am and where somebody else is in a very general way. I try to do that anyway, but this helps just remind me of that...I think I've learned enough to start applying it. I probably have not learned enough to apply it really well. (March, 2014)

Reflected in Luisa's experiences were her 3.5, or mature, third person perspective taking capacities and tendencies. Although she had some struggles with understanding the complexity of the material, she worked hard to apply the perspectives to understanding her staff's learning styles and needs in order to help them achieve their work goals and objectives in a more independent and self-directed way. She also saw her own desire to be developmentally later, and the assumption that she was more developed than her staff, both of which are characteristic of a mature third person perspective.

Individualist 4.0

The 4.0 stage of development is shaped by an access to the early fourth person perspective awareness of social contexts, internally and externally. This generally comes about from many trials and errors with goal setting. This deepening understanding of subjectivity, the ways in which subjectivity is shaped by the contexts individuals identify with (culture, family, religion, school etc.), influences Individualists' capacities to be objective. With this comes an interest in deconstruction and social critique. This is a receptive, introspective phase with an emphasis on the present moment. With the awareness of different inner voices (child, parent, etc.), there is an interest in seeking the authentic self and supporting others to do the same

through dialogue and story sharing. With the challenge of prioritizing inner voices and exterior contexts, all ways become equally valid and relative. Individualists tend to dislike hierarchies, categorizations, and models. Once focused on the analytical mind, they become interested in feelings and connection between the mind and body, and they develop empathy for the well being of a wholeness larger than their own. The rights of nature and all life are valued, and they have an interest in liberating humans from dogma, greed, and judgment, but they tend to not see their own dogmatic judgments of those who do not believe what they do (Cook-Greuter, 2005; O'Fallon, 2010b, 2013).

Five participants were initially assessed at the 4.0 stage of development, including three students and two faculty members. The student participants assessed at Individualist were avidly engaged in the Action Inquiry learning process and described significant personal and professional impact as a result of their learning. The faculty members assessed at Individualist, on the other hand, either struggled ideologically with the adult development perspective or did not engage enough to achieve much impact. Due to significant differences between faculty members and student participants in terms of personal and professional impact and their experience of learning about adult development, I discuss each group separately.

Individualist students. All three student participants assessed at Individualist (Francesca, Helen and Vanessa) spoke of feeling valued and affirmed by their developmental assessment and coaching experience, and deepening their self-awareness and understanding.

Helen expressed this in the following:

I find it very interesting to be able to identify my current stage of development and perhaps also relate what I am learning to my development in the past. I realized that some of the challenging phases or situations that I lived through were actually development phases, which is something I did not realize at the time. I mean that development to me was not a decision to develop, but an urge to become a better / different / more grounded person. These were almost always uneasy and uncomfortable situations that were not

totally compatible with what my context / culture / community expected from me. It felt unsettling at the time because, among a lot of other baggage, I felt bad that I was not meeting the expectations of those who are so dear to me but belong to and believe in that mindset that I was getting farther and farther from. (Written reflections, October, 2013)

Vanessa expressed a similar sense of affirmation and self-awareness as a result of the developmental assessment process:

So it definitely was quite an eye opener. I think sometimes we don't take time to ask ourselves deeply personal questions. All of a sudden I felt very vulnerable because now I'm asking and able to answer something... I felt very happy, like I felt like I was important. Someone wanted the inner me to have a voice and part of that was just asking these questions We may not stop to question or to inquire about who we are becoming...if you don't take time to go through a process where you are kind of asking yourself that, even as simple as maybe you can say what are you happy about? You may not realize that you are actually doing okay or you are even doing a phenomenal job being yourself. (March, 2014)

The Individualist students also talked about the readings and material as quite complex, but rather than worry about learning the details of the framework, they appreciated learning about their own development and exploring their development through their reflections and the group video calls:

A good number of the texts at least from the beginning just reading them even before we started this research process, they're always a little over my head, but I think what has been nice with the way that you have done it is such that I can just find myself in all of that vastness and it's okay to dwell on just what speaks to me. (Vanessa, March, 2014)

Francesca spoke of valuing the support of the conversations with other participants regarding her own development, more so than the her particular developmental assessment:

It's interesting too that in the initial test and showing where I was in the developmental stage - which was just sort of this snapshot in time anyway - it was more important in the beginning than over the course of all the dialogues that we had - which became more just talking about how we were experiencing change in our own individual lives and in community with other people. So learning about the stages was interesting and it gave me some language. But, most of the learning for me was being able to communicate about challenges and what I was trying to do and kind of having that reflected back to me in a supportive way from people. (March, 2014)

All three student participants assessed at Individualist spoke of the impact the experience had on their understanding of others and how it influenced their communication, perspective taking, empathy, and understanding. Francesca spoke of the impact on her relationships and communication:

What I have learned thus far about the model you have introduced for adult development has most influenced my role as a community member in my job. It is in this community where I think of educating by example. In learning about where I am in my own development has given me a better idea of how I tend to interact with other people and how I might try to meet others where they are rather than expecting or anticipating that they should meet me where I am. (Written reflections, October, 2013)

Helen spoke of the impact on her relationships with the communities with whom she works:

The other level of impact is what I do with the different communities [Bedouin and Nubian] in terms of volunteering time to work with them. This adult development process helped me a lot in again surpassing what could have stopped the relationship from developing. For example, I experienced ways of dealing – for example, they are not professional in the way they work or the way they communicate and they have their own cultures. They have their own ways of doing things... I remember clearly after some of our groups calls, that I would step back... I think what the difference here is that I was able to put it in the right perspective and take all the personal feelings that are not right out of the equation and just think of it ...from their own point of view way. This research process helped me a lot in again surpassing what could have stopped the relationship from developing. (March, 2014)

Vanessa spoke of the influence on her use of language and being able to hold a greater whole in mind:

This development process has challenged me to be more wholesome in my language. So avoiding - and I think you sort of taught me this idea... You would always kind of try to encourage us or invite us not to be so extreme or to be so – to assume that just because there is a ying, there might be no yang. I think my language is kind of evolving, so that I can be able to hold the whole. So that it can be received by more than just the one person.... And I think it takes going through even something like the developmental assessment or some of these questions in development where you are having to think about diversity. (March, 2014)

All three student participants described significant personal and professional impacts from participating in the study:

I am so inspired with your work and it is so amazing that I am involved in your work at a time when I can actually apply it to where I am at and what I am doing in my life at this stage. When we first talked about my involvement in your research, I had no idea it would be so timely for me. My relationship with the communities I work with is so important to me and I am so glad I am finding learning that supports the evolution of our relationship. (Helen, March, 2014)

I now realize that the formal education system could further embrace that students will continue to develop throughout their lives and that the learner deserves to grow at their own pace. It is more inclusive to talk more of interpretations rather than truth because we are all shaped by experiences. With where I am in my development process, I seek out and value feedback from others, but I can't firmly say that I was always this way or I will remain this way... My perception is that if I am aware of my own development process, this opens the door to being more aware of others as beings on their own development path. (Vanessa, written reflections, January, 2014)

The adult developmental stages could be a tool to help people see where they are in terms of – maybe it could be connected to personal sustainability. With the idea that moving through these developmental stages is really a way to actually create sustainability in our own lives and in the world. (Francesca, written reflections, January, 2014)

These participants also spoke of the desire to continue the process and expressed a need for guidance going forward:

Honestly, I'm thinking about how to keep thinking about these things. I don't want to lose that thinking that I fall back on when I feel very - the example when I'm there in the classroom with other teachers, you feel like it's so easy to get sucked into the normative, standardized way of doing things. (Helen, March, 2014)

These participants' experiences were reflective of their fourth person perspective taking capacity. A substantial part of their reflections focus on their own development, self-awareness and understanding, and the impact this had on their relationships with others. There was less attention on assessing or categorizing another's developmental stage. They spoke of being aware of the various cultural and organizational contexts of which they are a part, how these contexts

influence them, and how understanding different world views and adjusting their communication and behaviors accordingly influenced the quality of their relationships. Their challenges in relationship to learning about adult development were minimal. They spoke of time limits and the complexity of some of the readings. They expressed some initial concerns about the hierarchical dimensions of the model and their perceptions that it suggested a linear progression to development. However, these concerns and challenges did not seem to be significant and were barely mentioned in the final interviews.

Of these three, Francesca was assessed at half a stage later developmentally in the second assessment. Helen was assessed at the same stage of development; however, she completed her second assessment in 25 minutes, as compared with the recommended 45 minutes and the hour and 26 minutes of her initial assessment. My interpretation of the way Helen was working with the developmental perspective was that she was moving into the 4.5 Strategist stage of development, and had she taken more time on the assessment it might have reflected this. Also, Helen lives and works in a cultural context that is most likely significantly earlier developmentally than she is (a Diplomat or Expert cultural context), making the embodiment and expression of later stages harder to stabilize and fully express. Vanessa assessed at Individualist in her initial assessment and Achiever in her second assessment. She also only took 17 minutes to complete her second assessment. From her written reflections and interview statements, she was clearly embodying the fourth person, context-aware perspective and may have assessed earlier developmentally because of how quickly she completed the assessment and/or because she was in an intensive phase of completing her dissertation and talked about feeling stressed.

Individualist faculty. The two faculty participants initially assessed at Individualist (Stuart and Samantha) followed some similar, 4.0 perspective taking patterns; yet, their

experience of learning about adult development and their reflections on the personal and professional impact differed significantly from the students. In general, the faculty participants engaged with the research and the action inquiry learning process in markedly different ways. The faculty members' reasons for participating tended to be that they wanted to support the research rather than having their own interest in adult development theory. Although the four faculty participants who completed the study were able to participate in the four action inquiry calls and the pre and post interviews, they were rarely able to complete the readings and mostly did not submit the written reflections. Additionally, the three-hour, face-to-face workshop to introduce adult development came at the end of two new student orientations and multiple days of faculty meetings. The faculty spoke of feeling exhausted and having a hard time concentrating on the workshop. One of the faculty participants (Jeff) declined to attend for these reasons. I gave him an individual workshop over a video call three weeks later. In sum, their participation was challenged by their limited time availability, and lacked an intrinsic motivation beyond supporting the research.

Samantha spoke of her initial concerns and critiques of the adult development perspective. She questioned the static nature of models, the human centricism of the perspective, and the hierarchical nature of the model that suggested to her that not all of the stages of development are valued and seen as equally valuable. She also expressed concern about the application of the model to the business, management, and leadership fields, and the influence this has had on the language and metaphors.

Initially (and reactively), I suspected that this approach was just another linear, hierarchical way to deconstruct human relationship (much like the Myers-Briggs inventory). The integral approach felt highly contrived, anthropocentric, and even culturally myopic. The ontological premise undergirding this idea of a developmental lens appeared to be based on a Cartesian, deconstructionist Weltanschauung...I have a little bit of an allergic reaction to the term model. Anyway so model meaning that you've

just taken a still shot of something and when you are looking at an ecological system it is a moving, changing piece and it's not a still shot. So when there's a model and especially a copyrighted model and so now we're getting into the worst of the worst. (Written reflections, December, 2013)

In spite of Samantha's significant concerns and critiques about adult development theory, she also reflected on her own reticence to consider its value:

I could see its limitations, but was reticent to consider its positive and practical applications. Taking a breath and having chuckle at my own rigidity, I needed only to remind myself of my reason for participating in this study in the first place to be able to "let go" of my initial dismissal of the framework. (Written reflections, December, 2013)

Samantha also reflected on the potential value of adult development. Early in the study, she spoke of its usefulness for understanding students and colleagues:

In the last few weeks, I have applied what I have learned about developmental stages to human interactions within a learning context...Nonetheless, using the developmental lenses I identified apparent phases of development characterized by the students and colleagues with whom I work. Specifically, I have observed and reflected upon my actions and the actions of others as interrelationships within the integral developmental ways of knowing. Because I know teaching and learning as fractal-like interrelationships, I can be dazzled or at least perplexed by some of the repeating patterns I see in human behavior. So, thanks for introducing me to this developmental protocol. (Written reflections, December, 2013)

And in her final interview, when asked about the personal and professional impacts of the experience, she spoke of appreciating the developmental coaching session, the conversation with her colleagues, and the way the model helped her to understand a challenging dynamic with a student:

I thought this was particularly useful for me at the moment because it allowed me to categorize in some ways others to have appreciation of some of the things that they are going through. So that was very useful. Because we can get out on our own path and perhaps not – I hate to use the word back and forth, but to reach back or reach through other ways of knowing so that we come to some sort of understanding - even if the understanding is we don't understand each other. That's a movement. That can be a good movement too. So, I found that very useful. (March, 2014)

There was clearly some value for Samantha in her work with others; however, she did not speak of much impact on a more personal level in terms of self-understanding or self-awareness, and she continued to have significant ideological concerns about the perspectives:

So that's where the hierarchal thing is a little problematic for me... The research is - because it's got a high end - the research is good. It's limitation is the fact that it is so human centric. But, whatever. Everything has limitations. It's okay. (March, 2014)

Interestingly, in Samantha's second developmental assessment she assessed at Late Strategist, which reflected a significant developmental change between the first and second assessment. Her concerns about the hierarchical categorization of the model were reflective of the receptive, in-the-moment pluralism of an early fourth person perspective. Her social critique of human centricism and Cartesian approaches to education reflected her awareness and deconstruction of the social construction of perspectives. However, Samantha's self-awareness and inquiry into her perspectives and preconceptions about the model, and her willingness to explore the value and applications of the model, while not wanting to be limited by it, suggested the 4.5 perspective taking capacity of a Strategist. These critiques are valuable and they offer important feedback on some of the ways in which people can experience adult development. They are also reflective of developmental patterns. Finding four explores in greater depth critical perspectives, the challenges people have learning about adult development, and the implications for teaching and learning about adult development.

Faculty member Stuart was assessed at Late Individualist in the initial assessment and Strategist in the second assessment. In the action inquiry process and the interviews, Stuart's reflections and thoughts suggested someone transitioning out of 4.0 Individualist and into 4.5 Strategist perspective taking capacity. Some of the Strategist capacities I observed in Stuart were a developing awareness of his own projections and shadow, the depth of his capacities to

engaged in self-inquiry and self-reflection, his desire to prioritize contexts (interior and exterior) for the benefit of choices guided by principles rather than rules, and an appreciation of paradoxical thinking.

Stuart was one of the more engaged faculty in the action inquiry process. He attended all calls and submitted three written reflections, more than any other faculty. After the first workshop, he expressed an interest in learning more about adult development. He also spoke of an impact on his parenting and teaching. However, Stuart spoke of being challenged by the structure of the action inquiry learning process. He found the length of time between the conference calls (three weeks to a month) challenging to sustain and remember the learning. He felt he would have benefitted more from an intensive face-to-face workshop. In the final interview, Stuart said he needed more literacy to apply his learning to his teaching and mentoring, and could not remember his own developmental stage.

After the initial developmental assessment, Stuart expressed his desire to be later developmentally. This is something commonly found in Strategists (as well as Achievers):

I was excited to learn about this new approach. I'm not a huge fan of categorizations. But I come from a field that is very much a fan of categorizations. And so I've grown to be comfortable with them. And it was interesting for me to begin to see myself in this new categorization scheme. I grappled I think a little bit with the notion that I somehow wanted to try and be on the top of the scale. And then I was coached to not think so much about that. But I was aware kind of continuously in the back of my head I was aware of that element. (Written reflections, September, 2013)

When asked about whether learning about adult development supported him to gain insight into his own developmental unfolding or the perspectives that he takes in his work with others, his response was as follows:

I would have to say no. Partially because I think I have – I think of myself as having a reasonably okay self-awareness on these sorts of things. And the other reason I would have to I think say no is because I don't think I grappled with it long enough to shake my

preconceptions. And so had we done a weekend's worth of workshops that lasted for six, seven hours a day or something. I suspect very much so that by the end of that time I would have had real substantive new insights. But in the absence of that and the replacement of that with the phone calls and the separation of time by a month or two weeks or whatever it was. That's just not the setting under which I can meaningfully grapple with things. Especially things that are related to myself. (March, 2014)

Stuart, however, spoke of being more understanding and accepting of students:

Now I'm not accepting of the staff with whom I'm working that are putting every road block they can come up with in the face of the student's education. But I'm much more understanding and calm with the students. (March, 2014)

My interpretation is that both Stuart and Samantha needed a different structure for learning and inquiry to support their engagement with, understanding of, and application of adult development, and its implications for teaching, mentorship, and sustainability education. It is also possible that even with this kind of structure, their concerns, perspectives, and lack of significant personal and professional impact may not have changed.

Strategist 4.5

Individuals enacting a mature fourth person perspective understand the influence of interior worldviews and exterior contexts on shaping perspectives and experience. They prioritize and design contexts in service of moving forward, recognizing that some systems, environments, and perspectives are a better fit for different contexts and transformative outcomes. An example is creating the context for a multi-stakeholder dialogue in such a way that divergent opinions can be expressed and heard, or creating a developmentally aware and responsive Ph.D. curriculum. This is, again, a forward-leaning, action-oriented phase, and the first stage in which individuals can see their own transformations through time. They naturally understand this transformative change without any understanding of developmental theory. Seeing that development occurs, they may become quite passionate about their own and others' development, and want to take on any and all practices that might support it. They now embrace

both process and a future-oriented focus by working with principles rather than goals, and transcending pluralism with an integrative and adaptive vision for a transformative future. They begin to recognize their own projections, seeing that what they judge others for (positive and negative) are qualities in their own being. This is seen after the fact through reflection, and supports their embrace of paradox. They tend to be committed to transdisciplinarity, and to organizing and engaging multiple perspectives to propose solutions for complex challenges (Cook-Greuter, 2005; O'Fallon, 2010b, 2013).

Two faculty (Karl and Jeff) and one student (Allison) were initially assessed at Strategist; however, with the second assessments three additional participants (Stuart, Samantha, and Barney) assessed at Strategist. Not surprisingly, the Strategist participants spoke of the greatest personal and professional impact from engaging in the research process, even though learning about adult development was completely new for two of them and relatively new for the third (Karl). They also had the fewest struggles or challenges with a developmental perspective.

These participants reflected on the impact on themselves personally:

The missing piece is that it would be easy to keep on going without any awareness of our internal development...and simply focus on the external. It is all around us in our accomplishments and in the artifacts of our creative energies. So it is a gift to be able (and willing) to look inward and take a view of the various stages that influence us (me). Being part of your research has been such a gift and I imagine this will continue giving for all that are exposed to it, whether we know it or not. (Karl, March, 2014)

I think as I said all of these experiences, these feelings, these observations happen all the time, but your research and this discussion has brought more attention. It is making me more mindful or attentive....It has been very interesting...It has allowed me to look into the existing current phenomenon of my one life as a professor, as a Nepalese educator, as provocateur of ideas. It has allowed me to play and see myself in the field of play and drama. Drama of the world. And some of these words and ideas have allowed me to be more systematic....It's all a blessing. (Jeff, March, 2014)

Allison spoke of the impact it had on her relationships with others and her capacity to take other people's perspectives, as all of the Strategist participants did:

I think for me the biggest ah-ha was more understanding about people who I'd be frustrated with because I didn't understand why they didn't get something and then I realized they are in a different stage around this than I am, and I have to think about that's how I used to see it. And there are other things that I see in that same frame now, but we are both looking at these things from different frames. (Allison, March, 2014)

They also reflected on its application to teaching, mentoring, and program design:

Gaining understanding of where people are coming from and the lens they are looking through and understanding that as an educator no matter who you are working with, it's really important. It's also important to recognize your own preferences and styles and how you are coming at the situation and then to help the learners learn about themselves. Similar to what you've done in this adult development course. Learning a lot more about ourselves as learners. So the learners and the educators learning about themselves and then the educator learning about the students to be able to create experiences that are accessible and understandable so growth can occur. (Allison, March, 2014)

I think it is important to step outside our normal role as faculty to take a larger view of how our lives (and work) are organized so that the developmental stages and transitions we are moving through (and within) can be made more apparent or at least have a framework for assessing and understanding. Ideally we would be sharing this openly so that we could compare notes and provide feedback to one another on how we see ourselves as well as how others see us. This is immensely valuable in understanding and resolving differences and conflicts, as well as appreciating and drawing on the resources that we collectively represent. Obviously there is a benefit for each of us in assessing where and when we are in the different spaces represented by the different action-logics. (Karl, March, 2014)

Jeff talked about the importance of paying attention to students' interiors, which was significant given that initially he was an ambivalent and a somewhat critical participant:

She has an interiority [referring to a student]. We really have to work in our curriculum and our process and this research...has been very useful by the way because it allows me to give more attention to these things. It makes it valid that I should be thinking about this range of students that we are working with. And that we should develop some more capacity to meet them... Without being aware of the personal vigor [his term for students interiors – beliefs, values, meaning making etc.], I think the academic rigor or whatever I am trying to teach is highly compromised. It's absolutely compromised. The process with you has helped me to see why that personal vigor element is probably seventy percent of the whole thing... I will have to do more advising sessions to complement the – and not assume that all that wonderful readings and all this will percolate among people just automatically. It will not. (Jeff, March, 2014)

Faculty participant Karl also talked about the potential application to Prescott College's

Ph.D. program:

I think this is a dynamic model that I would like to see implemented more widely, particularly for Prescott College and the Ph.D. program. More of an expectation on - from my standpoint in terms of helping people to be aware of where they and other people are coming from can be really helpful in sustainability....That people – our students – as advanced as they may be need to have some context – some template with which to understand what’s going on with adult learning and development. (March, 2014)

These participants’ experiences were reflective of the mature, fourth person perspective taking capacity. The impact they described of learning about adult development and experiencing a developmental assessment is significant. They spoke of greater self-understanding and perspective taking, and understanding and empathy for others. Compared to the two previous stages, they were more easily able to see the role that interior worldviews or perspectives play in learning, leadership, and sustainability education, and therefore how critical it is to integrate interiors in how to design curriculum, approach teaching and mentorship, and how to work well with a diversity of stakeholders. They also spoke passionately about the need for personal development and transformation, and the need to enjoy creating transformative and potentially developmental experiences for others.

Transpersonal 5.5

With the fifth person perspective arises an awareness of the constructs that shape human understanding and experience of the world. Because this is a new awareness, individuals can be overwhelmed by the awareness of so many perspectives and may struggle to prioritize constructs. The mature fifth person perspective of the Transpersonal individual includes awareness of constructs. They begin to prioritize, create, morph, and change these constructs to serve an evolutionary unfolding. This can manifest in building their own complex creations, combining ideas and constructs into new forms in a particular area of interest. They are likely to see connections and consciously constructed meta-perspectives where others do not and they

have greater flexibility and reflexiveness. Additionally, individuals operating from this stage can begin to experience a peaceful letting go into a Transpersonal self. They have a high tolerance for things as they are, and their experience of emptiness can bring profound acceptance, feelings of oneness, and sacredness. Their compassion for others can be wide and deep. They have significant capacities to redefine, reframe, construct and reconstruct, and see unusual connections between what others might see as disparate fields or endeavors (O'Fallon, 2013).

Only one student participant (Michele) assessed at this stage of development. Michele spoke of both significant personal and professional impact from learning about adult development, and expressed significant concerns and critiques about aspects of the developmental perspective and model. To aid her learning she creatively mapped the developmental stages with other models/perspectives that she makes use of, such as astrology and looking at the shadow/pathologies that might be associated with each stage. She expressed discomfort with being “made to feel special” as she felt she was during the coaching session; yet she found the assessment and her reflections on it gave her the opportunity to attend to deepening her self-awareness about her own thinking and learning:

I think that I was surprised to realize some ways given that my dissertation is about metacognition basically – emergent metacognition may be the better term for it. But there were some ways I had not been necessarily been sitting in or arising in or deepening in self-awareness about my own thinking and learning processes that your research gave me the opportunity to attend to. So I was thankful for that opportunity certainly and one of those areas was learning more about how I might not be learning as much as I could. Because I wasn't in a state of emergent metacognition as much as I thought I was in some ways. So that was refreshing and exciting. (March, 2014)

She also spoke of her perception that there may be resonances between her own unfolding development and the patterns found in constructive development theory:

I haven't had time to make a study, but I feel confident if I were to look back over those significant shifts and deepenings in my own incarnational experience that there would be resonances with the material like Kegan's model or Cook-Greuter. I think there is

something going on there. You know what I mean? (March, 2014)

Learning about the different stages or ways of meaning-making and perspective taking was also compassion generating for Michele:

And so being a part of your research project has helped me have more compassion for the explaining or patience and resilience. Because other people's modes of intelligence which I don't necessarily frame inside of the developmental model. And I wouldn't necessarily frame it as the just – the whole term development - just the different ways of knowing and be able to have access to that's been compassion generating in that way. (March, 2014)

Most significantly, learning about adult development offered her some insight into one aspect of her research findings.

In complexity education they call it level jumping. Transphenomenality. Davis and Small talk about that a lot. About being able to metacognize level jumping. Getting the language around construct aware where it seemed helpful for me because I was just naturally going there. But then I had to explain why would that be valuable? Why would you want to do that? Which to me because I don't even know if I am construct aware or whatever. I don't even know about that. But I definitely recognize or relate to that and so it was helpful to be able to talk about that. (March, 2014)

When asked about being understood by others, given her later and more rare stage of development, she spoke of seeing the possibility that the assessment might give her a chance to be more fully seen:

I have a very loose set of expectations about this incarnational experience. I love being delighted – I mean I'm often delighted and I'm not attached. The nonattachment is critical for the acceptance...But in general I have never – I have so rarely been understood by other human beings that I don't expect it. And the non-expecting of it is extremely relieving...But, that was one of the interesting, kind of earlier epiphanies for me about taking the assessment – maybe it would be interesting if I actually did have the parts of myself that are often not – it's not that I'm lonely or whatever. An outcast feeling or anything because the entire planet – there are a lot of things that are friendly. There are these flickers that have been hanging out in the backyard that understand me better than my committee. (March, 2014)

However, Michele also struggled with aspects of the developmental perspective. This is reflected in the following quote:

It took me a while to become more friendly with the model. My opinion is that it has some cultural biases structured into it – that it doesn't see itself... That's kind of inevitable. But anyway some of the ways that it doesn't see itself are things that I often pay attention to. So there was this certain emotional irritation I felt towards the ways that the people – where it was being generated from that the people were kind of consistently ignoring certain things or continuing to reinforce certain cultural norms and forms that I do not experience as liberating or expansive or spacious... I'm just trying to find ways to metabolize the model in a way that I can translate and harvest the value out of it. And let it serve as a perturbation in my own kind of autopoiesis ... in some ways I ended up feeling friendly about it because of the conversations and some of the other materials I ended up reading. (March, 2014)

Differences between Students and Faculty

There were significant differences in the ways in which students and faculty engaged with the research and action inquiry learning process, as well as the way they described the personal and professional impacts. Initially there were eight faculty members and seven student participants. One to two months into the research process, three of the faculty dropped out of the study citing time constraints as their reasons for leaving the study. One of these was a staff/faculty member who was leaving her position at Prescott College. The fourth faculty ultimately dropped out right before the end of the study. She participated in two calls; however, she did not complete the developmental coaching or any of the written reflections. She requested to drop out right before the end of the study because of her minimal participation and concern that this would negatively affect the results. Two faculty that chose to drop out were assessed at Achiever and two at Individualist.

When asked during the initial interview why they chose to participate, all four faculty spoke of wanting to support my research as a student in the program, and only one expressed interest in the focus of the study. In other words, in general the faculty did not have their own learning interests regarding adult development or these interests were secondary. The seven students all expressed an interest in adult development, in addition to wanting to support a fellow

student. The graduates wanted to stay in contact with Prescott College. Regarding the faculty members motivation for participating in the study, Stuart expressed the following:

In our case, the only main reason we are involved... I think this is an important realization for you as a researcher, is that we want to help you. The fact that we will/might help ourselves... is subordinate for us... as we don't have the time to improve... we only have the time to tread water. So, you should know that we want to support you. This is both a strength and weakness to your research and situation. (Stuart, written reflections, October, 2014)

As a whole, the students engaged more fully in the process. They attended the calls, completed the readings and assignments in between the calls, submitted written reflections, and responded in writing to each other's reflections. As a result of their engagement and interest, I added an additional group call, with a total of five hour-long group calls. Additionally the students engaged in a way that reflected their interest in the topic, posed more questions, and were more eager and willing to share their personal reflections with one another. Of the six written reflections requested from students, they submitted an average of five per person.

Two faculty participants expressed an interest in their learning and posed questions to the group more often. Most faculty members did not complete the readings or assignments during the action inquiry learning cycles, and on average they only submitted one of the six written reflections per person. More specifically, one of the faculty members (Stuart) submitted four reflections, Karl submitted two, and Samantha submitted one. They spoke of time constraints and institutional pressures, while at the same time they expressed valuing the conversation among themselves, something they rarely had the opportunity to do. All expressed an interest in continuing to meet to support each other professionally and to continue the professional development process.

In terms of developmental differences between the groups, Table 19 shows the distribution of developmental stages from the initial assessment for the students and the original

eight faculty. The four faculty who completed the study were originally assessed as two Individualists and two Strategists. Two students were originally assessed as Achiever, three as Individualist, one as Strategist, and one as Transpersonal.

Table 19

Distribution of Initial Developmental Stages for Students (including pilot study participants) and the Original Eight Faculty at Prescott College (N=20)

Developmental Stage	Students	% of Students (N=12)	Faculty	% of Faculty (N=8)
3.5 Achiever	2	29%	2	25%
4.0 Individualist	3	43%	4	50%
4.5 Strategist	1	14%	2	25%
5.0 Construct Aware	0	0%	-	-
5.5 Transpersonal	1	14%	-	-

There were significant differences in the degree of impacts that students and faculty described as a result of participating in the research. Table 20 shows that 83% of students described significant personal impacts, as compared to 67% of faculty. The personal impacts included greater self-understanding and self-acceptance, increased understanding of others, improved communication and relationship dynamics, greater perspective taking, empathy, and listening, and that the developmental assessment and coaching felt affirming and honoring. Table 20 also shows that 78% of students described significant professional impacts, as compared to 62% of faculty. This students described the following professional influences: how they approach mentoring, teaching, supervising, curriculum and project design, how they work

with colleagues, their understanding of different cultural and professional contexts, communication, decision making and how they approached conflict. The students also expressed that their understanding of adult development influenced their research design and analysis. Overall, the personal and professional impact of participating in the study was greater for students than for faculty.

Regarding a comparison of developmental changes for students and faculty, there was an overall increase of two and a half stages of development for students and two stages for faculty. Although there is a difference here, it is not significantly different between the groups. Table 20 shows the developmental changes for students and faculty from the pre and post developmental assessment.

Table 20

Developmental Changes for Students and Faculty from the Pre and Post Developmental Assessments

Participants	Role at Prescott College	Assessment 1	Assessment 2	Developmental Change	Overall Change for Students & Faculty
Luisa	Student	Achiever, 3.5	Achiever, 3.5	0	
Barney	Student	Achiever, 3.5	L. Strategist, 4.5	+ 1.25	
Helen	Student	Individualist, 4.0	Individualist, 4.0	0	
Vanessa	Student	Individualist, 4.0	Achiever, 3.5	- .5	+1.25 (2.5 stages)
Francesca	Student	Individualist, 4.0	L. Individualist, 4.0	+ .25	
Allison	Student	E. Strategist, 4.5	Strategist, 4.5	+ .25	
Michele	Student	Transpersonal, 5.5	Transpersonal, 5.5	0	
Samantha	Faculty	Individualist, 4.0	L. Strategist, 4.5	+ .75	
Stuart	Faculty	L. Individualist, 4.0	Strategist, 4.5	+ .25	+1 (2 stages)
Karl	Faculty	Strategist, 4.5	L. Strategist, 4.5	+ .25	

Jeff	Faculty	Strategist, 4.5	E. Strategist, 4.5	-.25
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Summary

Learning about development can be transformative developmentally, personally, and professionally. In terms of the developmental impact of the study, six of the 11 participants assessed at a later developmental stage in their second assessment, two participants' assessments showed more than one full stage of developmental growth, and two participants assessed at a half to one stage earlier developmentally. Regarding the personal impacts, all participants described some positive impact (eight out the 11 describe significant personal impact) in their personal lives including greater self-awareness and self-knowledge, increased compassion, understanding and acceptance of differences with others, communicating in ways that were developmentally responsive and aware, and more careful listening. In their professional lives, all participants described some positive impact (seven out of 11 describe significant professional impact) including that learning about development influenced their research design and analysis, mentorship, communication, teaching, and curriculum design. There were notable differences in the ways that participants experienced learning about adult development according to their developmental stages, and students as a whole engaged more fully in the action inquiry learning process and described greater degrees of both personal and professional impacts.

Finding Three

Applying a developmental perspective to the teaching, mentorship, and curriculum design of Prescott College's Ph.D. program may deepen the transformative impact of the program. There are four sub-findings in finding three. The first is that four of the original eight faculty were assessed at Individualist. This is consistent with an approximation of the program's center of gravity, which appeared to be Individualist in its design, culture, and facilitation, with some emergent Strategist capacities. The second is that seven of the eight faculty originally in the research sample lacked an awareness and understanding of constructive development theory prior to the research action inquiry process; therefore, it follows that the program has not been informed by a developmental perspective or design. Third, there were developmental differences in how students experience learning and transformation in the program. In general the student participants assessed at Achiever and Individualist described the program as significantly transformative; however, the Achiever participant spoke of her challenges in maintaining some of the learning with increasing distance from the program. Participants assessed at Strategist did not describe as much transformation and were critical of aspects of the program and the mentoring they received. Construct Aware and Transpersonal students spoke of transformation, but not necessarily as a result of the teaching, mentorship, or program design. The fourth sub-finding is that faculties' developmental stages influence how they teach, mentor, orient to sustainability, and design learning experiences. Faculty assessed at Achiever and Individualist are more likely to promote a particular worldview or values development and may be less likely to understand or effectively meet their students' developmental needs. Strategist faculty have greater capacities to understand their students' development and therefore are more likely to mentor in developmentally responsive ways. Learning about developmental mentoring is likely

to deepen their capacities to do so.

Faculty and Development

There are a total of nine core faculty teaching in the Ph.D. program. Of the original eight faculty who chose to participate in this study, six were Ph.D. faculty, one was a faculty for the Master of Arts program and the remaining participant was staff for Prescott College and taught in the Undergraduate and Master of Education program. Of these original eight faculty participants, two assessed at Achiever, four at Individualist and two at Strategist. Table 21 shows the distribution of developmental stages of the faculty in the research.

Table 21

Initial Developmental Assessments of Faculty Research Participants (N=8)

Developmental Stage	Faculty	Percentages
Achiever, 3.5	2	25%
Individualist, 4.0	4	50%
Strategist, 4.5	2	25%
Construct Aware, 5.0	0	0
Transpersonal, 5.5	0	0

Fifty percent of the original sample of faculty assessed at Individualist. This is notable because my experience of the Ph.D. curriculum is that it is largely Individualist in its orientation and offering, with some emergent Strategist capacities.

The 4.0 stage of development is shaped by an access to the early fourth person perspective awareness of social contexts, internally and externally. There is a deepening understanding of subjectivity: how subjectivity is shaped by the contexts with which humans identify (culture, family, religion, school etc.) and how it influences human capacities to be objective. With this understanding of subjectivity comes an interest in deconstruction and social

critique. This is a receptive phase of development with an emphasis on the present moment and an interest in seeking an authentic self. Individualists tend to eschew hierarchies, categorizations, and models. Once focused on the analytical mind, they are now interested in feelings and connection between the mind and body, and develop empathy for the well being of a wholeness larger than their own (Cook-Greuter, 2005; O'Fallon, 2010b, 2013).

Some of the patterns involving Individualist approaches to sustainability include a focus on multiple overlapping systems, an awareness in the social construction of reality, and a corresponding deconstruction. Individualists value pluralism and the relativity of ideas, beliefs, and knowledge. They can be critical and dismissive of economic and business approaches to sustainability work, or what they might consider less deep or anthropocentric approaches to sustainability. They value the intrinsic rights of all of life, including the planet as a whole. They are interested in identity development and an authentic self, separate from cultural expectations. They also tend to be interested in more qualitative and participatory research methods and can be skeptical and critical of more objective methods.

Conventional academic institutions are likely to be more Achiever in their orientation and offering, and a Ph.D. program with an Individualist orientation is a significant accomplishment and relative rarity in academia. Other research on adult development and higher education show a predominance of Expert and Achiever action-logics, as is found in the larger samples of the general population in the United States (Cook-Greuter, 1999). Prescott College's Ph.D. program appeared to represent a developmental leading edge of graduate study and sustainability education. The program is unique in its integration of economic and ecological sustainability, as well as social equity and bio-cultural and linguistic diversities. The pedagogy includes experiential, engaged, collaborative, participatory, transformative, and self-directed learning.

Aspects of the curriculum and program design that are reflective of Individualist, 4.0 stage of development include academic work that invites personal reflections and story telling such as the Ecological Self paper and the Wildest Dream assignment, a cohort model with an emphasis on community building, emergent design in courses with student designed and taught seminars, and faculty serving more as mentors or so-called “guides on the side,” rather than a more didactic, or teacher-directed approach. Additionally, there is an interest in experiential and transformative learning, postmodern social deconstructionist and pluralistic perspectives and analysis, inclusion of social and ecological systems in the orientation to sustainability, critique of the excesses of business and capitalism and of the Western approaches to education, and dualistic or more rational ways of knowing. Students’ work is posted on a digital forum with open feedback and discussions, there are self-written and faculty-written evaluations with no grades, and a valuing of more qualitative and participatory research methods. Sessions with faculty include checking in on a more personal level, open dialogues and discussions with light facilitation, and minimal direct teaching from faculty. Some of the potentially limiting aspects of the Individualist-oriented curriculum include a lack of a developmental perspective or approach to teaching and mentorship, lack of a meta-perspective on the field that could include an overview of the worldviews represented in the sustainability education field, skill development for integrating and working skillfully with different value systems, and a combination of more direct teaching by faculty and cohort facilitation, alongside the student empowerment approach to teaching, learning and community development.

Familiarity with Constructive Development Theory

Of the eight faculty in the original research sample, only one had any previous experience with constructive development theory. This is not surprising given that four of the eight faculty

assessed at Individualist, which is a receptive stage with an emphasis on present moment awareness, an exploration of inner voices and social contexts, and valuing of introspection and dialogue. There is a tendency to eschew hierarchies, categorizations and models (O'Fallon, 2013). Without a developmental understanding, there can be a greater tendency to unknowingly project one's own meaning-making structure, worldview, values, and developmental needs onto the students, and to not see where students are in their development and what their developmental needs might be. Also, there can be a tendency to promote a particular worldview or set of values, such as the ecological worldview that is so often promoted in the sustainability field. This might mean that the actual development, learning, and transformation that a student is experiencing may be overlooked or less valued. For instance, if a student were interested in environmental stewardship, this might be considered to be too anthropocentric and critiqued as such. Also, transformation is a developmental rather than an educational process, and students may not be ready for certain developmental changes promoted by a program, such as a move from Achiever to Individualist. Pressure to develop can be experienced as an over stretch. Students who are later developmentally may feel under-stretched, as is illustrated by some of the students' reflections from Strategist and later developmental stages. Faculty without a developmental perspective may feel that they have arrived developmentally, and may not engage as much in their own development, as well as recognize that some of their students may be later than they are developmentally. The above-mentioned tendencies are common in a culture that generally does not recognize or understand adult development. A general assumption is that somewhere around 25 years of age, people are essentially complete in their development, and if they do continue to develop it is a process of maturing. Adult developmental research offers a much more nuanced picture of how adults develop, and there are significant implications for

teaching and mentorship, as well as for supporting the continuing development of educators.

Developmental Differences in Students' Ph.D. Experience

There are developmental differences in how students experience learning and transformation in the program. In general the student participants assessed at Achiever and Individualist described the program as significantly transformative; however, the Achiever participant spoke of her challenges maintaining some of the learning. Participants assessed at Strategist did not describe as much transformation and were critical of aspects of the program. Construct Aware (participants in the pilot study) and Transpersonal students spoke of transformation, but only partially as a result of the teaching, mentorship, or program design. The following illustrates the relationship between a student's development and her or his experience in the program, and highlights a diversity of learning and developmental needs.

Achiever 3.5

The 3.5 stage of development is an action-oriented stage of development, and individuals operating out of this developmental phase tend to be highly focused on pursuing goals and visions through seeking results and effectiveness rather than efficiency. Achievers begin to appreciate complexity and multiple views, although they tend to be more single focused in their efforts to be effective and successful. They seek proactive ways around problems and seek feedback when it helps them improve or reach a goal. The developmental framework may be of interest in terms of their desire to get ahead and improve; however, they are likely to find the model complex and hard to understand, given that they do not yet have much access to the 4.0 awareness of social contexts, internally and externally, the 5.0 awareness of constructs, or the 6.0 awareness of the unity of opposites (O'Fallon, 2013).

A program more Individualist in its orientation and offering, like Prescott College's Ph.D.

program, is likely to offer a strong transformative pull for individuals operating from an Achiever action-logic. However, if the individual is not ready to transition from Achiever to Individualist, it could also be experienced as an over stretch. As Kegan says, these students might feel in over their heads (1994). It may also be challenging for individuals at the 3.5 stage of development to stabilize or sustain some of the learning outside of the context of the program. If an Achiever student is mentored by an Individualist or Strategist faculty without a developmental awareness, the student may not feel understood, seen and valued for who they are and/or their study interests and learning needs, and their growth and transformations may not be fully recognized.

In this study, only one student (Luisa) assessed at Achiever, 3.5 stage of development in both the pre and post assessments. According to the number of Achievers in the general adult populations (29.7% according to a 1999 general sample of US adults. Cook-Greuter), it is expected that the actual number of students in the Ph.D. program at this stage of meaning making is higher than was represented in this study sample. Luisa spoke of the transformative impact of the program:

The things that I have loved have been the changes. Part of it is the content of the program. Part of it is the act of being in a program that made fundamental life changes for me. Totally fundamental. I'm in such a completely different and happier place than I was when I entered the program and I'm not the only one. (July, 2013)

After writing a self-reflective paper assigned in the first semester titled "The Ecological Self," Luisa came to see how unsustainable her life was, and as a result made some significant changes:

[Prescott College] provided almost like a safe place to explore life in a different way. It takes you out of wherever you are... So, you are not thinking in the same kind of rut let's say for example...Some of the reflective exercises that we did – I tell you what it was that ecological self essay...First it was the hardest thing for me to do and then it was like I realized I cannot sustain where I am now... My ecological self belongs in a totally

different ecological place. I mean it was just that simple... It was huge. I think learning, also really questioning sustainability from not just the ecological, but from an economic standpoint. Seeing things - being in a place that was unsustainable on so many other levels apart from my own self. (July, 2013)

Luisa also spoke of a variety of challenges that she faced in the program:

I really did truly struggle with some of the topics which is fine because that's part of the learning process. There were times when I actually felt like I had no education whatsoever because all of my adult life all I have done is help other people look things up. So I don't have a deep understanding of any of these particular topics...but I got through it and I didn't fail at it... That was a challenge... It's easier to learn things when you can talk to people about it, than it is to learn things when you have to write a paper about it... I had never written a paper that anybody had asked me to insert myself into. (July, 2013)

In this quote, she spoke of the encouragement to include her personal voice in her academic writing, something she had not ever been asked to do before. She also reflected on her challenges to sustain some of the learning about the complex and integrative approach to sustainability that she learned about in the program:

I will admit that I still - it's almost like I'm aware of [sustainability] now, but decreasingly so the more I move out from those fundamental courses and the further I move out from talking to other people at Prescott...Because the people at Prescott are the people who are aware - are just aware in a different way. It's a funny kind of a difference... So, it's nice to be there and then come back and remember. (July, 2013)

In terms of how she experienced being mentored at Prescott College, she spoke of the challenges she faced to find a faculty member who could understand her, support her work, and guide her academically:

The mentoring from PC faculty was pretty much either nonexistent or not helpful... I'll be perfectly honest...I don't think he understood that what I was trying to do was an educational endeavor to be honest. I always got the impression that he saw technology and systems and didn't see anything else, so he thought he had nothing to offer...had a totally different agenda all the time...was like I think you should do climate change...I can be honest. I have never been so floored in my life except for the day he said that to me. Except for when...became part of the team...she was really supportive and answers questions and she's supportive in the direction that I want to go and helps redirect me if I

get too far afield. She reminds me you have to answer this sustainability question when you write the dissertation...until recently with the faculty on my committee, the mentoring that I received from Prescott was from the other students....So, I'd say that the really good mentoring I got was more support from other students. (July, 2013)

Luisa ultimately decided to focus her research on student success within the program, partly because of the challenges that she faced. Her research contributed to understanding student sustainability within a doctoral program, what success looked like to students, and the role of communities of practice. Although Luisa was only one example of how an Achiever might experience Prescott College's Ph.D. program, some of her experiences and challenges suggested that a developmental awareness among faculty and adaptability in the program design might better meet the needs of other Achiever students.

Individualist 4.0

The 4.0 stage of development is shaped by an access to the early fourth person perspective awareness of social contexts, internally and externally. These individuals recognize that this deepening understanding of subjectivity influences theirs and others' capacities to be objective, and with this comes an interest in deconstruction and social critique. This is a receptive stage with an emphasis on the present moment and introspection. With the challenge of prioritizing inner voices and exterior contexts, all ways become equally valid and relative. Individualists tend to distrust hierarchies, categorizations, and models. They are interested in feelings and connection between the mind and body, and they develop empathy for the well being of a wholeness larger than their own. They are interested in liberating humans from dogma, greed, and judgment, but may not see their own judgments of those who do not believe what they do (O'Fallon, 2013).

Because of the predominance of Individualist faculty teaching in the program (and likely

in the sustainability field in general), Prescott College's liberal and postmodern orientation, and the Ph.D. program's Individualist-oriented curriculum, it is likely that students making meaning at the 4.0, Individualist stage of development, or those transitioning into this stage, would both be attracted to the program and experience it as significantly transformative.

In this study, the three students who assessed at Individualist, all talked about the program as being significantly transformative. It also appeared from some of their reflections, that the program may have supported them to move from Achiever or later Achiever into Individualist. It is not possible to know this without a developmental assessment prior to their starting the program, but when these participants spoke of their original research interests and orientation to sustainability, their comments suggested more of an Achiever orientation, with a significant transformation over the course of the program. (There is more detail on this in finding one).

All three of the students spoke of the cohort approach as being significantly transformative:

Well I think the faculty and cohort model is incredibly strong. And I think the program itself is - you get as much from it as you are willing to put in, and in terms of transformation and self-change... I was in a place where I was really willing to put my entire self into the experience and so I think I got a lot out of it that way....Part of what made the Prescott doctoral program so powerful is that I felt very welcomed and encouraged and valued just by virtue of being a part of that community. (Francesca, July, 2013)

Francesca also spoke of the unique approach to sustainability that she discovered or created in the course of the program:

I think my approach has been to look within – I guess to find what my passion is and to find a way to...connect that with my research. What I realized over four years is that sustainability really can be so many different things. It can be creative, it can be artistic, it can be very science and quantitative based versus qualitative. And I think in giving myself permission to pursue creative approaches to my research was part of my path to self-sustainability and giving myself permission to pursue something that was important

to me. (July, 2013)

When asked about her experience in the program, Vanessa spoke of gaining confidence and the gratitude she feels for the support she received:

I think for me it's more the confidence and the gratitude. I certainly did not have a lot of confidence. Maybe I can almost say I was insecure when I first started to do this work. For one I'm not even sure that I was the one that was equipped to actually think I can participate in this and make a difference in a major way, but also just that not fully understanding how this academic journey fits very well into the thing that mattered to my heart. Which was the story of my upbringing and why poverty in my village or rather in Zimbabwe affected me the way that it does....I'm so grateful to have the opportunity to study this and to be surrounded by so many people that care enough about my questions. (July, 2013)

And when asked about the strengths of the program, Vanessa offered:

I'm sure most people would say the cohort aspect. When you just feel like you have brothers and sisters that are pushing you on, but also cradling you in - and I love it and I value it. I think also having a mentor who is right for me. Something that I really value. And I think I could not have gotten a better mentor.. because he has the right amount of patience to deal with a child like me. (July, 2013)

Helen spoke of the transformative impact of the program and its strengths in similar ways:

I can't tell you how gratified I feel after going through this experience because it really addresses questions I had....This couldn't have happened if I didn't have the two things. The community that cheered for me. That was there for me and that helped me in the beginning to sort of leap forward. And then touching base with myself and what I wanted to learn and what my lifelong questions were...they always said just follow your passion... trusting the organic process is one of the major learnings I took out from this program. And always says accept uncertainty without fear.... So I am really impressed with the program and I'm a big fan. (July, 2013)

Helen also spoke of the way that she was initially uncertain about the cohort approach and ultimately how this was one of the more transformative elements of the program:

When I joined I was a bit taken aback with the cohort model. Because I wasn't sure I was going to fit in. I'm an Egyptian and far away and all of this so I was hoping to find a program that would allow me to work with the professor's directly. Get what I want to get done and read what I have to do and what do I have to read and write and send

them...I was very happily surprised actually with how the cohort model triggered a lot of ideas and questions and exposure...and how we commented on each other's work...that also built my confidence...and also allowed me to broaden the scope. It was such a rich experience. (July, 2013)

In terms of the curriculum, these students spoke of other strength and influences:

So I think it was never explicitly even asked, is your life sustainable? - but there was an encouragement to include our own voice and there were readings that had to do with kind of individual connection maybe to place or to the natural world and that wasn't where I was starting from, because I was starting from kind of more of the environmental perspective, than ecopsychology. (Francesca, July, 2013)

And after I started working on my program of research I realized that there are so many different definitions of sustainability - the thing about the environment and sustaining our life on earth and sustaining earth and sustaining other than human creatures all of this was not found in my initial definition...and I shifted my question completely from the initial question I answered Prescott with, to what does sustainability mean in terms of diversity, differences, accepting differences, realizing diversity even?...One turning point for me was when I started reading about Egypt my country, from a sustainability perspective. From an ecological perspective, this ecological lens made a big difference in how I could understand or how could I ever understand sustainability....That first year in the program when I read all these things and I just joined the dots... I just could see immediately the culture of denial that is just denying all the adverse affects of modernization of Egypt, so that was an eye opener. (Helen, July, 2013)

In terms of the challenges they faced, Vanessa talked about her initial challenges

navigating the diversity of perspectives that faculty brought forward, more through mentoring than direct teaching:

I don't feel that I've received teaching in this program. I feel like it has been more mentoring. And the mentorship I received in my first year was - it was a bit shaky because we had three different professors with three very different views. And we were sort of all studying sustainability education but from different lenses. And while they were not teaching, because sometimes when you feel like someone is teaching you, you are like okay so I need to listen. But when they are mentoring you realize that you take what you need and you keep moving with it so you can continue to grow. (July, 2013)

The patterns in their reflections included being stretched initially by the diversity of perspectives in the program and the larger sustainability field, the mentorship approach of faculty rather than a more directive teaching role, the openness in the curriculum around course design, and the cohort approach. The aspects of the curriculum they all named as being transformative

were the cohort approach, the opportunity to explore their own passions and unique approaches to sustainability, the culture of care and support created by faculty and the cohort model, the interdisciplinary and integrative approach to sustainability, the inclusion of the personal voice in their writing, the self-designed courses, and the freedom to choose more participatory, creative, and qualitative research methods. They spoke of appreciating the role of faculty more as mentors than teachers, and they called for even more equality and inclusion of faculty voices on a more personal level. These patterns were reflective of the 4.0, Individualist stage of development in terms of valuing pluralism, equality, multiple perspectives; inclusion of self and self inquiry; integration of the ecological and systems lenses; post-conventional research methods; and valuing mentorship over more directive teaching. As they described it, the program was transformative for all three of these students. It appeared that it was a developmental match, as might be expected in an Individualist-oriented curriculum for students moving into or stabilizing this stage of development.

Strategist 4.5

Individuals enacting a mature fourth person perspective understand the influence of interior worldviews and exterior contexts on shaping perspectives and experience. They also prioritize and design contexts or containers in service of creating transformative change. This is, again, an action-oriented phase. This is the first stage in which individuals can see their own transformations through time and will naturally understand these changes without any understanding of developmental theory. They may become quite passionate about their own and others' development, and they want to take on any and all practices that might support it. Strategists may potentially be critical of programs or groups that are not transformative enough, lack depth as they perceive them, or are not reaching their potential. They begin to recognize

their own projections, seeing that what they judge others for (positive and negative) are qualities in their own being. This is seen after the fact through reflection, and supports their embracing of paradox. They tend to be committed to transdisciplinarity and to organizing and engaging multiple perspectives to propose solutions for complex problems (O'Fallon, 2013).

There was only one student in the study sample initially assessed at Strategist; however, to explore how Strategist students experience Prescott College's Ph.D. program, I interviewed one of the participants from the pilot study also assessed at Strategist. Assuming that Prescott College's Ph.D. program is primarily Individualist in its offering and that it lacks a developmental awareness or design, Strategists may feel less transformed by their experience and may be more critical of aspects of the program.

Katie, a participant in the pilot study who assessed at Strategist, reflected on her experience in the program. The following reflected some of what she appreciated about her experience:

What I got from the Prescott College Ph.D. program was encouragement and support. A sort of nurturing base that helped to bolster me when my confidence was low....I truly appreciated the way I was supported through the process....The greatest value for me was the ability to be self-directed with my research and to do something that was applied. Prescott College embraces action-based research, which I likely would have had to justify at most other institutions. (March, 2014)

In terms of the challenges she faced, Katie spoke of ways the program did not meet some of her learning needs, did not always stretch her, or did not provide new ways of thinking about her work and/or pathways for integrating new perspectives:

At times I have been frustrated that I spent so much money on a degree that gave me so little substance. I took additional coursework elsewhere, which gave me training in research methods. I sought out external committee members who provided connection to literature, ideas, and thinking beyond what I received at Prescott College. I learned little in the first year's coursework and both the content and discussion felt basic and redundant to me....I like the cohort model, although was not particularly inspired or stretched by my peers, save one. I was, frankly, often frustrated by my peers and some of the faculty in the College, and this isn't a way I feel in my home town and home institution. I felt people were somewhat overly self-focused on their own feelings and

process to the expense of the larger world...I don't think any of our group discussions were particularly well facilitated, or at least not in ways that sparked my interest and investment. This was disappointing to me because I feel I have a lot to gain in watching and learning from how others facilitate group work. (March, 2014)

Katie also spoke about her experience of the mentorship she received:

I switched around core faculty members several times. One offered more substance, but I had a hard time with our communication. He's quite a talker and didn't feel I had space to maneuver while trying to sort out my own path....I switched to [another], and felt on the one hand he offered good 'rigor' but was also stuck in his own, conservatives-are-bad-people mentality, which was antithetical to what I was trying to do through my research: open our minds to the perspectives of those who disagree with us, and figure out how to create more inclusive solutions. (March, 2014)

Katie's experiences were reflective of some of the patterns one might expect from a Strategist student in the context of a more Individualist program. She sought more integrative perspectives and methods in her efforts to seek new ways of thinking, and she sought solutions that transcend the more commonly polarized arguments that can be found, for instance, between environmentalists and business leaders or progressive and conservative political debates. While she felt supported to pursue her own areas of interest, she did not feel sufficiently challenged or stretched within the context of the program. This is not to suggest that the program does not or cannot offer this to students, but that it may be less likely to meet the needs of a Strategist student. Also, Strategist students, more likely to be action-oriented and passionate about transformative change, may also be more likely to be critical of a program that is not "transformative" enough.

Allison, the participant in the study who assessed at Strategist, also reflected on her experiences in the Ph.D. program. She spoke of what she appreciated about it:

I guess coming to Prescott is a little bit like coming home again or going back in time in a way...I've loved many things. Getting to know the members of my cohort of course and the other cohorts. The opportunity to think more in depth about things that I've thought about before, but not in as much depth...The opportunity to learn more about being more considerate and complete in work and basing things on evidence and research to

strengthen arguments, and support for my views, and to consider other views too. So to be more maybe balanced in my thinking. (July 2013)

Allison's cohort, almost double the size of previous cohorts, had some particularly challenging dynamics in their first year. She spoke of this in the following:

I was disappointed when my cohort was so frustrated with the way the program was organized that they felt a need to "occupy" the schedule. I felt that we all had a responsibility and an opportunity to make suggestions for changes and that the faculty were open to that. My interpretation was that most of the students were used to a different kind of teaching and learning environment and that their expectations were not being met. In retrospect, I wish that I had spoken up more and tried to find a way to be more inclusive with the faculty in the process of suggesting and making changes. (July 2013)

Allison spoke of wishing the curriculum was more tailored to individual or small group interests and learning needs to allow for more depth or focus:

The times in person have been good although I think sometimes we could be more tailored. Because there's such a diverse group of people with diverse interests, that's a huge strength of the program because it's an umbrella that contains all of us. On the other hand sometimes I think we could get small groups that have similar interests together we could go a little further. It's always that challenge of trying to be inclusive and at the same time focus on specific needs and interests...The students have such a wide variety of baseline and needs in these areas that we don't all have the same needs. (July 2013)
Allison reflected on the mentoring she received:

Mostly good. Sometimes too generic, hard to find my specific niche and relevance. Not always tailored for the term and the student's needs. I think the faculty really have too many students to provide the individual attention the students seem to expect. I feel very lucky that my advisor is often in my region and that we have met a few times a year outside of Prescott and on the phone. We also have similar interests and are well matched. (July 2013)

Suggestions she had for the program:

I think some more tailoring to different learning styles, needs assessments, etc, could help. Some work on event planning, agendas, small group work, etc., i.e. professional development opportunities for faculty to learn new instructional techniques, androgogy, group process, etc, not only focused on content, but on process and designing and evaluating good learning experiences...I think facilitation training and team building, group process, partnership skills, crucial conversations, etc are all very valuable skills for sustainability educators, especially since we will most likely be encountering and working with folks with very different values and backgrounds that we have...Sometimes there is a bit of a smugness held by those of us who "know" we are "right" (I feel this way about Unitarians at times, too, and I am one). What we fail to notice is that we've

become just as judgmental and close-minded as those we judge as being "wrong" and "biased"...Also, learning the language of others we need to work with. What's that platinum rule? Treat others as they would like to be treated, which is not necessarily how you would like to be treated. (July 2013)

Allison's reflections were also indicative of some of the patterns of a Strategist's meaning making. Specifically her suggestions for skill and capacity building when working with people with different values and backgrounds reflect Strategists' understanding of worldview differences and the importance of working well with these differences. Additionally her suggestions for needs assessments and tailoring the curriculum more for different learning needs and depth of learning speak of Strategists' desire for transformation. While Allison was generally appreciative of the program, neither Allison nor Katie spoke of the same degree of transformation as the Individualist students. With stronger Strategist mentoring and program design, it is possible that the program could have had a more significant transformative impact for these students.

Transpersonal 5.5

With the maturing of the fifth person perspective, an active stage of development, there is an awareness of constructs. Transpersonal individuals begin to prioritize, create, morph, and change these constructs to serve evolutionary unfolding. This can manifest in building their own complex creations, combining ideas and constructs into new forms in a particular area of interest. They are likely to see connections and consciously constructed meta-perspectives where others do not, and they have greater flexibility and reflexiveness. Additionally, individuals operating from this stage can begin to experience a peaceful letting go into a Transpersonal self. They have a high tolerance for things as they are, and their experience of emptiness can bring profound acceptance, feelings of oneness, and sacredness. Their compassion for others can be wide and deep. They have significant capacities to redefine, reframe, construct, and reconstruct,

and to see unusual connections between what others might see as disparate fields or endeavors.

This stage has the capacity to engage consciously with one's own internal development, and

these individuals are likely to be able to cultivate their own transformation (O'Fallon, 2013).

Michele, the only student participant assessed at this stage reflected on her experiences within the program:

I feel so blessed and fortunate to have landed at Prescott. It's worked out a lot better than I thought. I like to say - I have this sense of myself - my people, the people that I am one of, we would not tend to go to a doctoral program... there is a certain amount of sacrifice involved and walking inside of the patriarchal, world domination construct around privileging, the written word and the authority of those who have written down words down on a piece of paper before...I feel like I have been called to start a graduate school and so to do this stuff I need to get a Ph.D....also I have a hungry brain and a mind that's very eager. So it's ended up being really delightful...I was grateful and I felt very validated and like where else could I be given permission to have a class on regenerative archeo-mythology, as well as a class on transdisciplinary creativity...the opportunities have been very bountiful. (July, 2013)

She also reflected on some of the challenges she faced with her cohort, with some of the faculty, and with her dissertation committee:

I've been disappointed sometimes that the other people in the cohort - in my particular cohort that some of them are pretty disengaged, I just have been pretty disappointed that I didn't have that tight bonding - I'm a social learner so I'm really into that and I have not always been met with that. Now I am more accepting of it....The program has a certain kind of set of archetypes that they are trying to recruit for and I don't know if their recruiting matches the program design totally...I know there are certain things about different faculty that fundamentally in some cases for me - they should not be teaching this kind of program...They are not well positioned to be able to nurture the kinds of students that this program is bringing. Part of their challenge is how to nurture students who are processing in ways that are different or "beyond" where they are, or something like that...I feel like I am writing the dissertation for my committee functionally. Those are probably the only human beings who will ever read it... they have very different processing styles than I do and it's been just enormously frustrating and delightful to try to - I am a poet. That's my basic way of practicing...It's effective and it's very nonlinear. My committee at this point - I've taken all the poetry out of the dissertation because in order to include other ways of knowing takes so much work and it's so misunderstood it seems like and it's just like missing the mark over and over again that I at this point just pulled it all out. (July 2013)

It was evident from Michelle's reflections that she has been "delighted" by many aspects

of the program, in particular the opportunity to integrate disparate fields of study and practice. She also struggled with, and was delighted by her work with her committee. She worked on being understood and valued for her ways of processing and writing, some of which she ultimately had to remove from her dissertation. This suggested that there were aspects of her work that simply were not understood or seen as relevant within the context of a dissertation. This was not surprising given the rarity of this stage of development and the likelihood that no one else on her committee made meaning in the same ways nor was able to understand aspects of her work.

Faculty's Developmental Stage and the Influence on Teaching and Mentorship

A faculty member's developmental stage affects how he or she teaches, mentors, orients to sustainability, and designs learning experiences. There are some subtle yet significant differences in the way the Individualist and Strategist faculty teach and mentor their students.

Individualist 4.0

Samantha, a core faculty member in Prescott College's Ph.D. program, defined sustainability in the following way: "Human and the ecosystem wellbeing are, in terms of sustainability, something that needs to be maintained without compromising the ecosystem or future generations of humans." She made frequent reference to the ecological foundation of everything and spoke of the importance of returning to the ecological "well" to seek a "symbiosis of healthy interrelationships among the community of all beings." In discussing sustainability, she critiqued anthropocentric, shallow approaches to sustainability, and the "Cartesian approach of dividing things into smaller and smaller bits." She made reference to the hundreds of definitions of sustainability. Samantha went on to say that "human and ecosystem well being are absolutely, inexorably interdependent." She integrated systems awareness into

her definition (social, political, economic, cultural, spiritual) and offered a vision of education that included all of these systems in a way that is “holistic, eco-judicial, culturally relevant, intergenerational, and self renewing.”

In discussing her approaches to graduate sustainability education, she gave an example of how she and others redesigned the Institutional Review Board process so that it reflected her values as a sustainability educator:

We have an institutional review board which traditionally is very traditional and it tends to be modeled on a punitive based model so there is a right answer and there is a wrong answer, you do it and you don't do it. And what we've done is we tried to restructure everything so it's built on the idea of complexity and built on the idea of eco fractals. So that there is regenerativity, there is a regenerative nature to the whole process. And in terms of that that means that people that participate in the process also are recreating the process as they go so we change things as people go through the system and we have input and we see what they are doing. (August, 2013)

In terms of her work with students, Samantha articulated a vision of working individually with students, using a “strength to strength” mentoring approach, getting to know student's interests and using emergent design in her classes so that a course is responsive to different ways of knowing, areas of interest, and expertise. She talked about encouraging students to “hollow themselves out,” to dig for deeper meaning. She encourages analysis and she orients toward this goal using a Socratic method of posing questions and “nudging” students, rather than pushing them too far, towards “solving problems in a way that's in a symbiotic relationship with other living things.”

I'm more into emergence of design than using a pattern and then overlaying that with an organic system meaning a human. So I'm more interested in the emergent design. Consequently, I want to hear their story...So learning theories? Yeah I'm aware of that and looking at Myers-Briggs I am aware of that too. But first listening in other ways because people are more complex than sort of the eight models of or nine now of Howard Gardner's the way you divide up the way people learn. (August, 2013)

Samantha offered an example of what she meant by having students dig deeper, examine

their assumptions and beliefs, and honor the different ways of knowing:

Well so my particular view of this has to do with the idea of complexity and looking at things from that point of view. So it means that to do that you have to challenge your ideas about economics and what that means. You have to challenge your ideas about the simplicity of the triple bottom line. That's a good step in the right direction, but it's still bringing with it the seeds of the same old paradigm. You have these pieces and you put them together and one of those pieces is economics and one of the pieces of economics is the capitalistic model...all that sort of stuff. (August, 2013)

In terms of the Ph.D. program, Samantha wanted to see more space in the curriculum, more experiential learning, emergent design, and opportunities to practice research throughout the program:

First of all I should say that in the more than human natural world there are some species that do really well in a crowded situation and there are some species that need a lot of space...To think about that in terms of the Ph.D. students I think of that first year in the program. I think that perhaps there needs to be more space around the learning. Because sometimes I feel like that we are drowning students in that first year...I would love to see a little more space around things...I would love to see more time for an experiential piece. (August, 2013)

Samantha also shared her thoughts about working with students who struggle in the program:

These students typically struggle with the Prescott College model of student self-direction and scholarly empowerment. As the facilitator for these students' learning, I try to honor their need for externally provided structure, provide opportunities for them to stretch toward a more thoughtful and nuanced consideration of "reality," and (if possible) nudge them toward self-actualization in a collaborative, community-based way. (August, 2013)

Some of the Individualist patterns and capacities reflected in Samantha's approaches to sustainability, program design, teaching, and mentoring were the recognition of multiple overlapping systems, the value and importance of pluralism –recognizing the multiple ways of knowing (as well as defining sustainability) – and therefore the importance of individually-tailored mentoring and emergent course design. She reflected the context-aware and socially constructed nature of reality through her critique of capitalism, Cartesian models of education,

and the importance of paying attention to power differentials between faculty and students. Her concerns about anthropocentrism and interest in building an ecological foundation of understanding reflected the scope of her care and ethics that extended to include all of sentient life and a planet-centric perspective. Her strength-to-strength and Socratic mentoring approaches reflected her fundamental respect of her students' uniqueness and their particular life journeys. Samantha was also a strong advocate for an ecological worldview or way of being, and a self-directed, collaborative and self-actualizing approach to teaching and learning.

Faculty member Stuart, also initially assessed as Individualist, defined sustainability as "our capacity to maintain the status quo over time." However, he works more with "regenerative design as opposed to simply sustainability...the notion that we could make it better. That we can restore things."

In his approach to teaching, Stuart talked about significantly challenging students and providing support inside and outside class to help students succeed. In interviews he was self-reflective about his approaches to teaching and mentoring, and he critically questioned aspects of his practices. His teaching practices appeared to be somewhat paradoxical, in that the language he used to describe himself suggested a more critical and less encouraging or flexible approach to teaching. However, from the feedback he receives and listening to the subtleties of the way he talked about his teaching, the ultimate outcome appeared to be the opposite – that Stuart is provocative and challenging as a teacher, and he is highly supportive, going to great lengths to ensure a student's success, respecting students, and engaging their differing perspectives.

I seem to be willing to allow some students to fail in order to get the good ones mobilized... meaning I teach to the top of the class (i.e., those most ready to move forwards)... even to the expense of the others. Not sure that's a good idea... I'm experiencing some angst about this...I never thought to reduce the expectations of the class or educational process. Looking back at this moment, knowing the success I have had, I am wondering how many students I left behind in that process unnecessarily...I am

not very sophisticated about this. I kind of am who I am and that's who I am. And there's very little performance... There is an authenticity to what I do and say and how I mentor and that is not for everybody... I think I should be more overtly supportive.... And like I've said for those who can stomach this I've had just tremendously positive feedback over the years of "Wow it sure was tough at first, but then it got great!.... I'm assuming a developmental level on the part of the student that they can handle that kind of feedback. If they know that it is coming from someone who is spending my semester trying to help them get better and really in a devoted sort of way. (August, 2013)

Stuart's reflections suggest that he was transitioning from Individualist to Strategist, as reflected in his second assessment. This was evident in the ways that he was aware of his own projections and of not seeing his students' developmental needs (In other words, he was beginning to consider this.). Also, he appeared better able to integrate support and challenge as well as teaching and mentorship, rather than simply one or the other. However, he still talked about "converting" students to an ecological perspective, and he expected a particular developmental move or transformation, more typical of Individualists, although he was aware of and careful to reveal his biases.

Strategist 4.5

The two faculty members initially assessed at Strategist shared their approaches to teaching, mentoring students, and sustainability education. Core faculty Jeff shared his vision for sustainability education and Prescott College's Ph.D. program in a recent essay:

The program focuses not only on economic and ecological sustainability but also on social equity as well as bio-cultural and linguistic diversities. First, I am convinced that we have to shift from educating "about" and "for" sustainability to education "as" sustainability. While education "about" and "for" sustainability end up cautioning and teaching students: "why and how to do no harm or do less harm;" we take significant steps deeper. We teach: "why and how to do good and be beneficial." Second, in order to enable them to imagine, design and create a resilient and an abundant world, I tend to push students away from "ideologies that blind" to "seeking ideas that work." Third, I have also come to conclude that it helps to move away from discursive analysis of "systems of problems" (often leading to paralysis) to find designs that seek "systems of solutions." Fourth, it is equally important to move away from banking on unitary and universal knowledge to seeking and celebrating pluriversity of traditions of knowledge. I cover these under the banner of bio-cultural as well as linguistic diversities. (April, 2014)

In teaching and mentoring, Jeff shared more about his vision and intention in the first interview:

I always respect each individual's path to their own destination you see... We cannot tell people how to have their journey. It's carved out of one journey... And so my student advising I am pretty happy about... how each of you despite our limitation of what we give you, that each of you have the resiliency to make it pretty good.... So that is the kind of change, evolution that I like to see among my students and among many of my advisees I have seen that taking place... If someone has a very strong idea I have been able to tickle that idea a little bit and say can we broaden it a little bit and see what other options there might be rather than just falling into the same concept?... At least recognize that what you are thinking has five different ways of thinking about it. You can choose one of them but realize that you also need to know that there are four other options; right?... That is what I do as an educator. (August, 2013)

In these two quotes, Jeff reflected some of his Strategist capacities and inclinations. He encouraged being for something, not simply against something, and he sought “ideas that work” rather than ideologies that may limit. This way of thinking is sometimes referred to as reconstructive rather than deconstructive postmodernism. Jeff was also learning to inquire and listen more deeply to his students' interiors, beliefs, and values, as was included in finding two. He spoke of this as something he was still learning to practice, as he recognized the role it plays in students' learning. He also attempted to both honor a student's journey and sought to deepen inquiry by, as he said, “tickling” their thinking.

Karl, the other core faculty assessed at Strategist, reflected on the Ph.D. program and its potentially transformative impact on students:

Well I don't think we can do any wrong in the Ph.D. program in that students come in with their own background and perspectives and visions and ways of looking at and interacting within their world, and that whole idea of bringing such diverse backgrounds together to create a mixing pot as it were. That is what the universe is about. It's chaotic and it swings in different directions.... What are the mental models that we come in with and use to find our place in the world and how can they be challenged from a variety of different perspectives.... And through the course of this exposure and exploration most people are challenged in their personal perceptions and belief systems and frequently go through some form of transition or transformation in how they are approaching the major

issues in their lives and future career directions and that's what begins to take shape within the structure of the Ph.D. program....This whole process is tremendously exciting to witness and to try to support and urge and ask questions that lead people to look at what it is that they really want in their lives. (August, 2013)

Karl also described his approach to teaching and mentorship. He discussed the importance of faculty being aware of their own developmental journeys and of supporting students in individual and very personalized ways of knowing:

I think it's important for anyone who serves in a teaching or mentoring role to have a good sense of one's own life transitions....The Ph.D.. program is more of a passion for me in terms of working with individual students to really find out who they are and what they want and how to guide people along this path and you know ask the questions and help people to really reflect on where they are heading in their lives and what fits for them in terms of the actual study and course work and research that they are doing....Each person's program is tailored to that person, designed by that person with feedback, to help them to realize and hopefully come to breakthroughs or transition points or moments of transformative awareness where suddenly they see their purpose in the larger framework and their role as something that reaches beyond themselves. (August, 2013)

Karl also reflected on the importance of understanding where students are coming from:

One of the dangers is thinking that other individuals (or groups) are on the same wavelength. I have had individuals rebel against some of the ideals and processes I have sought to introduce, leaving programs and/or challenging the goals and values I have espoused. At one point, I would dismiss these responses or internalize them, thinking that I had screwed up in some way. Which I had in some cases (most?). Usually it meant that I assumed another was in the same place that I was and would see events or processes through my lens and my priorities. I learned the hard way that this was not the case and that I had to be more sensitive to and listening to where others were coming from and what their view of a situation was...This has been a major learning of mine over the last few decades. (August, 2013)

Karl's and Jeff's descriptions of the program and their approaches to sustainability, teaching, and mentorship were reflective of Strategist capacities and tendencies. They both spoke of the dynamic and complex systems approach to education and sustainability. They referred to integrating interiors and exteriors in their work with students and their visions for the impact of the program. They both articulated the principles that guide their teaching, with

outcomes particular to an individual's learning and life journey, while encouraging students to expand and deepen their perspectives on their research and reach for more transformative and evolutionary outcomes. Karl, more so than the other faculty, spoke of paying attention to students' development or their interiors in discerning what might support and challenge them in their learning journey.

Summary

Integrating a developmental awareness into the teaching, mentorship, and curriculum design of Prescott College's Ph.D. program may deepen the transformative impact of the program. Doing so is more likely to support the learning and transformation of students across the development stages. It is also likely to support the development of the program and the faculty members themselves and may contribute to the further evolution of the sustainability education field. The implications of the finding and recommendations for further research are discussed in Chapter 6.

Finding Four

The language and metaphors used to convey adult development may contribute to some challenges people have in learning about a developmental perspective, and teaching about adult development is likely to be more effective when it is done in a developmentally responsive. All participants in the study were challenged by or critical of constructive development theory in some consistent ways, although to different degrees. There were also developmental differences in the their challenges or critiques of learning about adult development. Some challenges the participants named included use of language, choice of metaphors (i.e. stages), the hierarchical dimensions of the models, categorization, cultural bias, and the influence of business- and leadership-oriented language from the research and application in those fields.

The participants who struggled most with the model and perspective were the students Barney and Michele, and faculty participants Samantha and Stuart. Paradoxically, Samantha’s, Stuart’s, and Barney’s pre and post developmental assessments showed the greatest developmental change or growth. Michele, assessed at Transpersonal, expressed some serious concerns about the model and spoke of some significant personal and professional impacts. Table 22 offers an overview of the challenges or critiques participants named in learning about adult development.

Table 22

The Challenges/Critiques Participants Named in Learning about Adult Development

Participants	Complicated, complex	Hard to Apply	Language	Hierarchy	Categorizing	Linear and static	Cultural Bias	Limited time/missed calls etc.	Assessment/ coaching call
Luisa	x	x						x	x
Helen						x			
Vanessa	x								
Francesca	x							x	
Stuart				x	x		x	x	
Samantha			x	x	x	x	x	x	

Allison									
Karl	x	x							
Jeff			x					x	
Barney	x	x	x	x	x	x	x	x	x
Michele			x	x	x	x	x	x	x
Totals	5	3	4	4	4	4	5	4	3

Developmental Differences

As predicted by developmental research, there were significant developmental differences to the struggles and critiques participants had about adult development. However, there were also some commonalities to participants' concerns and critiques that offer valuable feedback and insights for developmental theorists and practitioners.

Achiever 3.5

Luisa, a student participant assessed at Achiever, speaks of her desire to be later developmentally, even as she found her assessment to be accurate:

I can tell you that initially when I first got the results back I didn't quite understand that it's a - not so much a linear continuum – it's something that you kind of move back and forth in terms of the developmental stages. It's not step 1, step 2, step 3. I was happy but then I was also, you always want to do better. You always want to score higher on a test kind of thing. So it took a little while to get over that idea, even though it had nothing to do with what the report said. Because the report is pretty accurate actually. (March, 2014)

She also spoke of the challenges of making sense of the material and learning to apply it to her own contexts:

This has been a difficult exercise for me for a few reasons, but the main two are that 1) I did not have the time available that I thought I would in order to be a good participant and that 2) I am actually having a very hard time mapping the readings and examples to my own situation. (March, 2014)

Luisa reflected some Achiever patterns in her struggle to make sense of a developmental perspective. She found the material complex, which might be expected given that the

constructive development perspective emerges from later stages of development. It includes an awareness of interior contexts (mature fourth person perspective) and an awareness of the constructs that shape human understanding and experience of the world (fifth person perspective), neither of which an Achiever has easy access to. However, Luisa felt her assessment was accurate, able to make some initial applications to her work as a supervisor, and aware of her desire to be later developmentally, which was reflective of an Achiever's achievement or goal orientation.

Individualist 4.0 Stage

The student participants assessed at Individualist initially spoke of the complexity of the material or their struggles to understand it, as well as concerns they had about the linearity and hierarchical nature of the model. As a whole, however, they appreciated learning about themselves and others, engaging with their own self-development and finding their way through the challenges. Francesca said the following in the initial interview: "The term of self-development sounds very clinical to me." Vanessa also spoke about her initial challenges with the complexity of the material and how she worked with it:

A good number of the texts at least from the beginning...they're always a little over my head, but I think what has been nice with the way that you have done it is that I can just find myself in all of that vastness and it's okay to dwell on just what speaks to me.
(March, 2014)

Vanessa's quote illustrated the Individualist orientation towards identity development and discovering their authentic self. She and Helen spoke of finding the material complex, yet Vanessa chose to ignore the complexity and focused on learning about herself through the process.

Helen spoke of being troubled by her initial perceptions of the linearity of the model. However, she came to understand that development is more wave-like than linear and that just as

the assessments reflect a range of responses, she understood that people move through and draw on a variety of meaning-making structures throughout a particular day:

I had difficulty with the different levels of adult development...Although every time I feel that you answered my questions in a good way...you answered that it's not that linear...what I ended up thinking is that they can be overlapping and we can go through different stages every day. We may be developed to that extent or to that level in a situation, but in a different situation we would be exhibiting features of a different level...I gave it that interpretation to be able to work with it and accept it and just be able to work with it. But otherwise...I related really well to it. (March, 2014)

The faculty initially assessed at Individualist expressed many concerns about the developmental perspective and critiqued many aspects of the approach. Samantha clearly expressed her initial reservations about the linear, hierarchical, anthropocentric, and culturally myopic nature of the perspective. She also talked about her reactions to models in general, which she felt offer a “still shot” of a much more complex and dynamic reality. Finally, she expressed her concerns that the perspective does not value or fundamentally respect all of the stages of development, nor that those stages are all critical for the functioning of life and society.

Initially (and reactively), I suspected that this approach was just another linear, hierarchical way to deconstruct human relationship (much like the Myers-Briggs inventory). The integral approach felt highly contrived, anthropocentric, and even culturally myopic. The ontological premise undergirding this idea of a developmental lens appeared to be based on a Cartesian, deconstructionist Weltanschauung. In short, I could see its limitations, but was reticent to consider its positive and practical applications...I have a little bit of an allergic reaction to the term model - model meaning that you've just taken a still shot of something and when you are looking at an ecological system it is a moving, changing piece and it's not a still shot. So when there's a model and especially a copyrighted model and so now we're getting into the worst of the worst. (Written reflections, December, 2013)

In the following quote Samantha expressed her pluralistic values and her critique of hierarchical perspectives:

In terms of looking at it from this construct you can see how if you took and ran a parallel track between this human construct – about developmental models - and what that looked like in an ecological sense you could say, check this out we need different levels (like in the developmental model) happening all the time. If we all ran around and we were at the

top level of model it's like God help us - whose going to change the flat tire? You've got to have that and seeing the value in all those things...So, I just don't think it's that simplistic in my mind...So that's where the hierarchal thing is a little problematic for me. We actually need that. That's part of the vibrancy. (March, 2014)

Stuart expressed some similar perceptions and concerns about the hierarchical nature, categorization, and cultural bias:

I note that the instrument is in need of updating, and it has several weaknesses in that it creates (inadvertently or otherwise) some dissonance. I noted how, for example, it would likely place many of the indigenous ways of knowing with which I am somewhat (professionally) familiar at a lower hierarchical level and yet those precise ways of knowing are highly adaptable for these people who have mastered how to survive on their own in complex and unforgiving environments...I also noted that the instrument is biased against the positivistic approach to discovering/knowing and, yet, the strongest critiques of the positivistic approach come from those who study humans and humanity... I found elements of your instrument which seemed to not fully understand this nuanced appreciation for the strengths/weaknesses of the various approaches to discovering and knowing. If true, that is a weakness. (Workshop reflections, September, 2013)

Samantha's and Stuart's critiques of adult development reflected Individualists' value of pluralism, their dislike of hierarchies and categorizations, and their awareness of social contexts and desire not to judge one as being more important than another.

Strategist 4.5

Allison, a student participant, was not significantly challenged by or critical of adult development; however, she did speak of the effort it took to learn the material and some of the language in the field:

In terms of getting my head around the information I think some of it at first was - I did struggle a little bit coming to an understanding of some of the terms and getting familiar with the language of the field. That's why doing more research that's related to my own field makes it easier in some ways. On the other hand having had some background in education theory and child development theory and that kind of thing I think helped me grasp it a little bit easier. (March, 2014)

Faculty participant Jeff spoke of his difficulty with the term "development:

Well first of all as you know my relationship with the word "development" and not the

child development, but the very word development, develop has been very problematic because that is what I was studying at Stanford called development studies you see. I was supposed to be the development educator - a champion of development you know that. So in that sense I would say put me in the ambivalent category. I don't know for sure whether the word development captures what happens to people like you and me?
(August, 2013)

Overall, the participants assessed at Strategist did not speak of many challenges with adult development, except Jeff's reflections on the term "development" itself and its negative association with international development. Given that Strategists can see their own transformations through time, and will naturally understand this transformative change without any understanding of developmental theory, it was not surprising that they did not struggle with the learning experience or the perspectives.

Barney, a student participant, initially assessed at Achiever and then at Strategist in the second assessment. My interpretation of Barney's reflections and participation in the action inquiry process was that he was at least Strategist, and possibly even Construct Aware from the beginning of the study, but somehow he did not or was not able to express himself fully when he first took the assessment. He also took over five hours to complete the second assessment and only 15 minutes the first time. Barney was deeply engaged in the action inquiry process, and he struggled significantly, more than any other participant, to make meaning of and find value in constructive development theory. He felt that the models of which he makes use – chakra systems and Jungian typologies – serve him better in teaching music, and that the ego development models are more likely to alienate and limit human understanding and experience of others:

You are going to alienate people with this. There is a whole other culture where that is going to really not work. I've been involved and that is my assessment...I looked at the material itself divorced from any presentation on your part and I made an assessment. And it could be that my own lens which is based on my own experiences and stuff is faulty there but that's how it looks....I realized for me that the nine stage model feels

foreign because I'm habituated to Carl Jung's idea of gradual individuation and to a psychic healing perspective of progressive increased perception over time or over lifetimes. I want to assist you fully in this research, so I am trying on the new set of conceptual clothes that you've offered me. I feel slow and stuck, but I'm in there! (March, 2014)

Barney has a professional background in finance. Reading articles about the application of adult development theory to business leadership development helped him to connect with the material; however, he assumed that the model was only applied or relevant to business settings:

It was slow going. It was only after you referred me to some books that I actually understood where the model was being used and why the categories were named the way they were. For example, the order of them from Diplomat and Achiever and all that didn't make sense to me until I learned that there was a history behind it and at first there were three levels and it expanded to four and five and so on. So that even though it may have seemed counterintuitive as a whole if you take it from a historical point of view then it makes sense just as much of a music notation seems counterintuitive because it's that way and it grew that way until people got used to it. (March, 2014)

Overall, Barney spoke of preferring to work intuitively with students, to sense their emotional, mental and spiritual needs, and to avoid any kind of categorizations or assumptions about them. In a recent reflection he quoted a friend who said, "As soon as you make an assumption, you end the relationship." He elaborated on this in the following:

I have started thinking that models of development are assumptions. Even my old tried and true ones are assumptions that blind me to all that a person might be showing and telling me. I am ending relationships and then restarting them, when I manage to let go of models and assumptions. It further occurs to me that self-assessments are assumptions that one levies upon oneself. Here, too, I prevent myself from having a relationship with the emerging self because of assumptions and assessments I make. (Written reflections, April 2014)

Barney's reflections suggested more of a receptive and integrative developmental stage. These stages occur at the beginning of a new person perspective (such as early fourth person for Individualist or early fifth person for Construct Aware). Individuals moving into these stages can be awash in new perspectives and awareness, prefer an in-the-moment kind of experience, exploring their new awareness, and they are not able or interested in categorizing or prioritizing

these perspectives. From additional conversations with Barney, I also sensed a causal awareness and practice in his way of teaching and mentoring others. He spoke of receiving direction from a self beyond the self through dreams and directly received communication or insights about being and doing. As has been discussed previously, although individuals tend to have a center of gravity, a particular stage from which they are more likely to make meaning, they also have access to a range of stages of development, including the stages earlier and later than their current stage of development. Additionally, the assessments are not always accurate, and individuals assessed at Construct Aware can have a particularly fluid sense of self and self-expression, so they sometimes assess at earlier stages of development. Barney spoke of inhabiting his eighth grade self when teaching an eighth grade student, and his executive self when interacting with business executives and so forth. This was reflective of his capacity to embody a range of perspectives. This, along with his reflections about what informs and inspires his choices, and his preference for in-the-moment ways of being, suggested that he was either accessing Construct Aware capacities or may actually be more situated in this stage of development. His data are anomalous and call for more study and a deeper understanding of his perspectives and his development. At the same time, information about Barney highlights the mystery of human development – what is not understood, as well as the unique ways in which individuals express and embody these different perspective-taking capacities.

Transpersonal 5.5

Student participant Michele spoke of her challenges and critiques of the developmental model. Her critiques echoed those of Samantha and Stuart, in that she talked about the cultural biases and the better-than/less-than experience she had in her coaching session. She expressed concerns that indigenous people and Earth-based religions might be assessed at the earlier stages

of development. She also expressed that she ultimately felt friendly towards the perspective:

It took me a while to become more friendly with the model. My opinion is that it has some cultural biases structured into it – that it doesn't see itself in certain ways....some of the ways that it doesn't see itself are things that I often pay attention to. So there was this certain emotional irritation I felt towards the ways that the people were kind of consistently ignoring certain things or continuing to reinforce certain cultural norms and forms that I do not experience as liberating or expansive or spacious...I think the other thing was the coaching person was coming from a perspective of trying to be supportive and encouraging and the way that she did that is also from my point of view participating in some of those kinds of more elitist or exclusive frames that – the idea that there are certain people who are more advanced than others. That whole more – less thing and all that stuff...I'm just trying to find ways to metabolize the model in a way that I can translate and harvest the value out of it. And let it serve as a perturbation in my own kind of autopoiesis...so I could maximize the value of it and in some ways I ended up feeling friendly about it because of the conversations and some of the other materials. (March, 2014)

Summary

The concerns and critiques expressed about a developmental perspective are important and call for careful consideration. They offer valuable feedback and indicate ways of revising the language, metaphors, and illustrations used to convey and teach about adult development to address some of the concerns, as well as indicate how to teach about development in developmentally responsive ways. They also point to some of the limitations of the perspective and theory, and indicate additional research needed to address the concerns and challenges.

Conclusion

The objectives of this study were to examine the personal and professional impact of introducing constructive development theory in a post-secondary program in sustainability education and to examine how development shaped teaching, mentorship, and sustainability education. The findings reveal:

- 1) There are significant developmental dimensions regarding how individuals approach sustainability, teaching, mentorship, and learning;
- 2) Learning about constructive development theory and one's own development has positive and transformative personal, professional, and developmental impacts;
- 3) Teaching developmentally is likely to deepen the transformative impact of sustainability education and leadership development programs;
- 4) The language and metaphors used to convey adult development may contribute to some of the challenges people have in learning about the constructive development theory, and teaching about adult development is likely to be more effective when it is done in ways that are developmentally responsive.

The following chapter offers an interpretation of the findings and the implications for the fields of adult development, sustainability education and leadership development, and adult learning.

CHAPTER 6: INTERPRETATION, DISCUSSION, AND RECOMMENDATIONS

Introduction

The purpose of this mixed methods study was to examine the personal, professional, and developmental impacts of introducing a developmental perspective to faculty and students in a post-secondary program in sustainability education. The purpose was also to explore the relationship between the developmental stages of participants and their practices and perspectives with regards to sustainability education, teaching, learning, and mentorship. It was hoped that by introducing a developmental perspective, as well as examining the relationship between development and sustainability education, teaching, and mentorship, the research would support the development of the field of sustainability education, and illustrate the importance of integrating interiors (worldviews, values, and self-identity) in graduate sustainability education, and provide a means to do that. It was also hoped that the research would demonstrate how a developmental framework and assessment can deepen the transformative nature of learning and teaching in graduate education. Finally, it was hoped that the research would contribute to advancing the application of adult developmental research to higher education and adult learning in general, and sustainability education in particular.

The findings of the study revealed the following:

- 1) There are significant developmental dimensions to how individuals approach sustainability, teaching, mentorship, and learning.
- 2) Learning about constructive development theory and one's own development has positive and transformative personal, professional, and developmental impacts.
- 3) Teaching developmentally is likely to deepen the transformative impact of sustainability education and leadership development programs.

- 4) The language and metaphors used to convey adult development may contribute to some of the challenges people have in learning about it, and teaching about adult development is more effective when it is done in ways that are developmentally responsive.

In this chapter, I present a discussion of the findings that emerged from the study. I start by discussing the implications of understanding the developmental nature of sustainability practices and perspectives. I discuss the critical contributions that each phase of development makes to sustainability, as well as the challenges and limits of each. I conclude with the implications of integrating a developmental awareness into sustainability education: that it supports the development of meaning-making at all action logics; supports the development of the educators themselves; and supports the cultivation of skills for working effectively across developmental differences, and transcending the polarization between them.

I then discuss teaching and mentoring with a developmental awareness. I discuss the findings that revealed that students have different developmental learning needs and that Achiever and Individualist students experienced more transformation in Prescott College's Ph.D. program than students earlier or later developmentally. This suggests that some students may be underserved by the program. I discuss the implications of learning to meet these developmental needs for student success, faculty development, and for deepening the transformative potential of the program.

The next section discusses the ways that learning about adult development (including experiential learning, collaborative inquiry, and self-reflection) can be transformative developmentally, personally, and professionally. After discussing the positive impacts of learning about adult development, I discuss the challenges of working developmentally with students and faculty. I explore ways of working with these challenges, as well as some of the

developmental patterns in relationship to the challenges. I conclude by discussing ways of working paradoxically and adaptively with a developmental awareness.

I complete the chapter with recommendations for future research and a discussion of the evolution in the sustainability field. I reflect on Prescott College's contributions to this evolution, as well as possibilities for further contributions. I conclude by proposing that Prescott College's Ph.D. program and other graduate sustainability programs integrate a developmental awareness into their program designs, teaching, faculty professional development, and that they teach it directly to students as a tool for transformative sustainability work.

Development and Sustainability

In the sustainability field, it is common to address sustainability knowledge and literacy, behavioral change, and systems redesign. Addressing values and worldviews in the analysis of sustainability challenges and the design of solutions is less common; however, this is an emerging trend in the sustainability field. This increasing recognition is reflected in the development of new fields such as conservation psychology, which applies psychology to sustainability and conservation efforts (Clayton & Myers, 2009; Saunders, 2003), and the growing interest in research on values, beliefs, and perspectives related to sustainability challenges, such as Yale University's "Global Warming's Six Americas" (2008). More research is needed, however, to more fully understand these dynamics. This research aimed to address this gap in the literature by examining the relationship between the meaning-making and consciousness development of individuals, and their perspectives and practices with regards to sustainability.

The findings demonstrated and illustrated the idea that sustainability (as well as teaching, mentoring, leadership, etc.) is not simply a noun or even a verb, it is also a perspective we take

on the world, a way of seeing, being, and interacting that is profoundly affected by the development of consciousness. In other words, sustainability is not merely a thing or a set of activities, it is a relationship between an individual, his or her awareness and perspective taking, and a larger whole. An individual's meaning-making system or perspective-taking capacities underlie and inform our behaviors and beliefs as educators and change agents. As researchers McEwen and Schmidt articulate, "Sustainability is as much about the mindset through which the world is seen as it is about the activities taken in support of it" (2007, p. 30). This research showed that understanding the developmental patterns between the different meaning-making systems can significantly transform how people approach sustainability education and the development of change agents or sustainability leaders.

This finding points towards at least three important dimensions to understanding and taking a developmental perspective on sustainability education. The first is understanding the patterns of how sustainability perspectives develop. The second is recognizing the critical contributions that each phase of development makes to sustainability, as well as the challenges and limits of each, and learning to work well with and across these differences. The third is recognizing that there are capacities that emerge in the later stages of development that may be needed to address the increasingly complex, interdependent, and global, social and ecological challenges that humanity faces. Understanding these emergent capacities can guide sustainability education and leadership development.

These findings support and validate the limited theoretical and empirical research on the development of sustainability and environmental leadership perspectives and practices (Boiral et al., 2009; Boiral, Baron & Gunnlaugson, 2013; Brown, 2012; Esbjörn-Hargens & Zimmerman, 2009). Much of the research to date has been theoretical. Two recent studies by Boiral, Baron,

and Gunnlaugson (2013) and Brown (2012) empirically explored the relationships between the development of consciousness and environmental and sustainability leadership perspectives and practices.

Boiral et al. articulated:

This study...uncovers a fundamental psychological dimension of environmental leadership that has until now remained largely under-explored. The study helps us to better understand not only the actions of environmental leaders, but perhaps more importantly what is underlying and informing those actions. (2013, p.1)

Brown's (2012) research into how sustainability leaders with post-conventional meaning-making systems (Strategist, Construct Aware, and Ironist – which includes the Transpersonal stage) design and engage with sustainability initiatives concluded that “a constructive-developmental lens offers considerable insight for sustainability leadership theory” (p.189). More research is needed to understand the relationships between the development of consciousness, and the perspectives and practices of sustainability leaders and educators; however, this research demonstrates the significance of doing so.

Sustainability at All Stages

Theoretical and empirical developmental sustainability research suggests that environmental or sustainability commitments may be more common and naturally emergent at the planet-centric Individualist stage of development (Boiral et al., 2009; Boiral et al., 2013; Brown, 2012; Esbjörn-Hargens & Zimmerman, 2009). However, environmental and social concern can be found at all stages of development (Esbjörn-Hargens & Zimmerman, 2009). Each of these developmental stages has unique motivations, ways of orienting and contributing to sustainability, as well as particular strengths and challenges. Recognizing and understanding these patterns is important for cultivating sustainability educators with a developmental awareness. One significant benefit of a developmental understanding is that it can support skill

building for cooperating across differences, integrating diverse perspectives, aligning an initiative with the motivations of particular worldviews, and minimizing the limitations or blind spots of any one approach. These skills and capacities are key characteristics of the leadership needed in an increasingly complex and globalizing world (Hershock, 2007).

I emphasize this point because without a developmental awareness, there can be a tendency in the environmental, social justice, and sustainability fields to see people as either for or against these endeavors, or to marginalize the sustainability efforts not considered ecocentric enough. Boiral et al. (2013) articulate that “the analysis of [environmental] practices tends to project a rather simplistic monolithic view of environmental leaders who endorse a green vision” (p.2). It is common in sustainability to talk about paradigm shifts and to promote the development of an ecological worldview, as if there is only one general version of this that someone has or does not have. There can also be a polarization between pro- and anti-ecological or anti-social justice orientations. Commonly included in the perceived anti-ecological or anti-social justice orientations are fundamentalist religions, conservative politics, capitalism and big business, stewardship approaches to environmental work, and anyone who does not take a pluralistic perspective on diversity. Approaches to sustainability guided by motivations not purely ecological or social justice-oriented can be marginalized. For instance, such approaches include might criticizing corporate efforts as nothing more than green-washing, or stewardship conservation efforts as too paternalistic or anthropocentric. A thesis-antithesis approach to social and ecological challenges may be more likely to prevent change than contribute to it, by creating conflict, reactivity, and alienation, rather than seeking ways of collaborating and moving forward together (McIntosh, 2007; Phipps, 2012). Critique is necessary and valuable, but critique alone is insufficient for transformative change. An important aspect of transcending these kinds of

polarized dynamics is the synthesis dimension of the thesis, antithesis, and synthesis dialectic. A developmental awareness (that naturally arises at Strategist, but can be learned at other stages of development) offers the possibility of synthesizing, integrating, and transcending the polarized dynamics by learning to collaborate across differences, such that transformative and collaborative change is a more likely outcome.

The findings relating to the developmental differences in how individuals approach sustainability work reveals some of the unique contributions, limits, and challenges of each of the stages of development. Each meaning-making structure offers a particular lens on the world, the challenges humanity faces, and how to address them. For the purposes of this discussion, I only address the patterns relating to the stages of Achiever through Transpersonal (See Appendices I, J, and K for more detail on other stages). It is important to note that these developmental stages are systems within people; they are not the persons themselves. As an individual develops, he or she integrates aspects of the previous stage's meaning making, and can and does draw on multiple stages throughout any one day and in different contexts. However, there is a common tendency to reject the previous stage of development as a way of trying to establish oneself in the next stage. This pattern of differentiation can contribute to the conflicts between the stages, as is frequently at play in the sustainability field. Blaming another or a group for the challenges humanity faces does not help humans address or resolve these challenges, and it may simply perpetuate the dynamic that created the challenges in the first place (McIntosh, 2007; Phipps, 2012).

Achiever 3.5

The Achiever stage is a forward leaning-phase of development. These individuals tend to be highly action-oriented, single-system focused, and goal driven. They are interested in world-

centric action, and taking responsibility is one of the hallmarks of this developmental stage. They can also be very invested in the scientific method, rational analysis, and planning as tools for efficient progress. They are aware of either/or choices at the level of ideas, and prioritize and choose one over another. A sense of ownership and competition can arise and contribute to driving action-oriented behavior. In the findings of this study, the Achiever individuals were focused on project sustainability as a measure of success, as well as student success within the Ph.D. program. A single-system focus and goal orientation may contribute to simply getting things done, moving forward in pragmatic, outcome-oriented, and responsible ways. As the complexity of the challenges increases, these individuals may feel in over their heads; also, their analysis and solutions may simplify some of the complexity that may be considered necessary by later stages. In addition, Achievers can exhaust themselves in their drive to reach their goals. They can also be blind to the subjectivity behind the objectivity they so value. Individualists can be critical and sometimes dismissive of what they perceive as Achiever's "less deep" or more anthropocentric approaches to sustainability, or less complex understanding (Cook-Greuter, 2006; O'Fallon, 2010b, 2013). Achiever is the last of the conventional stages of development and has been considered the target stage for adult maturity in Western society, as well as the focus of much of academic development. In Kegan's model, this is the self-authoring stage, and self-directed learning is a hallmark of their capacities (Drago-Severson, 2004a, 2004b; Kegan, 1994).

Individualist 4.0

Individualists take a more complex, horizontal, and overlapping-systems orientation to sustainability, and they are concerned for the diversity of perspectives, equality, and pluralism. They are aware of the social construction of beliefs and tend towards deconstructing

anthropocentric beliefs or other problems and barriers to sustainability as they perceive them. They are likely to pursue creative and unique approaches to sustainability challenges, independent from social or cultural expectations. They tend to favor participatory discussions and decision-making processes. As mentioned previously, their scope of concern widens or deepens to include all of sentient life and may include the planet itself. The rights of nature and all life are valued, and there is an interest in liberating humans from dogma, greed, and judgment. As mentioned previously, this can be the stage of development out of which sustainability may naturally emerge (Cook-Greuter, 2006; O’Fallon, 2010b, 2013). In the findings of this study, the individuals with a center of gravity at Individualist reflected some of these patterns in their unique and creative approaches to sustainability work – such as self-sustainability studied through auto ethnography, and a deep concern and respect for diversity through more participatory approaches to international development work. The findings also reflected some of the challenges or limits of the Individualist meaning making. In their pursuit of freedom from judgments, dogma, and oppression, and their inclination towards social deconstruction, they may generate conflicts with other meaning-making structures through their critiques of what they perceive as shallow approaches to sustainability and rejection of, for instance, market-driven solutions. They also are not likely to see their own dogmatic projections on those who do not believe what they do and can strongly advocate for a particular kind of ecological worldview, not seeing or valuing the pro-social and ecological concerns that others have. A fair amount of the conflict in the sustainability, social justice, and other social/ecological change movements has been between the Achiever and Individualist worldviews. Understanding this does not in any way resolve these conflicts, but it can help relieve some of the pressures of fighting for one worldview or another. Rather than trying to

convert another's worldview, sustainability educators and leaders can turn their attention towards understanding and including different values and concerns, and learn to speak to their natural motivations rather than stimulating reaction or conflict. For instance, renewable energy initiatives can be framed as promoting energy security and independence to communities where this may be more of a motivation than social and ecological justice (Hedlund-de Witt, 2013).

Strategist 4.5

Strategists see the systems of systems interacting, and they create opportunities for transformative change, recognize differing interior contexts (worldviews, values, and beliefs) and their development, and thus value integrating interior and exterior approaches to sustainability. They tend to be solution-oriented and guided by principles, and value integrating diverse ways of approaching sustainability, transcending the limits of each of them to elevate or deepen the transformative nature of change. This is also an action-oriented phase of development, and there can be a tendency to take the weight of the world on one's shoulders (Cook-Greuter, 2006; O'Fallon, 2010b, 2013). In this study's findings, the individuals with a center of gravity at Strategist reflected some of these patterns in their orientation to integrative approaches, such as integrating science and education in a Federal natural resource agency, and integrating the objectivity of science with the subjectivity of personal reflection and identity development. Strategists have a more natural understanding of the development of meaning making and work towards more integrative or inclusive solutions. This developmental awareness can help relax or soften the more ideological or dogmatic tendencies of Individualists. Pilot study participant Katie illustrated her integrative vision for sustainability, while also reflecting on one of her Prescott College mentors: "He seemed to be stuck in a conservatives-are-bad-people mentality, which was antithetical to what I was trying to do through my research –

open our minds to the perspectives of those who disagree with us, and figure out how to create more inclusive solutions” (April, 2014). Some limits of a Strategist approach were also reflected in the findings, including a passion for others’ development, which can be experienced as a pressure to grow, and the critique of the Prescott College Ph.D. program as not being transformative enough. It is also possible that their approaches may be perceived by earlier stages of development as too complex, difficult to grasp, or “morally ambiguous” in their efforts to be integrative.

Construct Aware 5.0 and Transpersonal 5.5

Both of these stages (combined here because of the low numbers in the study) have access to the fifth person perspective, including the awareness that language and beliefs are constructs that shape human understanding and experience of the world. Construct Aware, a receptive stage, tends to be awash in these new perspectives and is likely to have a preference for in the moment experience. These individuals’ central goal is be aware. Transpersonal, an action-oriented stage, begins to prioritize, create, and change constructs to serve an evolutionary unfolding. Transpersonal individuals source their way of doing and being from a transpersonal experience of encountering a so-called “vibrant and alive” world, participate in the creation of new methods of inquiry and engagement, and consciously construct new meta-perspectives (O’Fallon, 2010b, 2013).

Their approach to sustainability work tends to be creative, adaptive, and can be unorthodox in their reframing, redefining, and seeing connections between what others might see as disparate fields or endeavors. They may source their actions from a transpersonal place of letting go, being with things, humanity/nature, and sustainability challenges/opportunities as they are. The research participant assessed at Transpersonal, Michele, articulated her approach to

sustainability as “showing up for the life that is emerging and arising inside of me as part of the larger emergence” of the unfolding Universe. Transpersonal awareness and understanding of perspectives enables these individuals to adaptively tailor communications and actions to others’ meaning-making systems. It is possible that others might perceive their sustainability work as complex, esoteric, too flexible and adaptive, or profoundly ordinary/extraordinary.

Although sustainability might naturally emerge out of the Individualist/Pluralist stage of development, every stage or phase has its own relationship with the aims and activities of social and ecological care, and has something important to contribute to the larger whole. Each phase also has unique challenges and limitations. Although individuals in the sustainability field might wish for or work towards everyone adopting a world-centric or planet-centric worldview, developmental change is slow and cannot be pushed. Additionally, a diverse array of developmental stages will always be present, because there will always be individuals just beginning their lives, and therefore developmental journeys, as others complete theirs.

Learning to work well with and across these differences is essential for effective and transformative sustainability education and leadership. It is my sense that this is one of the growing edges of the sustainability field, evident in the increasing numbers of cross-partisan and developmentally aware and integrative initiatives. Individuals and groups might strongly disagree with each others’ values, but unless humanity learns to work together towards common goals, transcending and including the different motivations for doing so, human societies may stay stuck in inaction and ideological polarization. Examples of integrative and cross-partisan work can be found in Stephan Martineau’s (2007) community forestry work in Nelson, British Columbia, the Institute for Cultural Evolution’s work on political polarization and climate change (2012), David Johnston’s work to transform the green building industry (2000), Nicky

Phear's research on deliberation about climate action (2014), and Annick Hedlund-de Witt's Integrative Worldview Framework for climate change research (2103).

Emergent Capacities at Strategist and Beyond

In addition to valuing the unique contributions of each stage of development, there are emergent capacities at the Strategist, Construct Aware, and Transpersonal stages that may have particular relevance for addressing the increasingly complex, interdependent, global challenges of the twenty first century. These emergent capacities are relevant for the further development of the fields of sustainability education and leadership development.

It is challenging to write about the emergent capacities without contributing to developmental elitism. It is paradoxical, in the sense that individuals in the later stages of development, starting with Strategist, are more aware of their own and others' interior meaning-making systems. In addition, they are more aware of and therefore less likely to project these beliefs and values onto others, or to judge others through them, and are more aware of the developmental patterns between them. At the later action logics there is likely to be a deeper inherent valuing and inclusion of other ways of making meaning, and an increasing capacity to take and integrate multiple perspectives. In other words, a developmental perspective, naturally emergent at Strategist (although available to earlier stages), is paradoxically likely to be more, not less valuing of others, and more open and flexible in terms of differing perspectives (Cook-Greuter, 2006; O'Fallon, 2010b, 2013).

As mentioned previously, the findings of this study were consistent with the limited empirical research into later stage capacities and behaviors with regards to leadership and sustainability (Brown, 2012; McCallum, 2008; Nicolaides, 2008). Brown (2012) researched the ways that sustainability leaders assessed at the later stages of adult development (Strategist,

Construct Aware/Alchemist, and Ironist [Ironist includes 5.5 Transpersonal, 6.0 Universal/Kosmic, and 6.5 Illumined]) designed and engaged with sustainability initiatives. He found that these post-conventional leaders: (1) design from a deep inner foundation, including grounding their work in transpersonal meaning; (2) access non-rational ways of knowing, and use systems, complexity, and integral theories; and (3) adaptively manage through “dialogue” with the system, and through three distinct roles of space holder, catalyst, and creator of supportive conditions. They also draw on developmental practices. Brown (2012) stated:

A key implication of this study for sustainability leadership theory is the demonstration of how various meaning-making systems express sustainability leadership differently. These findings call into question the credibility of existing sustainability leadership theory that has not incorporated a constructive-developmental perspective. More importantly, they open up the opportunity to strengthen the efficacy of future research in this area. (p. 209)

Brown added that a sustainability leadership program that is not developmentally informed is likely to promote the skills and capacities of Expert and Achiever leaders, given their predominance in adult populations in the United States (Cook-Greuter, 1999, 2004, as cited in Brown, 2012).

As Brown proposed, sustainability leadership development informed by constructive development theory may be more likely to be transformative for all stages of development and more likely to support the capacities needed to effectively address increasing complexity, uncertainty, and the interconnectedness of global challenges such as climate change (2012). Sustainability skill and capacity development is needed at all stages of development. A developmental awareness and understanding is also needed to support more integrative and less polarized approaches to transformative social and ecological change. The findings of this study and other recent studies strongly support this proposition.

Summary

The findings of this study illustrate the developmental nature of sustainability practices and perspectives, the important contributions that each phase of development can make to sustainability, as well as the challenges and limits of each. The findings also demonstrate that learning to work well with and across these differences is necessary for effective and integrative sustainability education and leadership. Additionally, there are emergent capacities at the later stages of adult development likely to be more effective at working creatively and adaptively with the increasingly complex, interdependent, global challenges that humanity faces. I propose that integrating a developmental awareness into graduate sustainability education offers a powerful way of supporting the development of meaning making at all action logics; supports the development of the educators themselves; supports the cultivation of skills for working effectively across and with developmental differences, and offers opportunities for including the strengths and transcending the limits of any one approach.

Teaching and Mentoring with a Developmental Awareness

The findings of this research demonstrated that there are significant developmental dimensions to sustainability education, teaching, mentoring, and learning. Students have different developmental learning needs. Understanding this and learning how to meet these needs is likely to be more effective and transformative, and is more likely to support student success.

The Developmental Needs of Students

Within this small sample of students in a Ph.D. program in sustainability education there was a developmental diversity that ranged from Achiever through Transpersonal. Each developmental stage has unique capacities, strengths, challenges, and needs as learners.

Additionally, whether an individual is newly emerging into a stage or exiting his or her present stage of development, also informs the kind of mentoring that is likely to better support that individual.

Students' developmental centers of gravity influence how they make meaning, what they are aware of and therefore able to act upon, how they orient to feedback, their perspective-taking capacities, and their tendencies with regards to thinking patterns – whether they are more black and white, both/and, or paradoxical in their thinking (Cook-Greuter, 2006; O'Fallon, 2010b, 2013). Individuals' stages of development also affect the kind of support and challenges that they need as learners.

Students at the Expert stage of development tend to be black and white thinkers, take feedback as personal attacks, and may dismiss feedback from anyone not considered to be an expert in their field. They can also have a hard time reflecting on their own thoughts and feelings, and they may struggle with self-direction.

Achiever students are likely to be goal-oriented, may be overwhelmed with pluralistic or complex system perspectives, tend to think in either/or terms, are more single-system and results-oriented, and are establishing their skills and capacities as self-directed learners.

Achiever learners tend to accept feedback if it helps them to achieve a goal and are not as aware of their own subjectivity or that of others.

Individualist students are likely to be interested in their own authenticity separate from society's expectations, seek creative and unique approaches to their work, are aware of social contexts (their own and others), want to hear everyone's voices including faculty members', welcome feedback to discover their authentic selves, and may be dogmatic about their pluralism and other socially critical ideologies.

Strategist students tend to be more complex systemic and paradoxical thinkers, and they are aware of and passionate about their own and others' development. They are action-oriented, interested in taking multiple perspectives, may be impatient with extensive sharing and processing, and may be critical of a mentor or program that is not transformative enough.

Construct Aware and Transpersonal students are aware of the constructed and developmental nature of perspective taking, and they are flexible and adaptive in their communication and actions. Their thinking, which is likely to be perceived as complex, includes both paradoxical and one-within-another ways of thinking. They may source their way of doing and being from a transpersonal experience of encountering a "vibrant and alive" world. These students may not feel seen or understood, and because of the relative rarity of these stages, it is unlikely that there would be other students or faculty with similar developmental capacities (See Appendix N for more detail on developmental mentoring) (Cook-Greuter, 2005; O'Fallon, 2010b, 2013).

According to O'Fallon, without a developmental awareness, educators are less likely to recognize the particular developmental needs of students and might be more likely to project and/or promote a particular worldview. They also might over- or under-stretch students, and may not fully recognize the growth and development a student is making, versus the growth and development the educator (or the program) hopes or expects to see. Without an understanding of their own development, educators may be more likely to project their own developmental needs onto students, or teach for a particular developmental transformation, which may or may not be appropriate for the student. They may also be less likely to engage in their own development, not knowing the range of what might be possible, or not "seeing" themselves in the midst of a developmental journey (O'Fallon, 2010b).

In Prescott College's Ph.D. program, where the research findings suggest that more of the faculty may be Individualist in their development, the faculty (and program) may be more likely to support student development from Achiever to Individualist. This developmental transformation is consistent with the one that the Sustainability field tends to promote or support. This is less effective for students who are earlier or later developmentally, or who are not ready for this particular developmental transformation.

The findings relating to the student's experiences in Prescott College's Ph.D. program and of the mentoring they received illustrated that the students most transformed by the program were either early Individualists or late Achievers who were ready to develop towards Individualist. The student participant Luisa, who was assessed at Achiever at the completion of the program, talked about significant transformation, but she also expressed that it was challenging to sustain and integrate some of her learning. She shared that some of the mentoring she received was not helpful for her and that she didn't feel understood. The Strategist students' experiences ranged from positive to critical, but they did not speak of the same degree of transformation as a result of the program, as did the Individualist students. Students at Construct Aware and Transpersonal stages consciously engaged with their own transformation. They spoke both positively and critically of the program, made less direct reference to the program as being the source of their transformation, and struggled with some of the mentoring they received. This suggests that the Prescott College Ph.D. Program may be underserving students who are Strategist and later developmentally. Fifty percent of the students in this study (including pilot study participants, with a student sample size of 12) were assessed at Strategist or later.

Teaching and Mentoring Developmentally

Teaching and mentoring developmentally is paradoxical in a number of ways. It might

suggest that by attempting to discern where a student is developmentally, or even using a developmental assessment as a part of a learning process, could limit another's growth by putting that person in a category and judging his or her development relative to other students.

Paradoxically, understanding and meeting students where they are, and supporting their next steps developmentally, can support their transformation. Teaching developmentally offers a way of attending to the developmental diversity of a learning community, or what Drago-Severson calls "the new pluralism." Exerting a developmental pressure or over- or under-stretching a student can result in the student feeling unsupported, misunderstood, unsuccessful, and can generate resistance. For instance, expecting a student to adopt a particular ecological worldview, or orientation to sustainability that is considered deep vs. shallow, or ecocentric vs. anthropocentric, may only be a developmental fit for some students. It is understandable that a program focusing on sustainability, might seek to cultivate a particular approach to the topic. However, if it is not a developmental fit for a student, understanding why it is not and what might be may be more effective, than trying to promote a particular perspective. As another example, a program might expect a capacity for self-directed learning, openness to collaborative feedback processes, and the capacity to consider multiple and opposing perspectives (a both/and capacity) in their students. However, if a student is not competent in these areas, the program needs to be ready to support that student through more structured mentoring or to be more selective in the application process.

When people feel overwhelmed by challenging tasks without sufficient support, they tend to lose their capacity and willingness either to learn (Langer, 1989) or to engage in a manner that will bring about effective learning and change (Heifetz, 1994). Under stress, learners and leaders will often revert to developmentally earlier patterns of thought and strategies of behavior that

reflect less complex ways of interpreting their reality (Torbert, 2004).

Another consideration for developmental mentoring is that some students are likely to be later developmentally than their faculty, as was found in this study. Developmental research reveals that individuals can take the perspective of someone who is earlier developmentally; however, it is more difficult and sometimes not possible to take the perspective of someone that is later developmentally. A developmental awareness can support mentors or faculty members to listen for these developmental differences, to consider a better developmental fit for a particular student, to be conscious of not projecting their own assumptions on students, and to be explicit with the student if there are concerns about meeting developmental needs.

Research on adult development and adult learning makes recommendations for how to integrate developmental diversity into pedagogy and curriculum design, as well as how to better support transformative learning in adult education. These are to provide developmentally appropriate supports and challenges, a developmentally designed container or holding environment, the importance of well developed and facilitated peer relationships through cohort-based approaches to learning, and the importance of integrating opportunities for self-reflection. According to Popp and Portnow (2001), holding environments need to fulfill three functions in order to support development: holding on, letting go, and maintaining. To effectively provide an environment for transformation, the environment has to support and acknowledge a person's current perspective-taking level, while challenging that person consistently towards a more complex way of seeing. Garvey Berger (2004) recommended three important steps to developmentally aware teaching: "helping students recognize the edge of their meaning-making; being good company at the edge; and helping to build a firm ground in a new place" (p. 346).

Summary

The findings of this research demonstrated that there are significant developmental dimensions to sustainability education, teaching, mentoring, and learning. Students have different needs developmentally, and understanding this and learning how to meet these needs is likely to be more effective and transformative, and is more likely to support student success.

Developmentally aware mentoring can support the self-awareness and the development of faculty themselves, and points towards the importance of engaging in developmentally aware professional development. Understanding one's own development is a critical step in learning how to support another's development. Developmentally aware mentoring also encourages listening for and integrating students' interiors in program design, mentoring, and curriculum. The findings of this study suggest that teaching and mentoring developmentally may be likely to deepen the transformative impact of sustainability education and leadership development programs. I propose that graduate education in general and graduate sustainability education in particular be informed by and integrate a developmental awareness into program design, teaching, and mentorship, and be taught directly to students (and faculty) as a tool for transformative sustainability education.

Learning about Development Can Be Transformative

Learning about development can be transformative personally, professionally, and developmentally for both students and faculty. This finding has important implications for adult learning and sustainability education. Six of the eleven participants assessed at a later developmental stage in their second assessment, two participants' assessments showed more than one full stage of developmental growth, and two participants assessed at half to one stage earlier developmentally. All participants describe some positive impact, and eight out the eleven

describe significant impact in their personal lives. This included greater self-awareness and self-knowledge, increased compassion, understanding, and acceptance of differences with others, communicating in ways that are developmentally responsive and aware, and more attentive listening. In their professional lives, all participants described some positive impact and seven out of eleven describe significant professional impact. These included that learning about development influenced their research design and analysis, mentorship, communication, teaching, and curriculum design.

There were also notable differences in the ways that participants experienced learning about adult development according to their developmental stages, and between faculty and students. Individualist students, and Strategist faculty and students, described the greatest impacts personally and professionally. The Achiever participant described less impact and felt she had not learned enough to apply the material very well. The students as a whole described a much greater degree of impact than the faculty, and were more engaged in the action inquiry process that guided the learning. The faculty members assessed initially at Individualist (Stuart and Samantha), struggled with some of the hierarchical, categorizations of the model and only described minimal personal or professional impact. However, they both assessed at Strategist in their second developmental assessment.

Although the research exploring the impact of integrating a developmental perspective into teaching and learning is limited and exploratory, the findings support the positive impact of doing so. Helsing et al. (2008) argued, "Professional development programs that account for these types of [developmental] disparities in participants' understanding and experience can provide differentiated instruction, helping participants understand and adopt strategies that are appropriate for their developmental capacities" (p. 444). A study conducted by the National

School Network program and directed by Dr. Elizabeth Neale indicated that learning about adult development (i.e. theory and content) and the practices that support it, while actually experiencing those practices, has a positive impact on school performance and test scores (Drago-Severson, 2012).

This is the only study of which I am aware that looked at both the developmental and the qualitative impacts of learning about adult development on a group of educators. More research is clearly needed to explore the developmental impacts of learning about adult development, as well as the other personal and professional impacts. The findings of this study revealed that the impact was significant developmentally, personally, and professionally for this group of students and faculty, and it supports the need for further study.

Developmental Impact

In the field of constructive development theory, the general belief is that it takes at least five years to develop from one stage of development to the next, if it occurs at all. However, this has been challenged by recent research that shows that in developmentally-informed leadership development programs, participants can transform between one and two stages in programs lasting one to two years, such as Pacific Integral's Generating Transformative Change leadership development program (O'Fallon, 2010a).

Whether someone develops in a shorter time frame is influenced by his or her readiness to develop. Individuals entering a new stage of development are likely to need time to stabilize and embody their new awareness and perspective-taking capacities, achieved through horizontal learning. They may not be interested in further development as they may be more focused on discovering, and integrating their new space of consciousness. However, if an individual has been in a particular stage of development for some time, and experienced a number of

disorienting dilemmas or life experiences that were hard to make sense of within their current frame of meaning-making, then the individual might be ripe for vertical or transformative development.

Another influencing factor is the variety of contexts within which humans live their lives. The larger cultural context has an influence on development, as well as family, work, and other social environments. If an individual works in a context that is earlier developmentally, it may slow development or make it difficult for the individual to find full expression in that context. In this case, the context can act like a ceiling on development. Developmental researcher O'Fallon says, "It can be like being a ten foot person living in a room with a five foot ceilings" (personal communication, 2013). If the individual leaves the context or seeks the support and guidance of other more developmentally aware or mature contexts, he or she can develop much more quickly. Or if the context itself becomes more developmentally aware and supportive of one another's development, then again, development can happen more quickly (O'Fallon, 2010a).

In this study, I did not expect there would be much developmental change for participants over the seven months of the research. However, in the second assessment, six of the participants were assessed later developmentally, there was no change for three participants, and two participants assessed earlier developmentally. Of the individuals whose second assessments showed increased development, four developed by half a stage, one by a stage and a half, and another by two and a half stages.

There are a number of limitations to take into consideration when interpreting these results. This is a small sample size, and the results are not generalizable to larger populations. Without a control group, it is impossible to know whether the development that occurred had anything to do with the action inquiry experience or learning about adult development. And

finally, to know if these developmental changes are stable, it might be advisable to re-test the participants after an additional six months.

For the individual (Barney) whose assessment measured that he had developed two and a half stages, it is possible or even likely that he was already at or close to this later stage of development (late Strategist) when he first took the assessment. Occasionally, the assessment is inaccurate, and individuals are asked to retake it. Also, Barney is a musician and shared that he has a harder time expressing himself verbally, a factor that may have influenced his assessment. When he took the SCTi-MAP the second time, he spent up to five hours as compared to the 15 minutes he took the first time. He clearly put more time into his second assessment and may have been interested in expressing himself more fully.

I spoke with two developmental researchers/coaches who suggested that sometimes people can be asleep to their full capacities. Learning about development, receiving an assessment, and gaining an understanding of the range of development can awaken them to their fuller capacities. They also may not have found their full expression either personally or in the contexts within which they live and work. The developmental action inquiry experience may have supported them more fully embody their present developmental capacities and express themselves. Another possibility is that such people had developed habit patterns in their ways of self-expression, interacting with others, or interacting with work. Thus, such individuals may not have revised or changed since their consciousness had developed. This is another way of saying that they may not have fully stabilized, embodied, or learned to express themselves to their fullest developmental capacity (O'Fallon, personal communication, April, 2014; Fitch, personal communication, April, 2014). It is also worth noting that the individuals (Barney and Samantha) who struggled the most with the developmental perspective, questioning, or disagreeing with the

model and its underlying beliefs showed the greatest developmental movement from the pre- and post-developmental assessments.

Keeping all of these limitations and considerations in mind, the results suggest that learning about development through the process of taking a developmental assessment, receiving coaching, and participating in an action inquiry process focused on development may be developmentally transformative. Integral philosopher Ken Wilber supports this idea in the following:

If people are just shown developmental maps, that increases their speed of development. Just being exposed to these developmental realities is very psychoactive. One of the things that we found, as well, is people who just study integral maps tend to start developing more quickly, because it lets you know that there are more things available than you thought of and it triggers that transformative process in your own psyche. (Wilber, 2011)

Additionally, as a collective engages with a developmental perspective it can open up space for development, or as it is sometimes called “lift the ceiling” for each other’s development. It is possible that by engaging with a developmental perspective and learning about the range of development that is potentially available, the participants in this study were supported in their development. Without a developmental awareness and understanding of the developmental process, as is commonly the case in modern and post-modern culture, adults’ development is generally supported up until the culture’s center of gravity, considered to be Achiever in the United States (Torbert, 2004). Developing beyond Achiever is more challenging. In Prescott College’s Ph.D. program, where the center of gravity may be Individualist, it is likely that development up to Individualist is more likely, and any development beyond that might be more challenging.

More research is needed to understand the developmental impacts of learning about adult development, as well as to understand the developmental impact within the context of a

developmentally informed program, as compared to the development within a program not informed by a developmental perspective.

Personal and Professional Impacts

The personal and professional impacts were significant. Although there were developmental patterns to the impacts, there were also some patterns that were consistent across the developmental stages. This suggests that the value of learning about development is not limited to a particular developmental stage. It also suggests that teaching and learning about adult development can be very supportive of an individual's personal and professional development, and therefore instrumental in graduate and sustainability education. This impact is likely to be much greater if the learning is experiential and reflective, including a developmental assessment, coaching, and an inquiry process to learn about one's own and others' development, as was the case in this study.

All participants described some positive impacts both personally and professionally, eight of the eleven participants described significant personal impact, and seven of the eleven described significant professional impact. In terms of personal impact, participants spoke of greater self-understanding and self-acceptance, increased understanding of others, improved communication and relationship dynamics, a deeper understanding of working with difference, greater perspective taking, empathy, and listening. They also expressed that the developmental assessment and coaching felt affirming and honoring. The professional impacts that participants described included that learning about development influenced their research design and analysis, mentorship, communication, sustainability initiative design, teaching, and curriculum design.

The personal and professional impacts of which participants spoke are supportive of

development itself, such as increased perspective-taking capacity, enhanced awareness of self and others, empathy, compassion, and acceptance. They are also supportive of increasingly transformative sustainability education and leadership. Brown's (2012) research into developmentally mature sustainability leadership spoke of 15 competencies that may support the development of sustainability leadership (See Appendix M for more detail). These include being aware of and responding to one's own interior, inhabiting or taking multiple perspectives, self-transformation, creating development conditions, and holding space for others. However, Brown (2012) clarified that these competencies alone may be insufficient to catalyze stage development:

There are a number of other important factors that appear to – or are theorized to – support action-logic development. These include, among other elements, regular immersion in complex environments (e.g., interpersonal, work, educational), conscious engagement in life's problems (e.g., inquiry, therapy, deep dialogue), awareness of and exploration of inner states, and consistent interaction with others committed to self-development. (Pfaffenberger, 2007 as quoted in Brown, 2012)

The findings of this research demonstrate that learning about adult development and engaging in developmental action inquiry supports the personal and professional development of sustainability educators. Additional research is needed to more deeply understand the personal and professional impacts of learning about adult development, taking a developmental assessment, and engaging in developmental action inquiry. The findings support the proposition to integrate a developmental awareness into graduate sustainability education program design, teaching, and mentorship.

Learning and Teaching about Adult Development: Challenges and Opportunities

Teaching about adult development is challenging and paradoxical, and may be particularly challenging in postmodern and liberal academic settings. It requires a high degree of care, sensitivity, and a developmental awareness to be done well. Paradoxically, adult development can be liberating for both students and faculty, and is more likely to be so if it is

respectful of developmental differences and integrates the polarities of support and challenge, being and becoming, and differentiation and integration (Fitch, 2012). It is also partial in its understanding of the development of consciousness. It is helpful and necessary for developmental practitioners to be able to integrate and orient to both the value and the limitations of these frameworks, as well as the developmental preferences and inclinations towards categorizing or being in the moment with one's experience, and to make adjustments accordingly.

Developmental Patterns

Developmental research predicts developmental differences in the ways that participants perceive and engage with a developmental perspective. Some of these predictions follow the iterative patterns of receptive (integrative) and action-oriented (differentiating) stages, relating to the early and later person perspectives of the StAGEs model. O'Fallon (2010b) calls this the rocking chair pattern. As an individual moves into a new person perspective, such as the third, fourth, or fifth person perspective, he or she is awash in new insights, perspectives, and awareness. This receptive or interior-oriented phase includes a preference for in-the-moment awareness, as the individual explores the contours of new perspectives. Such individuals are less likely to want to categorize or prioritize at this stage – they are “had by” the new perspectives, rather than “having” them. In their preference for in the moment exploration, they tend to eschew and put into the background hierarchies and categorizations. Receptive stages include Expert 3.0, Individualist 4.0, and Construct Aware 5.0. It is predicted that these individuals will be less interested in adult developmental models. Action-oriented stages include the maturing of the particular person perspective, such that the individual can now “have,” categorize, and prioritize the new perspectives and awareness. These stages are more likely to be interested in a

developmental perspective. Action-oriented stages include 3.5 Achiever, 4.5 Strategist, and 5.5 Transpersonal (O'Fallon, 2010b, 2013).

In addition to the receptive and action-oriented pattern, it is predicted that Achievers may find the material too complex or difficult to understand; however, they may be interested in advancing developmentally. Individualists, with their context-aware concern for pluralism, are predicted to be the most critical of developmental perspectives. They are likely to be more interested in exploring the multiple identities or voices that make up the self and less interested in any way of categorizing or differentiating these voices or identities. Strategists with a mature fourth person perspective are intuitively aware of interior contexts and the developmental patterns between them, whether they have learned about adult development or not. They often find great value in learning about adult development and can be quite passionate about their own and other's development. Construct Aware, as another receptive stage, is likely to background a developmental perspective; however, these individuals are less likely than the other receptive stages to reject it outright (O'Fallon, 2013).

The findings in this study generally followed these predictions. The Achiever in the study found the material complex and struggled to find ways of translating and applying it to her work as a supervisor. At the same time, she felt her assessment was accurate and expressed a desire to be later developmentally, reflective of an Achiever's achievement- or goal-orientation. The Individualist students valued learning about and reflecting on their own development. They spoke of not paying close attention to the categorizations and focused more on understanding themselves and others. The Individualist faculty expressed more critical concerns about the hierarchy of the model, the potential limitations of categorizing others, and the apparent cultural biases and myopia of the perspectives. All but one of the Strategist participants spoke of

significant personal and professional impact, highly valued learning about their own and others' development, and began applying the perspective in their research, collegial relationships, and mentoring of students. One of the participants assessed at Strategist in the second assessment, Barney, struggled with many aspects of the developmental perspective and expressed a preference for not categorizing others, and as he called it, being "in the moment" with his students, intuitively sensing what might serve them best in their learning. The Transpersonal participant paradoxically expressed significant concerns and critiques, as well as significant value, and personal and professional impacts.

Participant Barney assessed first at Achiever, and second at Strategist, yet his reflections and perspectives suggested more of a Construct Aware perspective taking orientation and capacity. His data were somewhat anomalous. This is illustrative of the complexity of adult development and the limitations either of my understanding and/or the models themselves. As Cook-Greuter (2014) notes, these models and their stages are idealizations of how adults develop. The actual lived and embodied expressions of these developmental stages are different from the idealizations. O'Fallon (2010b) likens development to that of a skeleton in the body. There is a deep structure that informs and influences the body, and at the same time the full person is made up of so much more than his or her skeleton. The development of consciousness is one aspect of a complex human being. From another angle, human development is a mystery, and developmental research offers a nascent understanding and approximation of the complex, unfolding, and evolutionary nature of consciousness and its development. As a scholar practitioner, I appreciate being reminded to hold any theory or model lightly, staying aware of its partiality as well as the insights it reveals.

To summarize, there are developmental patterns to how individuals are likely to respond

to learning about adult development. The iterating pattern of receptive and action-oriented, or integrating and differentiating stages, illustrates that individuals move through stages alternating between finding value in differentiating categorizations, such as a developmental perspective, and preferring not to categorize and be more in the moment as they inquire into their current experiences. Understanding this and making adjustments in how and when adult development is taught can be helpful for working skillfully with these developmental differences. Additionally, the developmental unfolding of consciousness is more complex and nuanced than the theories and models used to study and express our understanding of these dynamics. As a developmental practitioner it is helpful and necessary to be able to integrate and orient to both the value *and* the limitations of these frameworks, as well as the developmental preferences and inclinations towards categorizing or being in the moment with one's experience, and to make adjustments accordingly.

Language, Metaphors, and Visuals

In the context of a postmodern academic culture like Prescott College's Ph.D. program, the discourse tends to be oriented towards pluralism, social deconstruction, and cross-cultural sensitivity. There is likely to be a high degree of concern and critique about hierarchies, categorizations, and developmental perspectives. This was my experience as a student in the program. My cohort cautioned me against the use of the term development and suggested I replace it with unfolding. One of the core faculty members (Jeff), a participant in this study who ultimately spoke of significant learning and transformation, suggested on at least one occasion that I move on or let go of my focus on adult development.

Aware of these predictions and potential challenges, I chose to conduct this study exploring the impacts of introducing a developmental perspective to student and faculty, because

it is my belief that these perspectives have important implications and potential value for individuals across the developmental stages, even with the challenges. I sought to minimize the barriers to learning about adult development by attempting to present the material in developmentally aware and responsive ways, while at the same time valuing and validating the full spectrum of experience and perspectives. I was also eager to learn from participants' challenges and critiques.

In addition to the developmental differences in how participants experienced learning about development, there were also some consistent challenges and critiques. Some challenges included use of language, choice of metaphors (e.g., stages), the hierarchical dimensions of the models, concerns about categorization, cultural bias, and the influence of business- and leadership-oriented language as a result of the research and application in those fields. These concerns and critiques offer valuable feedback and point towards additional research that is needed to respond to the critiques, such as the cross-cultural applicability and appropriateness of the models. They also suggest ways of revising some of the language, metaphors, and illustrations to be more developmentally responsive, illustrative of the complexity of the models and our understanding of how consciousness develops, as well as being sensitive to concerns about pluralism.

With regards to language, the term “development” has negative historical associations from its use in the fields of sustainable, economic, and international development. From a postmodern perspective, these fields are considered by many to be paternalistic, colonialist, and not honoring or valuing of the people it was purported to support. Additionally, there have been many social and ecological injustices in the name of development. Faculty participant Jeff expressed this in the following:

You know about my relationship with the word “development,” not child development, but the very word development. It has been very problematic. What I studied at Stanford was called development studies, you see. I was supposed to be the development educator - a champion of development. (August, 2103)

Jeff instructed me to be particularly explicit in my writing about what the term means in the context of adult development, in order to distinguish it from these more oppressive and unjust ways of attempting to develop other cultures and societies according to Western standards of development. Additionally, participants struggled with some of the stage name descriptors such as Achiever and Individualist. One faculty member (Samantha) illustrated this when she said, “Any model that puts Individualist on the higher end of the scale is suspect,” reflecting her value of more collaborative and participatory approaches to teaching and learning. Participants struggled with the following terms: levels, higher and lower, and stages. The applications of adult developmental research in business and leadership development contexts and the resulting influence on some of the language in the field also stimulated concerns and critiques from some participants. Additionally, the visuals or illustrations that suggest more of a stair-step approach to development or a ladder-like visual or metaphor, generated critiques and misunderstandings.

Some of these concerns would not be resolved by changing language and metaphors, as they reflect deeper epistemological and ontological perspectives. However, it is my experience that adult development theory can be presented in ways that address some of the concerns by being more developmentally responsive or appropriate, framing the theory in ways that may stimulate less reactivity, and changing some of the language and illustrations to better reflect the complexity of the perspectives they convey.

For instance, as mentioned previously, participants preferred the terms “unfolding” to “development” and “phases of development” to “stages”. O’Fallon and other developmental theorists use a wave metaphor to describe the phases of adult development that is more

illustrative of the movement within and between the stages. This offers a more dynamic picture of the developmental process rather than the firmer sounding term stage of development. Don Beck, who researches the development of value systems, describes each stage being like a musical note, while its expression is more like a chord or a melody. He also offers these stages as being types in, rather than types of, people (1996). Another possibility is presenting visuals that offer a more circular or spiral-like image, rather than some of the more stair step or ladder-like visuals that have been used. Drago-Severson (2012), who writes about the development of educators and school leaders, discusses the different developmental stages as types of learners. Her work integrates a developmental understanding between these learning types; however, her presentation of it backgrounds the developmental dimensions.

In discussing the hierarchical dimensions of developmental models, it can be helpful to talk about the difference between nested and dominator hierarchies. In a nested hierarchy, each stage transcends and includes the previous stage, has emergent capacities, strengths, and limitations, and every stage is essential and worthy of profound respect and value. Wilber (2006) refers to these as liberatory or actualization hierarchies that help to resolve the problems or limitations of dominator hierarchies. Again, it is paradoxical: The maturing of development can help resolve or address the prejudice of earlier stages of development, but the overvaluing of later stages also contributes to the challenges or barriers others might face in learning about development. It is a both/and paradox of seeing every stage of development as inherently valuable and essential, while also valuing the emergent capacities of later stages that are more likely to value and appreciate every stage.

It also might be helpful, particularly within postmodern contexts, to speak of the complexity of developmental systems. These developmental structures are complex, subtle, and

non-linear. They display fractal patterns across the stages and are fluid and adaptive, as well as chaotic and emergent. These autopoietic patterns are reified or recreated by the very beliefs and perspectives humans hold about life and reality. They can and do change in an instant, and at the same time they are held constant by subtle habit patterns. Just by talking about development, some of this dynamic and alive complexity becomes flattened as it is made object (Fitch, 2012). It loses some of its relational inter-subjectivity. Some of the language and visuals used further suggest a more static, less complex understanding of these dynamic, iterative, and fractal-like patterns. These challenges and limitations are not resolved simply by being aware of them or changing language or visuals, yet doing so can make a difference. This is illustrated in the following quote by student research participant Helen:

I had difficulty with the different levels of adult development...Although every time I feel that you answered my questions in a good way...you answered that it's not that linear...what I ended up thinking is that they can be overlapping and we can go through different stages every day. We may be developed to that extent or to that level in a situation, but in a different situation we would be exhibiting features of a different level...I gave it that interpretation to be able to work with it and accept it and just be able to work with it. (March, 2014)

Paradox and Polarity Framing

Adult development is paradoxical in a number of ways. The term development itself, in addition to its negative history relating to the field of international development, can evoke feelings of striving to improve or feelings of better than or less than. On the other hand, learning about one's own and another's development can also bring people into contact with an experience of being with themselves and others, right where they are, with no need to change anything, and a deep appreciation of the unfolding and evolutionary nature of consciousness. This was reflected in the participants' experience when they spoke of feeling "affirmed and honored" by learning about their own development. Cook-Greuter (2013) titled a primary paper

about the stages of adult development “Nine Levels of Increasing Embrace” because with each stage of development there is a widening and deepening of the human circle of awareness, care, and responsibility. More is included and cared for, not less. With this widening embrace comes a greater capacity for perspective taking and empathy – understanding and embracing the experience and perspectives of another. It might be feared that putting people in a developmental category could be a way of limiting who they are and who they might be; however, the direct experience can offer more of an experience of liberation, embrace, or awakening. In transformative learning and sustainability education there can sometimes be a pressure to change or to transform, to adopt a worldview or paradigm other than the one an individual currently holds. This can generate resistance or reaction. Teaching and mentoring with a developmental awareness can paradoxically create the opposite experience: Meeting a student right where he or she is with respect, appreciation, and understanding can actually liberate the student for his or her own unfolding development or transformation.

One way I have found helpful in working with the paradoxical nature of adult development is to use a polarity framing. “Everything that manifests, which one can describe or characterize, manifests in polarities. If there is an out breath there is an in breath. If there is desire there is aversion” (Kesler, 2010). Polarities can be defined as “an interdependent pair of two poles that are both desirable and required over time for a sustainable self and system” (Johnson, 1996). The polarities that I introduce at the beginning of a presentation on adult development are being and becoming, and wholeness and partiality. I invite participants (often through an experiential exercise) to consider the ways each of us is both whole and partial, both being and becoming. Starting with wholeness and being, I invite people to consider the ways we and others are perfect just as we are, and nothing needs to change – that at our essence we are

whole and perfect, even with our imperfections. Moving on to becoming and partiality, I invite people to remember that we are also all growing and developing, that we are also in the process of becoming, and our views and understanding of the world and ourselves is partial – we always have room to grow. I ask participants to move back and forth between these two perspectives, from wholeness to partiality and being to becoming, and then to consider the relationship between the two of them. Without partiality we would not know wholeness and vice versa. I then invite participants to consider and hold both at the same time, that we cannot have one without the other, and from a deeper place there is no separation. We are beings and becomings, as are our colleagues and our students. In the process of teaching and learning we need both, in a dynamic relationship with one another. Development might suggest more of the becoming side of the polarity and can bring up feelings of judgment, or an internal or external pressure to grow and change. However, held with the other side of the pole, development can be a doorway into both the beingness and the becoming, the support and the challenge, the differentiation and the integration. I invite participants to try to orient this way, and return to this polarity framing throughout a presentation or learning experience.

Adult development, like sustainability, teaching, and mentoring, is not an object or even simply a verb. It is an inter-subjective process and a perspective we humans take on the world and our experiences in it. How we orient to it and hold it in ourselves as developmental practitioners influences how others experience the perspective and material, as does their own developmental lens. An awareness of this, inquiry into the meaning we make of it, and a deep ethical concern for how we convey this material to others is worthy of our consideration (Fitch, 2012).

Recommendations for Future Study

Additional research is needed to understand the developmental impact of learning about adult development and taking a developmental assessment, to more deeply understand the perspectives, beliefs, and behaviors of students and faculty at the different developmental stages, and how best to support that development and the relationships between adult development and sustainability education, teaching, and mentoring. Recommendation for future research include:

- Larger sample studies of the direct correlations between stages of development and the perspectives and practices of sustainability education, teaching, mentorship.
- Larger sample studies of the developmental impacts of learning about adult development for faculty and students in graduate education and sustainability education and leadership development.
- Longer range studies that track the development of perspectives and practices of sustainability educators and leaders.
- Pre and post developmental assessments of students in developmentally informed graduate study in general, and/or more specifically, developmentally informed graduate sustainability education and leadership development programs, as compared to programs that aren't developmentally informed.
- Studies of the developmental learning needs of Achiever, Individualist and Strategist students in graduate education and/or graduate sustainability education.
- Research on the developmental (and other) impacts of curricula that support conscious engagement with personal development.

- Research on developmentally informed educators – their practices, perspectives and transformative developmental impact on students.
- Research on the development of ecological identity and its connection to adult development.

The Sustainability Field is Growing Up and Waking Up

“The level and depth of change we seek to bring about in the world is directly related to the scale of change we are willing to undergo ourselves” (Charlotte Millar, WWF, UK).

We live in an increasingly complex, interconnected world with converging planetary challenges. Recognizing and taking responsibility for these challenges requires complex adaptive systems thinking. The capacities to recognize these nonlinear systems and the challenges humanity faces appear to be matched with developing the abilities to engage with uncertainty and to practice a more adaptive approach to leadership (Heifetz, 2009). Some propose that the increasingly complex dynamics of the outer world (social and ecological world) in effect triggers the greater complexity and dynamics of the inner world – that we grow and evolve together.

An integrally informed perspective forces us to acknowledge that we do not see the world objectively but subjectively through our developmental framework. In essence, the problem we’re solving is the problem we’re seeing, or at least, it’s the problem we are developmentally capable of seeing. Thus, in many ways, our ... activities can reveal, reinforce, and propagate our current developmental level rather than move society forward. (Jones, 2014, para. 1)

Recognizing and understanding the developmental dimensions of sustainability education and leadership does not solve these problems or ensure that humanity will develop the skills needed to address these challenges adaptively and transformatively. However, it does highlight an often neglected, previously minimally researched and understood dimension of teaching, learning, and leadership: that how we know is as important, if not more so, than what we know

(Kegan, 1994; Torbert, et al., 2004; McCauley, et al. 2006). Integrating a developmental awareness into teaching, learning, and leadership development adds a critical element that can support the cultivation of skills and capacities needed to address the complex and interdependent challenges that we face as a human family.

The sustainability field appears to be evolving, and its leading edge may be the transition from Individualist to Strategist. The following are some of the capacities and awareness of the Strategist stage of development: interior/exterior integration, developmental awareness, adaptive and complex systems design, moving from problem-centered to solution-oriented approaches, working with uncertainty, communicating, facilitating, designing in ways that integrate different value systems, and working towards integrating humans and nature towards a mutual thriving. There is ample evidence of the developments and emerging awareness and capacities in the field. Examples include the increasing use of metaphors and their associated practices for moving beyond merely sustaining human and ecological systems, such as resilience, regenerativity, thriveability, and flourishing. There is increasing recognition and partnerships with diverse ways of approaching social and ecological change, including, for example, social entrepreneurship, conscious capitalism, and faith-based stewardship. There is also an increasing inclusion of human interiors (psychology, worldviews, values, and spirituality) through emerging fields like conservation psychology, contemplative practices in sustainability and education, and the integration of social, ecological, and spiritually-inspired change initiatives.

Prescott College's Ph.D. Program in Sustainability Education

Prescott College's Ph.D. program is another example of development in the fields of sustainability education and leadership. Its vision for sustainability education is integrative, transformative, and experiential. Stephen Sterling (2001) speaks of the evolution in the field of

sustainability education when he articulates that there is education about sustainability, education for sustainability, and education as sustainability. Prescott College's Ph.D. program is guided by Sterling's vision of "education as sustainability" (2001, p. 22). This program is particularly strong in integrating the cultural and social justice dimensions of sustainability, something that the field has been slow to adopt. This is reflected in the cultural, ethnic, and international diversity of the students attracted to the program, as well as the diversity of research in the program. It also utilizes a cohort model, directly integrates self-reflection in a number of assignments and self-direction in the coursework, includes student feedback, collaborative work, and student teaching. It was my experience as a student in the program that the teaching and design is primarily guided by an Individualist stage of development. Prescott College's Ph.D. program is well situated to integrate more Strategist capacities in the program design, teaching, and mentorship, and further contribute to the developmental growing edge of the larger field.

To support this development and evolution in the field, Prescott College's Ph.D. program (and other programs like it) would benefit from integrating adult development in their program in some of the following ways:

- Teaching about meaning-making development and its connections to sustainability practice and teaching.
- Teaching communication, facilitation, and leadership skill development for working transformatively with diverse worldviews, values, and meaning-making structures.
- Integrating interior development into its curriculum – beyond self-reflection – to include processes and tools to support self-awareness, self-understanding, and self-development. These could include a developmental assessment like the SCTi-MAP and other related developmental tools (such as the Immunity to Change process [Kegan and Lahey, 2009],

and Polarity Management [Johnson, 1992]).

- Prioritizing and funding professional development for faculty to learn about and engage with their own development and to cultivate skills in developmental teaching and mentoring.

Conclusion

This research, one of the first of its kind, examined the personal, professional, and developmental impacts of introducing a developmental perspective to faculty and students in a post-secondary program in sustainability education. It also explored the developmental dimensions of sustainability education, teaching, learning, and mentorship. The study demonstrated that there are significant developmental dimensions to how individuals approach sustainability, teaching, mentorship, and learning. It revealed that learning about constructive development theory and one's own development has positive and transformative personal, professional, and developmental impacts. The study also demonstrated that teaching developmentally may be likely to deepen the transformative impact of sustainability education and leadership development programs. Finally, it revealed that teaching about adult development is more effective when its done in ways that are developmentally responsive.

The findings support the proposition that graduate education in general, and graduate sustainability education in particular, be informed by and integrate a developmental awareness into program design, teaching, and mentorship. The findings also support the proposal that adult development be taught directly to faculty and students as a tool for transformative sustainability work. The aim of the proposition is to encourage developmentally aware teaching and mentoring, to meet students (and educators) where they are developmentally, and to support their

next unfolding steps.

In order to support developmentally aware teaching it is important for educators to engage with their own development. A cohort of students will always include a developmental diversity and developmental research shows that younger generations are developing more quickly than older generations. Learning about one's own development as an educator, as this research revealed, supports self-awareness, self-understanding and may support development itself. It may also decrease the likelihood of an educator projecting his or her developmental perspective and needs onto students. The depth of learning that educators might hope to support in another person is reflective of the depth of change the educators are willing to undergo themselves.

My hope is that this research contributes to supporting developmental awareness in sustainability education, teaching, and mentorship, offering a developmental embrace and a corresponding liberation to students, faculty, and institutions of higher education.

CHAPTER 7: EPILOGUE

Reflections of a Scholar Practitioner

My aim in sharing about adult development with others is to support teaching, mentoring, and relating with others in a way that includes an awareness and appreciation for developmental differences, an embrace of another person (and ourselves) right where they/we are, as well as an understanding of the evolutionary development of consciousness and how that can be supported. My aim is not to “develop” another, which I do not believe can or should be done, but is more about being with another person in his or her unfolding development. I also believe that the development of consciousness is complex and mysterious, and that our human understanding of it is limited. I aim to hold these developmental tools lightly, aware that they are partial and limited in their understanding, as well as remembering that an individual’s development is only one aspect of a complex and whole human being. Although I find these tools to be liberating, I know that they may not be or are not for others. I aim to share them to the extent that they might aid others in their own self-awareness and relationships, and let them go or put them aside, when they do not. Doing so is paradoxical and challenging, especially when the focus of this research was to bring forward and highlight the implications of a developmental awareness.

There were many times in the research process when I questioned my intent, ethics, and capacities to work skillfully and respectfully with the research participants, especially as some of them struggled with the developmental models. I knew that I was learning and developing in this process, as I immersed myself in their experiences and encountered their challenges and critiques of the perspectives, as well as their joys and insights. In the process I continued to learn more about teaching and mentoring in developmentally responsive and adaptive ways, letting go of outcomes, and being present to and celebrating the unfolding that was occurring. It is clear

that this learning will never be complete. I am also learning that, as others struggle or have conflict in learning experiences, attempting to resolve or diffuse those conflicts most likely does not best serve their learning, as they may have something to learn from the conflict.

As an educator and researcher, I find that I need to be constantly inquiring into my own experiences, awareness, shadow, and attachments. The depth of learning that I might hope to support in another person is reflective of the depth of change I am willing to undergo myself. I feel immensely humbled by this recognition and that my role is to be as present as I can to myself and another's awakening and unfolding, by opening to and creating a space of mutual, unconditional love and respect and the mystery of our lives unfolding in the context of our evolving cosmos.

I hold a similar awareness and inquiry with regards to sustainability work. There is nothing wrong with humans or human/nature relations, nor is there something to fix or to solve. It is my sense that we humans are growing and waking up together and can only do our best to keep learning from the mutual and interpenetrating dance -- letting it be so, while doing what we can to reduce suffering and maximize thriving and flourishing. In this recognition, I am inspired by the words of poet Gary Snyder, "Knowing that nothing need be done, is where we begin to move from." In the previous chapter I wrote about framing development within the polarity of being and becoming. It is my hope that by engaging both aspects of the human journey, our essence and wholeness as well as our unfolding and becoming, we can experience the embrace of belonging. And from this place of belonging, of being at home with ourselves, each other and the cosmos, our teaching, mentorship, and sustainability work will simply be in loving service to the growing up and waking up of all sentient life.

A Developmental Awareness and Embrace

My deepest aim as a developmentally aware educator and sustainability practitioner is to meet others where they are, with fundamental love and respect: to meet and embrace their beingness and humanity, where they are and as they are, and without any sense that anything needs to change. I also wish to sense into what is becoming, what is unfolding, and what might be next for another person developmentally. My aim is to hold and be present to both the being and the becoming (of myself and another) in a dynamically balanced whole, evoking or enacting a sense of belonging.

A developmental awareness is profoundly different from promoting development; in fact, it could almost be said to be the opposite. However, many of us in the developmental field can end up, wittingly or unwittingly, either promoting development or being perceived as doing so.

Working with a developmental perspective and awareness is profoundly paradoxical, perhaps almost impossibly so. A conversation with my cohort members brought this to light. We were talking about the deeper personal meaning that our research had for each of us. We took turns reflecting what we thought the deeper meaning was for each other, and my cohort mates shared that what they saw in my work is that I am interested in developing myself and others. My immediate impulse was to say “No, that’s not it.” But I realized saying so was not so simple, and it was clear that this was the meaning they had made of my work, even if it was not what I intended to convey. I have reflected on this conversation ever since.

As a developmental practitioner, I try to frame my presentations about development, within the polarity of being and becoming, of meeting someone where he or she is and supporting the next steps developmentally. I attempt to articulate the paradoxes of development as I understand them, and that teaching and practicing sustainability with a developmental

understanding and awareness can be liberating. By being sensitive to developmental diversity, we educators begin to develop the skills and capacities to work effectively with and across developmental differences, to be more inclusive and integrative in our teaching and sustainability work. Another paradox is that there are emergent capacities with each subsequent stage of development that guide us towards a deeper and a wider embrace of one another and all of life – towards a greater developmental awareness and sensitivity. One way of addressing this paradox is to embrace and value the unique qualities and capacities of every developmental stage, *and* recognize the emerging capacities at later stages that are more likely to value more inclusive and integrative approaches that both include and transcend.

I pursued this research because I believe that developmentally aware teaching, mentorship, and sustainability work can be transformative and liberating. It can help us as humans transcend some of the polarized conflicts that contribute to generating sustainability challenges in the first place. It can also help the sustainability field grow up, developing greater skills and capacities for working effectively and integratively with developmental diversity. It can also support more effective and transformative teaching and mentorship, such that all students are supported in their growth and learning, as well as support the development of the educators themselves.

We are a species that is learning how to live well within and with the planetary systems that give us life. We have much learn and it could be said that our learning and development is insufficient for the challenges that humanity and the planet presently face. However, we are also the universe becoming conscious of itself – an intimate part of (not separate from) this unfolding, evolutionary journey. As Teilhard de Chardin articulated fifty years ago, “The human person is the sum of 13.7 billion years of unbroken evolution now thinking about itself.” Awakening to

the embrace of this unconditional belonging, and learning how to align our culture, systems, and activities with this knowing, has an important role to play in our sustainability endeavors.

Engaging with our own and each other's unfolding development offers a pathway towards this embrace.

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Appendix A

IRB Proof

HIPAA Documentation

Certificate of Completion

The National Institutes of Health (NIH) Office of Extramural Research certifies that Abigail Lynam successfully completed the NIH Web-based training course “Protecting Human Research Participants”.

Certification Number: 515446

Appendix B

Informed Consent Form

Research on integrating an adult developmental perspective into teaching, mentorship, and learning for sustainability education and leadership development.

NAME OF PARTICIPANT: _____

You have been asked to participate in a research study conducted by Abigail Lynam, a doctoral student in Prescott College's PhD in Sustainability Education program. This study is supervised by Rick Medrick. The focus of this research is to explore the impact of integrating a developmental perspective (constructive development theory) into teaching, mentorship, and learning for sustainability education and leadership development. You are being asked to participate in this study because you are either PhD or MAP faculty, or a student in the PhD program.

Before you agree to participate in this research study, it is important that you read and understand the information provided in this informed consent form. If you have any questions, please ask the researcher for clarification.

Why Is This Study Being Done?

The overarching purpose of the research is threefold: to highlight the importance of worldviews, psychology and self-identity in learning, teaching and facilitating transformative change, to explore deepening the transformative nature of learning and leadership development in graduate education through the use of a developmental framework and assessment, and to contribute to advancing the application of adult developmental research to higher education and adult learning. The results of this research will be relevant in the following areas: adult learning, transformative learning, post-secondary education, adult development, sustainability education, and leadership development.

How Many People Will Take Part In The Study?

Up to 15 participants.

What Is Involved In The Study?

Should you choose to participate, the research will take place over a six-month time frame, starting towards the end of June, 2013 for students and in August, 2013, for faculty. Participants will be interviewed at the beginning and end of the 6 months, using a semi-structured interview method via Skype. Shortly after the first interview, participants will take an assessment called the SCTi-MAP Professional Sentence Completion Form. For this, you complete 36 sentence stems in writing. It takes 60 minutes and you can do it anytime. Certified scorers will score the assessments and results will be kept confidential and known only to the participant and the researcher.

Following the assessment, participants will receive their results and 30 minutes of developmental coaching by a certified coach. Next, participants will learn about adult development and its application to teaching, mentoring, sustainability education, and leadership

development by participating in two, 2-hour video conference calls (for students), and a half day workshop August 23rd for faculty or in an online webinar if needed.

For the ensuing 6 months, participants will engage in an action inquiry process to continue to learn about, experiment with application, and reflect on their experience of learning about adult development. This will take the form of 1 hour conference calls or video conference calls (once a month), journaling with reflection questions, and occasional readings. At the end of the 6 month cycle, participants will retake the SCTi-MAP Professional Sentence Completion Form, engage in a second round of interviews, and receive the results of their SCTi-MAP after the interviews are complete. The total time commitment required for participation will be between 15 and 20 hours.

How Long Will I Be In This Study?

The study will take place over 6 months. The total time commitment on your part is 15-20 hours.

What Are The Risks Of The Study?

The risks to you are considered minimal. It is possible that taking the SCTi-MAP developmental assessment and receiving your results could create some emotional discomfort. While this is rarely the case, it does happen occasionally. Any concerns or discomfort can be addressed during the developmental coaching with a certified coach. Additionally discussing this topic (not your results which are kept confidential to you, the certified scorer and the researcher) could bring up some emotional challenges. Should you experience such discomfort, I will provide a list of counseling services and therapists that you can contact.

What Are The Benefits To Taking Part In This Study?

Participating in this research may offer an opportunity for personal and professional development. It can serve as a tremendous opportunity to learn about yourself, your students, and how your teaching and mentorship can be modified to meet your students right where they are, as well as supporting them to take their next developmental steps. It may also provide insights and strategies for meeting Prescott's PhD objectives, as well as offering tools and strategies for the development and impact of the sustainability field in general.

Attuning to development can help educators more effectively mentor their students to engage with more complexity, to reflect with greater depth of inquiry, to be aware of and integrate more perspectives in their approach to sustainability education, and to engage in transformative doctoral research and scholarship. Capacities that are considered foundational for sustainability education and transformative scholarship naturally emerge as someone moves along the developmental trajectory. Understanding stage development and how to teach and mentor in developmentally supportive ways can be an important tool for Prescott's Sustainability Education PhD program and the sustainability education and leadership field generally.

Participants will gain understanding of the constructive developmental framework and its application to transformative teaching and learning, and facilitating transformative change. Participation also offers the opportunity to explore its strengths and challenges, and to think critically about the application of a developmental framework to adult learning and a graduate sustainability education.

What about Confidentiality and Protection?

Study related records will be held in confidence. Names of participants will be changed so that the data can be viewed by the researcher, supervising faculty and possibly a research assistant (for transcription), with your identity protected.

The information you provide will be kept strictly confidential. The informed consent forms and other identifying information will be kept separate from the data. All materials will be kept in password-protected computer files on the laptop and back-up media of Abigail Lynam. The interview recordings will be listened to only by the Researcher and possibly a confidential Research Assistant (a transcriptionist), who has signed the attached Professional Assistance Confidentiality Agreement.

You will be assigned a different name for any quotes that might be included in the final research report. If any direct quotes will be used, permission will be sought from you first. The results of this research will be published in Abigail Lynam's dissertation and possibly published in subsequent journals, books or presentations.

The security of data transmitted over the Internet cannot be guaranteed, therefore, there is a slight risk that the information you send to Abigail Lynam via email will not be secure. The collection of such data is not expected to present any greater risk than you would encounter in everyday life when sending and/or receiving information over the Internet.

Participation in Research is Voluntary

You are free to decline to participate or to withdraw from this study at any time, either during or after your participation, without negative consequences. Should you withdraw, your data will be eliminated from the study and will be destroyed. The researcher is also free to terminate the study at any time.

Compensation

No compensation will be provided for participation.

Study Results

You may request a copy of the summary of the aggregate final results by indicating your interest at the end of this form.

Additional Information

If you have any questions about any aspect of this study or your involvement, please tell the Researcher before signing this form. You may also contact the supervising faculty if you have questions or concerns your participation in this study. The supervising faculty has provided contact information at the bottom of this form. You may also ask questions at any time during your participation in this study.

This informed consent form has been provided to you electronically, via e-mail or in person. Please print out one copy of this form and sign it, indicating you have read, understood, and agree to participate in this research. Keep this record for your files. Then please reply to the researcher via e-mail that you have read, understood, and agree to participate in the research. If you would like a copy of the study results, please also indicate this to the researcher in your

reply. The Institutional Review Board of Prescott College retains the right to access to all signed informed consent forms and other study documents.

I have read the above informed consent document and have had the opportunity to ask questions about this study. I have been told my rights as a research participant, and I voluntarily consent to participate in this study. By signing this form, I agree to participate in this research study. I shall receive a signed and dated copy of this consent.

Longitudinal Study Permission

It is likely that I will continue this study in the future and may want to contact you 1-2 years after this particular study is complete for follow up. Please initial here if you are open to being contacted in the future.

_____ Initials giving consent for contact in the future regarding follow up research

_____	NAME OF PARTICIPANT (please print)
_____	SIGNATURE OF PARTICIPANT
_____	DATE
RESEARCH SUPERVISOR	RESEARCHER
Rick Medrick, Ph.D.	Abigail Lynam, MS
Prescott College,	11402 81 st Ave NE
220 Grove Avenue	Kirkland, WA
Prescott, AZ 86301	98034
rmedrick@prescott.edu	abigaillynam@mac.com
303-320-0372	206-218-2489

Appendix C

Invitation for Participation in the Research**March 14th, 2013**

Dear Prescott Graduate (Faculty or Students)

I am writing with great excitement to invite you to be a participant in my doctoral research. The focus of my research is to explore the impact of integrating a developmental perspective (constructive development theory) into teaching, mentorship, and learning for sustainability education and leadership development. I have chosen Prescott College's Masters and PhD programs as a case study for my research and am inviting participation from faculty, administration, and PhD students. After you have read my invitation, I would love to follow up with a phone call to discuss any questions you might have. I need to know by March 22nd at the latest if you wish to participate. Your participation in my research is tremendously helpful for me and will hopefully be of value for you.

The overarching purpose of my research is threefold: to highlight the importance of worldviews, psychology and self-identity in learning, teaching and facilitating transformative change, to explore deepening the transformative nature of learning and leadership development in graduate education through the use of a developmental framework and assessment, and to contribute to advancing the application of adult developmental research to higher education and adult learning. Emerging research in adult development from the last 40 years has significant implications for teaching, learning, and transformative leadership development. Understanding and working with adult development can support the personal and professional development of educators and students. It offers insight into working with the diversity of perspectives, learning needs, and meaning making structures in a cohort of students (colleagues and/or stakeholders in a sustainability initiative), and can be considered a form of internal systems thinking. It can also serve as a tool for communication strategies, the design of sustainability initiatives and curriculum design. Adult development also sheds light on the transformative learning process.

Constructive-Developmental Theory

The constructive-developmental framework for ego development was originally created by Jane Loevinger (1970) and expanded upon by William Torbert (Torbert, et al., 2004), Susanne Cook-Greuter (1999, 2004), and Terri O'Fallon (2013). Ego development includes self-identity, meaning making structures, and cognitive, behavioral and emotional development. Overall, the leadership development framework and its associated assessment tool, the SCTi-MAP, describes nine ways of adult meaning making. It refers to stages as *action logics* because it focuses on how adults tend to reason and behave in response to their experiences.

Research Design

The research will take place over a six-month time frame, starting towards the end of April, 2013. Participants will be interviewed at the beginning and end of the 6 months, using a semi-structured interview method over the phone or via Skype. Shortly after the first interview, participants will complete a developmental assessment using the SCTi-MAP (see below for more information). Certified scorers will score the assessments and results will be kept confidential and known only to the participant and the researcher. Following the assessment, participants will receive their results and 30 minutes of developmental coaching by a certified coach. Next, participants will learn about adult development and its application to teaching, mentoring, sustainability education, and leadership development by attending a half-day workshop directly after the May PhD symposium or in an online webinar if needed. For the ensuing 6 months, participants will engage in an action inquiry process to continue to learn about, experiment with application, and reflect on their experience of learning about adult development. This will take the form of conference calls or video calls (every three weeks), journaling with reflection questions, and occasional readings. At the end of the 6 month cycle, participants will retake the SCTi-MAP, engage in a second round of interviews, and receive the results of their SCTi-MAP after the interviews are complete. The total time commitment required for participation will be between 15 and 20 hours.

(Depending on participants' schedules, the research with faculty might start at the beginning of the summer, with the workshop directly before or after the August orientation. This decision will be based on the scheduling constraints and needs of faculty)

Research Question

1. What are the personal and professional impacts of introducing a constructive developmental perspective (including knowledge, awareness of adult development and experience of a developmental assessment) to faculty and students in a post secondary program in sustainability education and leadership development?
 - a) How does awareness of and knowledge about development influence the practices and perspectives of sustainability educators?
 - b) What are the personal and professional influences on students and faculty?
 - c) What is the developmental impact of learning about adult development on the research participants?
2. How do student's or faculty's developmental stages influence the following:
 - a) Their perspectives and practices with regards to sustainability education?
 - b) Their experience learning about and perspectives on adult development?
 - c) Their experience as a student in Prescott College's sustainability education Ph.D. program and/or their perspectives and practices with regards to teaching and mentorship?

Potential Value for Research Participants

Participating in this research may offer an opportunity for personal and professional development. It can serve as a tremendous opportunity to learn about yourself, your students, and how your teaching and mentorship can be modified to meet your students right where they are, as well as supporting them to take their next developmental steps. It may also provide insights and strategies for meeting Prescott's PhD objectives, as well as offering tools and strategies for the development and impact of the sustainability field in general.

Attuning to development can help educators more effectively mentor their students to engage with more complexity, to reflect with greater depth of inquiry, to be aware of and integrate more perspectives in their approach to sustainability education, and to engage in transformative doctoral research and scholarship. Capacities that are considered foundational for sustainability education and transformative scholarship naturally emerge as someone moves along the developmental trajectory. Understanding stage development and how to teach and mentor in developmentally supportive ways can be an important tool for Prescott's Sustainability Education PhD program and the sustainability education and leadership field generally.

Participants will gain understanding of the constructive developmental framework and its application to transformative teaching and learning, and facilitating transformative change. Participation also offers the opportunity to explore its strengths and challenges, and to think critically about the application of a developmental framework to adult learning and a graduate sustainability education.

The SCTi-MAP Assessment Tool

The SCTi-MAP (also known as the Leadership MAP) is the most widely-used, highly validated, and reliable of developmental assessments (Cook-Greuter, 1999; Torbert, et al., 2004). Unlike others tools, the SCTi-MAP makes significant and subtle distinctions of the later stages of adult development. The SCTi-MAP identifies an individual's main stage or action logic within The Leadership Maturity Framework. This is the level from which an individual habitually makes sense of their experience and the world. The profile points to someone's unique strengths and vulnerabilities, their fallback positions and concerns, as well as areas of major challenge, and potential for personal growth.

The assessment is a projective technique, consisting of 36 sentence stems that deal with self-perceptions, social situations, and interpersonal relationships. The sentence stems enable participants to project their frame of reference into the incomplete sentences, while partially restricting the domain of the answers (Loevinger, 1979, 1998b). The structure of the language is assessed as much as the content of the sentences.

Testimonies from Participants in Pilot Study

In a mentored course during my second year of study, I invited fellow students in cohort 6, PhD faculty and course mentors to take the Leadership MAP and to participate in a half-day

workshop about the developmental perspective.

“I gained a lot from becoming aware of my own developmental level – it resonated with me in a way I would not have expected and helped me better understand my own ways, inner complexity, and orientation toward work.” Nicky

“At first I was resistant to developmental models. However, I feel like it has made me more compassionate and open to opinions and worldviews that are very different from mine. Rather than feeling disconnected because of the labels and categories, I actually feel more connected.” Jenny

“Doing the MAP assessment was really a good experience for me. It gave me a better understanding of myself, my own thought processes, and understanding of the people around me. It is helping me understand others’ perspectives, where they are, and their ability to take perspectives. ” Kerri

Addendum to the Research Invitation

This addendum includes more detail about the application of a developmental perspective to teaching, mentorship and sustainability education, and additional resources for further reading.

A Developmental Perspective and its Relationship with Sustainability, Teaching and Learning

“Sustainability is as much about the mindset through which the world is seen, as it is about the activities taken in support of it”

~Cynthia McEwen & John Schmidt, 2007

There is a growing recognition in the sustainability field, that our abilities to navigate the converging, complex challenges that we face, are dependent on our capacities and skills to work well together across multiple scales, to sustain ourselves and our work, and to work adaptively and transformatively, envisioning solutions that are global in scope and locally appropriate and sustainable. Self-identity, worldviews, values, emotional intelligence, and the behaviors that arise from these, play a significant role in the impact we have on the planet and one another. Increasing our focus on these interior dimensions of individuals and collectives can complement and improve the effectiveness of sustainability education and initiatives. Emerging research in the field of adult development offers some significant insights for cultivating capacities and skills in the realm of mindsets and worldviews.

In the field of sustainability education, we understand how critically important it is to bring to bear the best of human knowledge and wisdom (from our ancient histories and future

awareness), and to work systemically to integrate the needs and values of society, ecology, and economics in our work towards creating a better world for all. We understand the need to have many well-developed strategies and tools for cultivating ecological and social literacy, systems thinking capacities and values development. However, a more overlooked piece of the puzzle is paying more attention to the interior systems (learning needs, worldviews, etc.) of ourselves as educators, our students and/or our community members and stakeholders. One size definitely doesn't fit all, and no matter how well we teach or facilitate learning process, if we don't cultivate a deeper understanding of who our students are, where they are in their developmental journeys, and what their learning needs are, then our well thought out designs and learning experiences may not work as well as we hoped, or may generate resistance and confusion, more than transformation and understanding.

Turning our attention more deeply to our own and our students' interiors (psychology, worldview, values) can have a profound effect on who we are as educators and how effective and transformative we are in mentoring our students, collaborating with our colleagues, and facilitating transformative change. A developmental perspective is a form of internal systems thinking and can be a profound tool for teaching, learning, and leadership.

To be clear, looking at someone's cognitive, affective, and behavioral development – through the development of self-identity – is only one aspect of who a person is. There are many ways of understanding someone, including various typologies (gender, learning style, introvert/extrovert, etc), the cultural and family contexts they grew up in, the uniqueness of their personality and so on. This particular approach to understanding individuals and collectives is one of many approaches and can be a useful and potentially transformative tool.

Taking a developmental perspective is paradoxical. Many fear that it is another form of an oppressive hierarchy, of boxing another and judging them for who they are and aren't. These concerns are critically important and must be addressed. Paradoxically, I have found the developmental framework to be profoundly liberating and more honoring and deeply respectful of others, exactly *as* they are and in terms of what they value and believe, while also aware of their developmental potential (where they might be headed next), than any other educational framework (such as types of learners, etc). That's why I like to refer to it as a developmental embrace. And to address and take fully into consideration the concerns that are raised, it's critical to hold the framework lightly (it's theoretical and therefore is partial in its view), to remember that the developmental stages are types in people, rather than types of people, and that someone's developmental stage is more like their skeleton, while their full being and their uniqueness is the whole body – the skeleton plus the organs, muscles, ligaments, vascular systems, skin, etc.

Potential Benefits of a Developmental Perspective

A developmental perspective can be valuable in some of the following ways:

- Aware that an individual’s development influences their perspective on sustainability and experience of the curriculum, faculty can be more sensitive and discerning about who their students are and their developmental needs.
- Teaching about development and its connections to sustainability value systems or worldviews can support students to take a meta-perspective on the field and learn to navigate and work effectively with a diversity of value systems and meaning making structures, and it highlights some of the ways the field itself can further develop.
- Supporting students’ cognitive, behavioral and affective development can support the development of capacities and skills that Prescott College identifies as important for Sustainability Education. These include capacities to work well with a diversity of perspectives, engage with complexity and paradox, develop capacities for self-reflection, critical thinking and self-awareness, and approach sustainability work in interdisciplinary and transdisciplinary ways. It can also support students to move from ‘conviction to curiosity’ and from ‘ideologies to ideas that work’ (Pramod Parajuli).
- Awareness of one’s own development and the development of students can generate a greater flexibility and adaptive approach to mentorship and teaching – cultivating a dynamic balance between direct teaching and encouraging student directed learning. This includes transcending the dichotomy between “sage on the stage and guide on the side”; finding a dynamic way to include both and discern when one is needed more than the other.
- An understanding of development highlights the importance of integrating interiors (values, worldviews, psychology, subjective perspectives and experiences) in our teaching through practices such as dialogue, other ways of knowing, contemplative practices, reflection, shadow work, etc. These are seen as a complement to empiricism, understanding complex systems, and their role in sustainability challenges and solutions etc.

Additional Resources to further explore constructive development theory

1. JSE paper: Navigating a Geography of Worldviews
http://www.jsedimensions.org/wordpress/content/navigating-a-geography-of-sustainability-worldviews-a-developmental-map_2012_03/
2. Chapter 5 in Palmer, P. J., et al. (2010). *The heart of higher education: A call to renewal*. Boston: Jossey-Bass.
3. Drago-Severson, E. (2009). *Leading adult learning*. New Haven: Corwin Press. “Applying Constructive-Developmental Theories of Adult Development to ABE and ESOL Practices”, Helsing, Drago-Severson and Kegan, pdf available at:
http://www.ncsall.net/fileadmin/resources/ann_rev/rall_v4_ch5.pdf

Appendix D

THE SCTi-MAP Sentence Completion Test

Professional Sentence Completion Form SCTi-MAP (Please note: formatting is different for electronic form) © scg web 2006

Dr. Susanne Cook-Greuter

Assessment and Coaching, for Personal and Professional Excellence, and Well-Being

The Leadership Maturity Framework (LMF) refines and expands Loevinger's Ego Development Theory. The LMF integrates Bill Torbert's model of Personal and Organizational Transformation with Susanne Cook-Greuter's ongoing research in Adult Development and the assessment of personal maturity and transformational leadership capacity.

Certified scorers analyze your responses to this form in multiple ways. They then create your unique Leadership Development Profile. The SCTi-MAP identifies your center of gravity or action logic within The Leadership Maturity Framework. This is the level from which you habitually make sense of your experience and the world. The profile points to your unique strengths and vulnerabilities, your likely fallback positions as well as your areas of greatest challenge and potential for growth and personal transformation.

The SCTi-MAP is the most highly validated and reliable of existing, developmental assessments. Unlike other measures, the SCTi-MAP makes powerful and subtle distinctions at the high-end of the developmental spiral.

Directions for completion

- The following three pages contain thirty-six sentence beginnings of various kinds. Please just finish each sentence. There are no right or wrong answers.
- Allow yourself at most forty-five minutes of private time to finish the form at one sitting.

- After each response, use the tab key or cursor to move to the next form field.
- This document will be treated with the highest confidentiality. Please respond spontaneously and honestly.
- Make sure that your contact information is completed on this page and that your initials and date of completion (but not your name) are entered on all other pages.

Your details for return of the profile packet

Name

Position

Organization

Address

City, State, Zip

Phone

Cell

Email

First language

Please provide the following data for ongoing research and development of this instrument.
Thank you.

Your gender Your age Education (highest degree)

Your Initials Date

Question No 1	Raising a family
Question No 2	When I am criticized
Question No 3	Change is
Question No 4	A man's job
Question No 5	Being with other people
Question No 6	The thing I like about myself is
Question No 7	My mother and I
Question No 8	What gets me into trouble is
Question No 9	Education
Question No 10	When people are helpless
Question No 11	Women are lucky because
Question No 12	A good boss
Question No 13	A girl has a right to
Question No 14	The past

- Question No 15 When they talked about sex, I
- Question No 16 I feel sorry
- Question No 17 When they avoided me
- Question No 18 Rules are
- Question No 19 Crime and delinquency could be halted if
- Question No 20 Men are lucky because
- Question No 21 I just can't stand people who
- Question No 22 At times s/he worried about ("S/he" should be read "she" by women,
"he" by men)
- Question No 23 I am
- Question No 24 If I had more money
- Question No 25 My main problem is
- Question No 26 When I get mad
- Question No 27 People who step out of line at work
- Question No 28 A husband has a right to
- Question No 29 If my mother
- Question No 30 If I were in charge
- Question No 31 My father
- Question No 32 If I can't get what I want
- Question No 33 When I am nervous
- Question No 34 A woman's career is
- Question No 35 My conscience bothers me if
- Question No 36 Sometimes s/he wished that "S/he" should be read "she" by
women, "he" by men"

Appendix E

Interview Protocol

Interview I: Pre-SCTi-MAP and Introduction of a Developmental Perspective**Welcome:**

Thank you for agreeing to participate in this study. As you know I am exploring the impact of introducing an adult developmental perspective (including knowledge, awareness of development and experience of a developmental assessment) in a post secondary program in sustainability education and leadership development?

I will try to limit my comments during the interview because I really want to hear what you have to tell me. However, if at any point you want more information or clarification on any point, please do not hesitate to ask.

With your permission, I will digitally record this interview. The purpose of the recording is two-fold: first, so that I can accurately capture what you share; and second, so that I do not have to write extensive notes, which will allow me to fully listen to what you are telling me. I may jot some notes down here and there just simply as reminders to myself. The recording will remain confidential. Only I and a transcriber will have access to the recording.

As I continue to go further with the interviews and analyze the data, with your permission, I would like to contact you for clarification and /or to ask additional questions that may arise in later interviews.

Do you have any questions before we begin?

Do you have any need for clarification on anything that has been said?

Do you need anything before we begin?

Intention of Interview

I want to remind you that the purpose of this study is to explore impact of introducing a developmental perspective (including knowledge, awareness of development and experience of a developmental assessment) in a post secondary program in sustainability education and leadership development?

Interview Questions

1. What attracted you to participate in this study?
2. Tell me about your approaches to sustainability education?

- a. How do you define sustainability?
 - b. What do you value in sustainability education? What do you aim for?
 - c. What do you tend to include and not include?
 - d. Are there other approaches to SE that you use?
3. Can you describe some of the ways your definitions or approaches to sustainability education have changed over time?
- a. Tell me how these changes link to your own development or life experiences?
 - b. What are some specific experiences that have had a significant impact or influence on how you approach sustainability education?
4. Tell me about your experiences in Prescott's PhD program.
- a. What have you loved, valued, disliked and/or struggled with?
 - b. What is your perspective on the overarching intent, values, objectives and goals of the PhD in Sustainability Education program?
 - c. How might your views and values differ from other students and faculty in the program? What might have served your learning better?
5. Can you describe how you approach teaching and mentoring students?
- a. How would you describe your relationships with students? What aspects of their development do you pay attention to?
 - b. What do you aim for?
 - c. How does your knowledge and experience of students – either individually or collectively influence how you design curriculum, and approach mentorship and teaching?

6. What comes to mind/heart when you hear the terms adult development and as you imagine or learn about its possible relationships with sustainability education, teaching and mentoring?
 - a. What is your particular experience with adult development theory and its application to sustainability education?
 - b. How might a student's developmental stage influence their experience and learning in a program like Prescott College's sustainability education PhD program?
 - c. How might a faculty's developmental stage influence their orientation towards teaching and mentorship of students, curriculum design and their overall beliefs and values towards sustainability education and leadership development?
 - d. How does your developmental stage influence how you teach/mentor students or how you have taught/mentored students? Has your teaching/mentoring changed as a result of your beliefs?

7. Is there anything I have not asked you that you would like me to, or expected me to ask?
Is there anything else you would like to add?

Conclusion:

Thank you for your generosity of time, for your insights, for your openness. If anything else comes up for you after the interview, please let me know.

Interview II*Intention of Interview*

I want to remind you that the purpose of this study is to explore impact of introducing a developmental perspective (including knowledge, awareness of development and experience of a developmental assessment) in a post secondary program in sustainability education and leadership development? During this interview I will ask you about your experience of learning about the adult developmental model, and your experience of participating in the study. Please

be honest with me and don't hesitate to share critical thoughts or feelings. I really want to know what your experience has been.

Interview Questions

1. What was it like for you to learn about adult development personally?
 - a. How did you experience the process of taking the SCTi-MAP, receiving your results and the developmental coaching?
 - b. What was it like for you to participate in the Action Inquiry process?
 - c. Do you feel you learned enough about this model of adult development to start applying in your personal and professional life? How so?
2. What was it like for you to learn about adult development professionally?
3. Can you imagine drawing on a developmental perspective or approach in your:
 - a. Sustainability education work?
 - b. Teaching, mentorship, curriculum design?
 - c. Leadership?
 - d. Communication with fellow students and colleagues?
4. What hasn't worked so well or been challenging for you regarding adult development?
5. How might a student's developmental stage influence their experience and learning in a program like Prescott College's sustainability education PhD program? How might a student's developmental stage influence their experience and learning in a program like Prescott College's sustainability education PhD program?
6. How might a faculty's developmental stage influence their orientation towards teaching and mentorship of students, curriculum design and their overall beliefs and values towards sustainability education and leadership development?

7. Is there anything I have not asked you that I should? Is there anything else you would like to add?

Conclusion:

Thank you for your generosity of time, for your insights, for your openness. If anything else comes up for you after the interview, please let me know.

Appendix F

SCTi Validity and Reliability

The following is quoted from Brown (2012) and reprinted with permission.

Validity. Construct validity refers to “the extent to which an operationalization measures the concept it is supposed to measure” (Bagozzi, Yi, & Phillips, 1991, p. 421; Cook & Campbell, 1979). The WUSCT is a structural developmental measure, meaning that it assesses the developmental stage of a psychological structure. The validity of such measures is typically difficult to assess using classic principles (Cronbach & Meehl, 1955) because of the complex relationship between behavior and the underlying psychological structures (Loevinger, 1993). Despite this challenge, the WUSCT “has demonstrated impressive construct validity... [and] is arguably the most extensively validated projective technique” (Lilienfeld, Wood, & Garb, 2000, p. 56). The WUSCT is considered a well-validated projective technique because it aggregates scores across multiple items, contains ambiguous stimuli relevant to the construct being assessed, and employs an iterative approach to progressively improving the test (Lilienfeld, et al., 2000). The subsequent sections discuss the reliability and various dimensions of validity (substantive, convergent, discriminant, predictive and incremental) of the WUSCT (for comprehensive reviews see Cohn & Westenber, 2004; Hauser, 1976; Loevinger, 1979; Manners & Durkin, 2001).

Reliability. An instrument is considered reliable if repeated measurements produce consistent results (Pedhazur & Schmelkin, 1991). For projective techniques like the WUSCT, reliability is based upon interrater agreement and participant response (Redmore & Waldman, 1975). In multiple studies across diverse populations, the WUSCT has consistently demonstrated high interrater reliability (Loevinger, 1979; Manners & Durkin, 2001). Significant correlations

were also found in studies of test-retest, equivalent forms, internal consistency, split-half, and pretest-posttest scores (Novy, Blumentritt, Nelson, & Gaa, 1997; Novy & Francis, 1992; Redmore & Waldman, 1975; Weiss, Zilberg, & Genevro, 1989). The WUSCT was found to be vulnerable to lower retest scores over short intervals due to decreased motivation (Redmore & Waldman, 1975). It has been found to be virtually impossible to contrive a result on the WUSCT. Experiments have shown that persons almost never succeed in producing a protocol at later action-logic [stage] from their own, even after the theory underlying the scoring procedure has been explained to them. (Redmore, as cited in Torbert & Associates, 2004, p. 212)

Substantive validity. A measurement instrument has substantive or content validity when it includes items that accurately reflect the conceptual definition of the construct domain (Schwab, 1999). The WUSCT has had to overcome two key challenges in demonstrating this, but has done so successfully. First, Loevinger's concept of the self that progresses through ego development (the framework upon which the WUSCT is based) needed to be demonstrated to be theoretically coherent and of a unitary nature. Multiple studies (Broughton & Zahaykevich, 1988; Labouvie-Vief, 1993; Noam, 1993), which challenged these qualities, were not successful in demonstrating otherwise (Loevinger, 1984; Loevinger, Wessler, & Redmore, 1970). Other studies took a different tack and tried to identify subsets of factors to Loevinger's concept of the self (e.g., moral or responsibility items); yet, these, too, were unsuccessful. Thus, ego development has been determined to be a single construct.

The second challenge for ego development as related to substantive validity was the issue of sequentiality. Establishing sequentiality for a developmental theory is critical to establishing substantive validity (Loevinger, 1993, 1998b). Multiple longitudinal studies – ranging from adolescents to young adults to adults – have delivered sufficient support for the sequentiality of

ego development stages (Adams & Fitch, 1982; Loevinger, et al., 1985; Manners & Durkin, 2001; Martin & Redmore, 1978; Redmore & Loevinger, 1979; Westenberg & Gjerde, 1999). Other studies have demonstrated that ego development has asymmetry of comprehension, meaning that people can understand a stage earlier than their own, but not stages much later than their own (Loevinger, 1993, 1998b; Redmore, 1976). This also supports the case for sequentiality.

Convergent validity. An instrument has convergent validity when there is high correspondence among multiple approaches to measuring the same construct (Schwab, 1999). It is challenging to examine threats to the convergent validity of the WUSCT because of its unique nature. Nonetheless, five studies have provided significant support for the convergent validity of ego development (Manners & Durkin, 2001). These studies examined correlations between the WUSCT and alternate measures for ego development. The studies included unstructured interviews (Lucas, 1971; Sutton & Swensen, 1983), the Thematic Apperception Test (Sutton & Swensen, 1983), a California Q-sort of personality descriptors derived from ego stage milestones (Rozsnafszky, 1981), a California Q-sort of personality variables expected to be related to ego stage (Westenberg & Block, 1993), and longitudinal comparisons with the revised California Psychological Inventory (Helson & Wink, 1987).

Discriminant validity. An assessment instrument successfully demonstrates discriminant validity when it is shown that its results are not highly correlated with the results of other assessments that measure theoretically different concepts (Campbell & Fiske, 1959). The three variables that have been used to challenge the discriminant validity of ego development are verbal fluency, intelligence, and socioeconomic status (Hauser, 1976; Loevinger, 1979; Manners & Durkin, 2001). On the issue of verbal fluency, multiple studies and a meta-analysis have

inquired into the issue (Cohn & Westenberg, 2004; Loevinger & Wessler, 1970; McCrae & Costa, 2003). It was determined that the word count for responses to the sentence stems are related; however, the correlations indicate that the WUSCT measures more than mere verbal fluency (Cohn & Westenberg, 2004; Manners & Durkin, 2001). With respect to the potential correlation between the WUSCT and an intelligence test, a meta-analysis was conducted. Cohn and Westenberg's (2004) findings, based upon 25 samples of 2,307 participants, unequivocally demonstrated the conceptual distinction between ego development and intelligence. Multiple studies (Browning, 1987; Redmore & Loevinger, 1979; Snarey & Lydens, 1990) inquired into the potential relationship between ego development and socioeconomic status. It was ultimately determined that there are many pathways for ego development, and that the relationship between attainment of a developmental stage and socioeconomic status varies, depending on the indicators used, populations sampled, and other sociopolitical factors (Manners & Durkin, 2001; Snarey & Lydens, 1990). Thus, the WUSCT has been demonstrated to have discriminant validity when compared to these three variables – verbal fluency, intelligence, and socioeconomic status – most likely to be confounded with ego development.

Predictive validity. Predictive or criterion-related validity reflects the degree to which an assessment instrument is empirically associated with some criterion (DeVellis, 2003). It is not expected that there would be a one-to-one correspondence between ego stage and behavior, as ego development is an underlying frame of reference for interpreting the self and the world (Loevinger, 1976; Manners & Durkin, 2001). Nonetheless, a large variety of outcomes have been correlated with specific stages, or groups of stages, of ego development. For example, ego stages demonstrate a curvilinear relationship to conformity. People at preconventional and post-conventional stages are significantly more likely to exhibit nonconformist behavior than those

within the three conventional stages (Hoppe & Loevinger, 1977; Westenberg & Block, 1993). Among adolescents, Hauser and colleagues (J. P. Allen, Hauser, Bell, & O'Connor, 1994; Hauser, et al., 1984; Hennighausen, Hauser, Billings, Schultz, & Allen, 2004; Noam, et al., 1984) found significant correlation between self-stages and impulsiveness, empathy, responsibility, problem solving, conflict resolution, hostility, and inner control. Higher self-stages in adult women have been associated with personal adjustment, nurturance, responsibility, tolerance, inner control, capacity for status (White, 1985), and differential personality change (Helson & Roberts, 1994). As a final example, in studies of phenomenological self-awareness, later stages of ego development significantly correlated with greater identification of variability in the phenomenal experience of the self, increased valuing of the quality of variability, more contextual variation, and additional polarization in the self (Pazy, 1985).

Incremental validity. Finally, incremental validity refers to the degree to which the inclusion of a given measure increases prediction accuracy above that of predictions from other measures (Beutler & Groth-Marnat, 2003). In a meta-analysis, Cohn and Westenberg (2004) identified 16 studies that examined the incremental validity of ego stage after statistically controlling for the influence of intelligence. Within those studies, 29 out of 31 statistical tests (94%) demonstrated significant correlations, with ego stage explaining between 4% and 36% of the variability, depending on the criterion variable (Cohn & Westenberg, 2004).

Appendix G

Transcriptionist Confidentiality Form

Professional Assistance Confidentiality Agreement

Title of Project: Integrating a Developmental Perspective into Adult Learning, Sustainability Education and Leadership Development

Name of researcher and affiliation with Prescott College: Abigail Lynam, student

I have agreed to assist Abigail Lynam in her research study on adult development and sustainability education in the role of transcriptionist.

I understand that all participants in this study have been assured that their responses will be kept confidential and anonymous. I agree to maintain that confidentiality and anonymity. I agree that no materials will remain in my possession beyond the operation of this research study. I further agree that I will make no independent use of any of the research materials from this project.

Signature_____

Date_____

Printed Name_____

Title_____

Appendix H

Action Inquiry Process

For the purposes of the research, participants were asked to commit up to 20 hours over a six-month period. This was requested to provide time for learning about and engaging with the application of a developmental perspective to teaching, mentorship, and sustainability education and leadership development. During the six months, there were five cycles of learning (sessions), with three weeks for each cycle/session, each of which includes an action-logic focus, readings, questions to guide the reflective journaling and an hour-long reflective conference call.

Adult Development Research: Action Inquiry Process

Action Inquiry Cycles – Learning about, applying, reflecting, and practicing development

Each cycle will include reading, journaling and a 1-hour skype or conference call to reflect and learn together.

For more in depth overview reading I suggest the following articles and books

- Audio: Steve McIntosh Understanding Evolution's Purpose, August 26th
<http://beyondawakeningseries.com/blog/archive/>
- O'Fallon, T. (2011). StAGES: Growing up is waking up--interpenetrating quadrants, states and structures. Retrieved from:
http://www.pacificintegral.com/docs/StAGES_OFallon.pdf
- Drago-Severson, E. (2012). *Helping Educators Grow: Strategies and Practices for Leadership*. Harvard Education Press.
- Cook-Greuter, S. R. (2005). Ego development: Nine levels of increasing embrace. Retrieved from <http://www.cook-greuter.com/9%20levels%20of%20increasing%20embrace%20update%201%2007.pdf>
- McNamara, R. L. (2013). *The Elegant Self, A Radical Approach to Personal Evolution for Greater Influence in Life*. Performance Integral.
- Torbert, W. R., Cook-Greuter, S. R., Fisher, D., Foldy, E., Gauthier, A., Keeley, J., et al. (2004). *Action inquiry: The secret of timely and transformational leadership*. San Francisco: Berrett-Koehler.

Cycle 1 Application to Education

- Developmental Stage: Expert and Achiever

- Reading:
 - Expert and Achiever Overview
 - Helsing, D., Drago-Severson, E. & Kegan, R. (2001). Applying Constructive–Developmental Theories of Adult Development to ABE and ESOL Practices. Retrieved at http://www.ncsall.net/fileadmin/resources/ann_rev/rall_v4_ch5.pdf
 - Audio: RSA Lecture: Robert Kegan The Further Reaches of Adult Development: Thoughts on the 'Self-Transforming Mind' http://www.thersa.org/_data/assets/file/0009/1523385/20130523RobertKegan.mp3
 - Handouts: How do you know? Education chart, Kegan compared with Action Logics
- Reflection Questions
 - What is it like to learn about your own development?
 - How has learning about your *own* development influenced your thinking about education and teaching?
 - How might an individual at an Expert and/or Achiever developmental stage approach sustainability education and leadership? What kind of mentorship might support individuals at these stages of development and their next steps developmentally?
- Optional additional reading
 - Drago-Severson, E. (2012). *Helping Educators Grow: Strategies and Practices for Leadership*. Harvard Education Press.
 - Palmer, P. J., et al. (2010). *The heart of higher education: A call to renewal*. Chapter 5. Boston: Jossey-Bass.

Cycle 2 Sustainability Applications

- Developmental Stage: Individualist
- Reading:
 - Individualist Overview
 - Lynam, A. (2012) Navigating a Geography of Sustainability Worldviews: A Developmental Map. *Journal of Sustainability Education*. Retrieved at

http://www.jsedimensions.org/wordpress/content/navigating-a-geography-of-sustainability-worldviews-a-developmental-map_2012_03/

- Brown, B.C. (2012). *The Future of Leadership for Sustainability – Part One and Two*. Kosmos Magazine, Fall/Winter.
- Handouts: Reasons for choosing sustainability, Sustainability chart.
- Reflective Questions
 - How might your understanding the development of others influence how you approach to sustainability education?
 - How might an individual at an Individualist developmental stage approach sustainability education and leadership? What are some of the gifts and limitations/blind spots of this phase of development’s approach to sustainability and education? What kind of mentorship might support individuals at this stage of development and their next steps developmentally?
- Optional additional resources
 - Audio: Barrett Brown, Conscious Leadership for Sustainability
<http://integrallife.com/ken-wilber-dialogues/conscious-leadership-sustainability>
 - Divecha, S. Brown, B. (2013). Integral Sustainability: Correlating Action Logics with Sustainability to Provide New Insights into the Dynamics of Change. Proceedings Integral Theory Conference, 2013.
 - Institute for Cultural Evolution, (2012). Plan for Climate Change Amelioration. (A developmental approach). <http://www.culturalevolution.org>
 - McEwen, C. A. & Schmidt, J. D. (2007). Leadership and the corporate sustainability challenge: Mindsets in action, Retrieved from <http://www.avastoneconsulting.com/MindsetsInActionReport.html>

Cycle 3 Application to Mentorship

- Developmental Stage: Strategist– Application to Sustainability Education and Teaching/Mentorship
- Reading:
 - Strategist Overview
 - Examples of integrating worldview development in climate change (Strategist in action)

- An excerpt from a document looking at climate change through developmental lenses - an example of a strategist approach to climate change work
 - Excerpt from *Integral Adaptation to Climate Change* by Karen O'Brien (another example of strategist approach to climate change work)
 - Institute for Cultural Evolution 3 minute video, Steve MacIntosh and Carter Phipps talk about the conflict between modernism and postmodernism <http://www.youtube.com/watch?v=H7uCZM8guwU>
- Mentorship articles: Development and Mentoring by Abigail Lynam
- Reflective Questions
 - What are you learning about yourself and your work through the developmental lens?
 - How might a Strategist orient to Sustainability Education and Prescott's PhD or MAP program?
 - How might you mentor differently with a developmental awareness?

Cycle 4 Your own application and design

- Developmental Stage: Construct Aware– Application to Sustainability Education and Teaching/Mentorship
- Reading:
 - Construct Aware
 - Development videos
 - Development and Sustainability by Abigail Lynam
 - Torbert, W. & Rooke, D. (2005). Seven Transformations of Leadership. *Harvard Business Review*, 4, 2005. <http://aliainstitute.org/wp-content/uploads/2012/12/seven-transformations-of-leadership.pdf>
- Reflective Questions
 - How might an individual at Construct Aware approach sustainability education and leadership? What kind of mentorship might support individuals at this stage of development and their next steps developmentally?
 - What are you learning about how to work with a developmental perspective with collectives and organizational development?
- Optional additional resources

- Rowson, J. (2011). RSA Report: Transforming Behavior Change
http://www.thersa.org/_data/assets/pdf_file/0006/553542/RSA-Transforming-Behaviour-Change.pdf

Cycle 5 Presentations and Final Reflections

- Developmental Stage: Transpersonal – Application to Sustainability Education and Teaching/Mentorship
- Reading:
 - Transpersonal Overview
 - Ethics of working developmentally
 - Integrating development into higher education
- Options for personal application projects
 - 1) Dive more into your own developmental process – exploring more deeply where you are developmentally, what has contributed to your development in the past (your developmental autobiography), how your development might be influencing your work, your relationships, your sense of self and meaning making, exploring your developmental edges, and emerging experiences. Exploring practices to support your development, etc.
 - 2) Studying others and learning about their development – in application and lived/embodied experience
 - 3) Developmental mentoring and teaching – reading about, gathering practices etc.
 - 4) Development and sustainability – communication, initiative design, sustainability through the stages, supporting the development of the field
 - 5) Evolutionary and developmental thinking/perspectives in general – drawing from resources such as Carter Phipps book *Evolutionaries*, Jennifer Garvey Berger’s *Changing on the Job*, or McNamara’s *Elegant Self*
 - 6) Looking at development of organizations, groups, systems
 - 7) Examining a particular issue or challenge through a developmental lens
 - 8) Looking for the different stages in action – an applied learning activity
 - 9) Finding the stages in yourself – perspective taking inquiry
 - 10) Create visually oriented material to convey some of your learning and to improve on the more linear visuals used in the adult development field

Appendix I

The Seven Action Logics of Environmental Leadership

Table 23

The Seven Action Logics of Environmental Leadership

Action logic & percent of management population	Possible implications for environmental leadership	Strengths	Limitations
Opportunist (5%)	Little sensitivity to environmental issues except when they represent a threat or foreseeable gain for the manager; resistance to pressure from stakeholders, who are viewed as detrimental to economic interests; vision of the environment as a collection of resources to exploit (DSP); sporadic and short-term measures	May seize certain environmental opportunities or react quickly in a crisis; superficial actions may be showcased in opportunistically	Pursuit of individual interests without regard for environmental impacts; comprehension of environmental issues limited to immediate benefits or constraints
Diplomat (12%)	Supports environmental questions due to concern for appearances or to follow a trend in established social conventions; concerned with soothing tensions related to environmental issues within the organization and in relations with stakeholders	Reactive attitude with respect to environmental pressures; consideration of regulatory constraints and the impact on the organizational image	Superficial conformity to external pressures; absence of real reappraisal of how things are done, statements often contradict actions
Expert (38%)	Considers environmental issues from a technical, specialized perspective; reinforcement of expertise of environmental services; seeks scientific certitude before acting; preference for proven technical approaches	Development of environmental knowledge within the organization; implementation of environmental technologies	Limited vision and lack of integration of environmental issues; denial of certain problems; has difficulty with collaboration
Achiever (30%)	Integration of environmental issues into organizational objectives and procedures; development of environmental committees integrating different services; response to market concerns with respect to ecological issues; concern for improving performance	Efficient implementation of ISO 14001 type management systems; follow-up of environmental performance; more widespread employee involvement; pragmatism	Difficult questioning management systems in place; conventional environmental goals and measurements; lack of critical detachment with respect to conventions

Individualist (10%)	Inclined to develop original and creative environmental solutions, to question preconceived notions; development of a participative approach requiring greater employee involvement; more systemic and broader vision of issues (NEP)	Active consideration of the ideas and suggestions of diverse stakeholders; personal commitment of the manager; more complex, systemic and integrated approach	Discussions that may sometimes seem long and unproductive; idealism that may lack pragmatism, useless questioning of issues; possible conflict with Experts and Achievers
Strategist (4%)	Inclined to propose a pro-environmental vision and culture for the organization, more in-depth transformation of in-house habits and values; development of a more proactive approach conducive to anticipating long-term trends; marked interest for global environmental issues; integration of economic, social and environmental aspects	Changes in values and practices; harmonization of the organization with social expectations; real integration of the principles of sustainable development; long-term perspective	Approach that may seem difficult to grasp and impractical; risk of disconnect with pressures to produce short-term profits; scarcity of Strategists
Alchemist (Construct Aware) (1%)	Re-centering of the organization's mission and vocation with regard to social and environmental responsibilities; activist managerial commitment; involvement in various organizations and events promoting harmonious societal development; support for global humanitarian causes	Active involvement in the comprehensive transformation of the organization and society; concern for authenticity, truth and transparency; complex and integrated vision	Risk of scattering managerial and organizational efforts, to the benefit of the common good; losing touch with the primary organizational vocation; extreme rarity of Alchemists

Note: Adapted from “The action logics of environmental leadership: A developmental perspective” by O. Boiral, M. Cayer, & C. M. Baron, 2009, *Journal of Business Ethics*, 85, 479-499. Reprinted with permission. Data for the percentages of managers at each action logic from (Rooke & Torbert, 2005). For additional research on the percentages of the adult population for each action logic, based upon a large sample (n = 4510), see Cook-Greuter (1999, 2004).

Appendix J

Ecological Selves

The Eight Ecological Selves, created by Esbjorn-Hargens, quoted from Rogers (2012, p.32-34).

The eight ecological selves are called the Eco-Guardian, the Eco-Warrior, the Eco-Manager, the Eco-Strategist, the Eco-Radical, the Eco-Holist, the Eco-Integralist, and the Eco-Sage, and are described below:

The Eco-Manager (Expert), likely to be more common in modern society, is the self who conforms to societal norms. They are rule-oriented and they have a sense of self-derived from how others see them. As a result, this type tends to be drawn to groups and it is through the group that they express self. Often with a literal interpretation of ideas, their focus towards nature tends to be in enforcing rules and laws, believing nature can be managed for both its benefit and for humans. They believe in order and appreciate a system that rewards those who follow the rules and authority and punish those who do not. Some environmental group activity would fit this category, such as The Nature Conservancy's push for conservation legislation or the work of the US Environmental Protection Agency.

The Eco-Strategist (Achiever), explores the world through a scientific lens. Based on a strong sense that the world can be explained rationally, this self values independence and confidence. This is the self that looks outward towards the world, focusing on attaining the good things in life. They value success and reward for hard work and compete for material rewards and recognition. Using a rational approach towards nature, they see that nature can be measured, explained, used for our benefit. They do want to make things better and believe that science and technology is a way to accomplish greater good for more people. They value science and take a positive view of the future. One can see threads of this perspective in the ecological economics literature that focuses on the idea of balancing economies and ecology. The work of urban planners also serves as an illustration of efforts to build complex designs to create healthy, sustainable communities. In our modern society, this is a commonly held frame, out of which many people operate.

The Eco-Radical (Individualist) is based on the idea of the pluralist self – the one who highlights how we are all connected through similar experiences. The first of the types that really begin to emphasize systems thinking in a deep way, the Eco-Radical is patient with complexity and paradox. They tend to value personal experience and also integrate scientific views with more subjectivity. This is a more post-modern way of thinking in that they tend to take the approach that truth can be many things, and that much of what we think we know is open to interpretation. This worldview often focuses on liberation – liberation from domination and oppression. They appreciate equality and see the natural world from this perspective, as an equal partner in the web of life. They value inclusivity and often approach problem solving in a consensus-based way. The approaches used by Eco-Radicals are commonly seen in our society, such as aspects of ecofeminism, which argues that human societies have systematically dominated and destroyed nature and we need to free ourselves from these oppressive hierarchies. Other examples could

also include green parties, which adopt broad platforms for reducing hierarchy by elevating multiple voices.

The Eco-Holist (Strategist), focuses on autonomy. This worldview is most comfortable with complexity and holding multiple views. They embrace the many layers of self, and are able to reflect on their own complexity, both light and dark. They see the world as multi-dimensional and dynamic, which allows them to also see competing values and perspectives that may have equal weight. This view allows them to operate out of a strong systemic framework. They seek flexible, open systems that allow for multiple possibilities. In this space, transparency becomes important because they emphasize the dynamics of complex systemic interactions. The definition of sustainable development, “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” is a good expression of an Eco-Holist type of approach. Note the complexity of holding the intergenerational aspect, the idea of temporality, and the responsibility for people into the future not yet seen.

The Eco-Integralist (Construct Aware), is the seventh of the eight ecological selves and moves from the space of focusing on complexity and systems to one of emotionally confronting and embracing the nature of all life forms and manifestations. This type can experience deeply our existential natures while also being somewhat detached from them. They experience the world as a temporary reality, and while they appreciate each phenomenon, they do not cling to a view about how things should be, but focus on what is possible. There are specific individuals who manifest this frame as a worldview, most notably Wangari Maathai’s work in Kenya to re-forest the country and Christine Jean in France with her work on the Loire River (see Wallace, 1993). In each case, they speak of nature in this complex, robust ways, while holding the pain of the work that they do alongside the good.

The Eco-Sage (Transpersonal), the last of the ecological selves, and quite rare, is the self that is ego-aware, or also known as the unitive self. In this conceptualization, the Eco-Sage is the self that unifies multi-dimensional elements across multiple contexts and see them in service to humanity. They understand others in developmental terms and view people without judgment. This identity is less about any one subject per se, such as the environment, but more about an advanced stage of consciousness that focuses on being. Their approach to the natural world is to value the subtle ways in which we are connected as human beings with the natural realm and will explore these perspectives from a deeply transpersonal space. One might be inclined to place a spiritual leader in this category, one views the world as highly nuanced, with different layers of reality. There are few concrete examples of the Eco-Sage in our society although some of the writings of eco-philosophers such as Arne Naess would be an example with his emphasis on the systems of life from both a material and spiritual aspect (Naess et al., 2008).

Appendix K

Divecha and Brown’s Sustainability and Action Logics Model

Table 24

Divecha and Brown’s Sustainability and Action Logics Model

Actions Logics	Characteristics / Identifiers	Person
<i>Opportunist Needs rule impulses</i>	Short time horizon; focus on concrete things; manipulative; views rules as loss of freedom; views luck as central; rejects critical feed-back; externalizes blame; distrustful; stereotypes; hostile humor; flouts unilateral power; treats "what can get away with" as legitimate; punishment = ‘eye for an eye’; positive ethic = even trade; timely action = "I win"	1 st person – first person perspective is characterized by a focus on self. Focus: awareness of quality of concrete self
<i>Diplomat Norms rule needs</i>	Committed to routines; observes protocol; avoids inner and outer conflict; conforms; works to group standard; seeks membership, status; often speaks in favorite phrases, clichés; loyalty to immediate group; sin = hurting others; positive ethic = nice, cooperative	2 nd person – second person perspective is characterized by a focus on self and another. Focus: awareness of the quality of concrete operations
<i>Expert Craft logic rules norms</i>	Interested in problem-solving; seeks causes; critical of self/ others based on own craft logic; wants to stand out, be unique; perfectionist; chooses efficiency over effectiveness; dogmatic; values decisions based on technical merit; sees contingencies, exceptions; details with a system but not categorizing across competing different sorts of systems	3 rd person – early third person perspectives add to one’s awareness the quality of abstract and formal operational thinking. Focus: an observer who can focus on another self and other(s)
<i>Achiever System effectiveness rules</i>	Long-term goals; future is vivid; feels like initiator, not pawn; seeks generalizable reasons for action; seeks mutuality, not hierarchy, in relationships; appreciates complexity, systems; feels guilt if does not meet own standards; blind to own shadow, to the subjectivity behind objectivity; positive ethic based on self-chosen (but not self-created) ethical system	3 rd person – later third-person perspective adds to one’s awareness the prioritization and categorization of abstract and formal operational thinking. Focus: an observer categorizing and integrating between another self and other(s)

<p>Individualist <i>Relativism</i> <i>rules single</i> <i>system logic</i></p>	<p>Takes a relativistic perspective; focuses more on both present and historical context; often aware of conflicting emotions; experiences time itself as a fluid, changeable medium, with piercing, unique moments; interested in own and others' unique self-expression; seeks independent, creative work; attracted by difference and change more than by similarity and stability; less inclined to judge or evaluate; starts to notice own shadow (and own negative impact); possible decision paralysis</p>	<p>4th Person – early fourth-person perspective involves one’s awareness of the quality and contexts. Focus: on an observer; observing another observer; observing another self and other(s)</p>
<p>Strategist Most valuable principles rule relativism</p>	<p>Recognizes the importance of principle, contract, theory, and judgment - not just rules, customs, and exceptions - for making and maintaining good decisions; relativity, moderated by understanding of complexity and natural hierarchy, allowing principled choices - approximation for action; categorized complexity; beyond win-lose to “positive-sum” games, in which many win; high value on mutuality and autonomy; interweaves short-term goal-oriented with longer- term developmental process-oriented; aware of paradox that what one sees depends on one's action-logic, creative at conflict resolution</p>	<p>4th Person – late fourth-person sees an iterating horizontal pattern; contexts within contexts within contexts – contextualizing and prioritizing the individualists quality and context view of systems.</p>
<p>Alchemist Deep processes and intersystemic evolution rule principles</p>	<p>The process of meaning-making is always inadequate; meaning understood as constructed from increasingly complex theories arising from reification and segmentation of reality; reality an ever-changing, dynamic flux of phenomena; sense unitive nature of reality but recognize meaning-making process can never accurately articulate reality; Collapse of subtle stage to causal emptiness and fullness holding of paradox and pole; may initially struggle to find agency and priority in <u>cascade of conflicting</u></p>	<p>5th Person - fifth-person perspective includes one’s awareness of the quality, constructs Focus: seeing the previous pattern of observing observers observing; can cycle through multiple cascading person perspectives*</p>
<p>Ironist</p>	<p>Focuses on being as well as on witnessing moment to moment flux of experience, states of mind, arising of consciousness; Holds unified perspective with the other as One; holds partnership of beyond us and them; hold and rest in the tension of not knowing and wonder into the moment – without predefined constructs and perspectives – to allow what is needed to emerge; each time a solution arises, wonder and inquire into it; hold the space for the integrative nature of consciousness to express; hold a mirror to individuals/groups to see themselves, self-reflect, and wonder; attune to evolving nature of consciousness and wonder “where are we?” “what are we becoming?” and “what is needed and wanted next?”</p>	<p>6th Person - sixth-person perspective involves one’s awareness of the unity of opposites Focus: Seeing the nth perspectives, begins to step outside of those nth perspectives; begins to take a perspective using patterns of observation and perspective taking through tiers</p>

Note. Adapted from “Integral sustainability: Correlating action logics with sustainability to provide insight into the dynamics of change,” by B. C. Brown and S. Divecha, 2013, *Journal of Integral Theory and Practice*. 8, p. 205. Based on action-logic stage names and description by Torbert et al. (2004) and supplemented by Brown (2006, 2010, 2011b, 2012) and O’Fallon (2010a, 2010b).

Appendix L

Table 25

Brown’s Later Stage Sustainability Competencies

15 Competencies that May Support Development of Leaders with a Late Action Logic

Sustainability Leadership Competency		Description and Notes
Deeply Connect	<i>Ground sustainability practice in deep meaning</i>	Honor the work of sustainability as a spiritual practice, as a sacred expression. See sustainability work as a vehicle for transformation of self, others, and the world. Act in service of others and on behalf of a greater Other (e.g., universe; spirit; consciousness; god; collective intelligence; emptiness; nature).
	<i>Intuitive decision-making and harvesting</i>	Use ways of knowing other than rational analysis to harvest profound insights and make rapid decisions. Be able to easily access this type of information alone or collectively, and facilitate individuals and groups to do so.
	<i>Embrace uncertainty with profound trust</i>	Willingness to not know, to wonder into the mystery of what will emerge next. Able to humbly rest in the face of the unknown, ambiguity, and unpredictable change, and not need to “push” for an immediate answer or resolution. Deeply trust oneself, co-designers, and the process to navigate through uncertainty.
Know Oneself	<i>Scan and engage the internal environment</i>	Able to quickly become aware of and aptly respond to psychological dynamics in oneself so that they do not inappropriately influence one’s sustainability work. Deep attunement to emotional, shadow, and personality-driven forces; able to “get out of the way” and be “energetically clean” when engaging with others.
	<i>Inhabit multiple perspectives</i>	Able to intellectually and emotionally hold many different perspectives related to a sustainability issue, without being overly attached to any of them. Able to argue the position of and communicate directly from different viewpoints. Be open, curious, and inviting of new perspectives, especially those that challenge or counter one’s own.
Adaptively Manage	<i>Dialogue with the system</i>	Able to repeatedly sense into what is needed to help a system develop (e.g., make it more sustainable), try different interventions (e.g., prototype; experiment; seed ideas), observe the system response, and adapt accordingly (c.f., Snowden & Boone, 2007). Able to look <i>at</i> the system, <i>through</i> the system, and <i>as</i> the system as part of the dialogue.
	<i>Go with the energy</i>	Able to identify and take advantage of openings and opportunities for system changes that are well received by members of the system, thereby building on momentum and moving around obstacles. Also, able to identify blockages or tensions (in individuals, groups, or systems) that hinder progress, and inquire into them.

Cultivate Transformation	<i>Self-transformation</i>	Able to consistently develop oneself or create the environment for self-development in the intrapersonal, interpersonal, and cognitive domains, as well as other areas. Based upon deep self-knowledge, including personality dynamics and shadow issues. Able to create communities and engage mentors that consistently invite/challenge a deeper self to come forth.
	<i>Create developmental conditions</i>	Able to create the initial conditions (e.g., environment) that support and/or challenge development of individuals, groups, cultures, and systems. Able to sense what the next developmental step might be for others or a system, and create fertile ground or an intervention that increases the likelihood of development or the emergence of novelty. Requires a general understanding of how individuals, groups, and systems develop.
	<i>Hold space</i>	Able to effectively create the appropriate (e.g., safe; challenging) space to help a group progress (e.g., work through an inquiry; build trust; self-reflect), holding the tension of the important questions. Able to hold the energetic potential of what is needed in the space, creating the environment for the emergence of answers/outcomes.
	<i>Shadow mentoring</i>	Able to support others to see and appropriately respond to their psychological shadow issues and their “programming” (e.g., assumptions; limiting beliefs; projections; stories). This is <i>not</i> psychotherapy work, but the use of basic “maintenance” tools like the 3-2-1 process (Wilber, Patten, Leonard, & Morelli, 2008) to address shadow issues.
Navigate with Sophisticated Theories, Frameworks	<i>Systems theory and systems thinking</i>	Understand the fundamental concepts and language of systems theory. Be able to apply systems thinking to better understand sustainability issues and support the development of systems. (Bertalanffy, 1968; Laszlo, 1972; Senge, 1990)
	<i>Complexity theory and complexity thinking</i>	Understand the fundamental concepts and language of complexity theory, especially as it relates to leadership. Be able to apply complexity thinking to better understand sustainability issues and support the development of complex adaptive systems. (Kauffman, 1995; Marion & Uhl-Bien, 2001; Stacey, 1996; Uhl-Bien & Marion, 2008)
	<i>Integral theory and integral reflection</i>	Understand the fundamental concepts and language of integral theory. Be able to use integral theory to: assess or diagnose a sustainability issue and design an intervention; tailor communications to different worldviews; support the development of oneself, others, groups, cultures, and systems. (Beck & Cowan, 1996; M. G. Edwards, 2009; Torbert, 2000; Torbert, et al., 2004; Wilber, 1995, 2000b)
	<i>Polarity management</i>	Understand the fundamental concepts and language of polarity management. Be able to recognize and effectively engage important polarities such as: subjective-objective; individual-collective; rational-intuitive; masculine-feminine; structured-dynamic; challenge-support; and big picture-details (Johnson, 1992, 1993)

Note. Summary of 15 competencies that may support development of leaders from Brown’s research into how late stage sustainability leaders design initiatives. Adapted from “Conscious Leadership for Sustainability: How Leaders with a Late-stage Action-logic Design and Engage in Sustainability Initiatives,” by B. Brown, 2012, Fielding Graduate University, *ProQuest Dissertations and Theses*, p. 125. Copyright 2012 by ProQuest. Reprinted with permission.

Appendix M

Developmental Mentoring

Quoted from Lynam, A. (forthcoming)

It is useful and necessary to keep in mind that stage development can be a slow process for people and the mechanisms of how and why it happens are minimally understood. Significant life events and disorienting dilemmas can lead to stage transitions, and undertaking a significant life endeavor such as a university degree program may also contribute to this kind of development. Also, it is helpful to have a sense of whether someone is transitioning between stages, stabilizing a new stage or ready to move into the next one. Someone who is transitioning into a new stage can often feel disoriented, and be aware of new insights and perspectives, but have a hard time organizing or prioritizing them. Reassurance and recognition of this can be very helpful during such a transition. Additionally, as students begin moving into a new stage of development there is a common tendency to reject and react to the previous stage of development – a pushing off of sorts. This can create contribute to conflicting views in a learning community.

All of these variations call for different kinds of mentoring and support and are useful to keep in mind, even as discerning these differences requires a depth of understanding of development that takes time to develop. However, there are practices that work *across* the stages and for people at different places within them – such as reflective writing, collaborative learning, faculty mentoring, student-directed learning in terms of assignment topics and self-designed courses, learning community support and development, etc.

Students that are at earlier stages of development than the rest of the cohort and/or faculty and program, are likely to experience more of a transformative pull (which could sometime be experienced as an over stretch) towards the general center of gravity (collective action logic) of the program. The students at a similar stage of development to a program may simply be stabilizing themselves and filling out their skill and capacity at their present level of development. And those emerging into later stages may push against the program and their cohort members in a more critical way (although this can happen from an earlier stage as well if someone feels overly stretched or doesn't value or understand aspects of the curriculum or dialogue).

What follows is a brief overview of each of the stages and suggestions for mentoring and sustainability education and leadership development. The information draws from research and application by Cook Greuter (2004), and O'Fallon (2010b, 2013), Kegan (1994), Drago-Severson (2009), and Metcalf (2011).

Expert Action Logic (36.5% of U.S. adults)

Experts focus on expertise, procedure and efficiency. They tend to have strong belief systems, make decisions based on incontrovertible “facts”, can be reactive problem solvers and may be critical of and competitive with others. Experts tend to be detailed and perfection oriented. This is where an early third person perspective emerges. Individuals operating from this action logic begin to have a sense of their ideas and perspectives separate from their group or

culture. It is hard to prioritize ideas here as there are so many new ones available to them and sorting them out is challenging (Cook-Greuter, 2005; O’Fallon, 2010b).

Keep in mind

- Their thinking may be more black and white than others in their learning community. They may be dogmatic about their views and uncomfortable with others’ more nuanced and subtle thinking.
- Their approach to sustainability may be more technical and they might be challenged to integrate a more multi-disciplinary approach to sustainability.
- They might struggle to consider perspectives other than their own and this can result in conflict.
- They are just beginning to reflect on their own thoughts, however may struggle to do this in a deeper or more self-aware way. And they may have limited tolerance for open-ended learning experiences and assignments.
- They may have trouble prioritizing their assignments and will work to perfect each one, with less ability to adequately complete one to leave time for other assignments.
- They may be inclined to give others feedback but will struggle with receiving feedback themselves and may only be open to faculty or others they perceive as experts giving them feedback.
- May want to do things themselves, rather than collaborate and will want to direct their own learning.

Suggestions for Mentoring

- Support them to see they are in charge of their insights and can direct their own learning. Meet their need for recognition.
- Support them to discover new ways of approaching sustainability work by introducing new practices and content and helping them to see the connections.
- They need plenty of space to share their insights and it is useful to encourage them to reflect on their own interior thoughts and feelings, even while this will be a stretch for them.
- They need clearly and concretely defined assignments and to be rewarded for their accomplishments and unique insights.
- It can be helpful to establish yourself as an expert for them – this helps them to take direction and feedback and brings them a sense of safety and trust.

Practices that might be useful

- Extending their time horizon can be a catalyst for development – imaging 5 or 10 years out in their lives or in understanding the sustainability challenges we face.
- Ask and support them to make choices and prioritize.
- Mindfulness-based stress reduction can be helpful to tame their busy minds.

- Clear goals and objectives, and direction from faculty, while also inviting creative projects, with a list of ‘acceptable’ options.
- Time management and decision making tools. Systems thinking skill development.
- Listening and interpersonal skill building.
- Dialogue in small groups and pairs before sharing with whole group and faculty.
- Assertiveness training can be supportive of the movement from Diplomat “follow the rules” to Expert.

Achiever Action Logic (29.7% of U.S. adults)

Achievers are stabilizing the third person perspective and are able to prioritize tasks and goals. They tend to pursue results and effectiveness rather than efficiency only; longer-term goals; future-oriented; in charge of self as agent, initiator rather than pawn of system; systematic (scientific) knowledge. They seek proactive ways around problems, may be unorthodox; begin to appreciate complexity and multiple views, but keep them separate; blind to subjectivity behind objectivity; seek consensus: ‘agree to disagree;’ value mutuality and equality in relationships; feel guilt when not meeting own standards or goals; behavioral feedback accepted; self-critical. They embrace what is in the moment in a way that liberates them from many defensive constraints and opens possibilities for wise choice and creative responses. Experts have a vague sense of all people being family, but Achievers can carry this forward into world-centric action. Human rights are increasingly important and delivering results and taking responsibility are their hallmarks. They begin to work well in teams and to lead more effectively. They have a rich interior life, want to understand themselves forward and backward in time, and introspection and reflection are common (Cook-Greuter, 2005; O’Fallon, 2010b).

Keep in mind

- Begin to see both sides of an argument.
- Goal oriented.
- May talk more than they listen.
- Tendency towards objective and rational thinking.
- Take a more rational and technical approach to sustainability. May be interested in more management-based approaches and market-based solutions to environmental and social challenges.
- May be critical of a program’s transformative elements, other students’ ‘it depends...’ thinking, unfamiliar with conversation about socially constructed reality, more technical and less transformative about sustainability, less adept with systems thinking.
- Others may find their thinking too technical and analytical, their approach to sustainability through market and business innovation not ‘deep’ enough or too anthropocentric.

Suggestions for Mentoring

- They see the importance of feedback to the realization of their goals and objectives and

will seek it out.

- They tend to be overly busy in the striving to achieve and may be encouraged to make use of stress reduction techniques and to relax their self-imposed standards.
- Need to understand clear goals around assignments and to be rewarded for their achievements.
- It helps them to set goals and feel control over their movement forward in the program.
- Useful to encourage them to self-reflect, slow down and consider the diverse perspectives in the cohort and how to integrate the multiple dimensions of the curriculum in their thinking about sustainability.

Practices that might be useful

- Introspection and reflection are very important. They need plenty of time and space to share their own experiences.
- Mindfulness based stress reduction, reflection practice, journaling, sharing and collaborating with others.
- Have them answer the question – It depends on... to begin considering the influence of contexts on accomplishing goals and on people and their perspectives.
- Dialogue with others to uncover assumptions and blind spots, pay attention to assumptions, feelings, and behaviors otherwise un-noticed, encourage reflection on conflicting ideas.
- Probing conversation to support them expanding their focus onto broader and more integrated goals or values around sustainability and their doctoral work.
- Experiential learning and other transformative learning experiences can be very helpful.
- Collaboration with students who are at later stages of development.
- Recommend relevant self help books

Individualist Action Logic (11.3% of U.S. adults)

Individualists are able to take an early 4th person perspective, which generally comes about from many trials and errors with goal setting. They become aware of all the times they've planned to get to a goal but arrived somewhere else. They can stand back from the third person perspective (make factual judgments) and see contexts – how the third person perspective is in a context (for instance gender, class, race) that colors or influences the factual judgment. With this new perspective they can become very introspective, searching for their own and others subjective assumptions. They begin to recognize different voices for different interior contexts, such as a parent voice, child voice, friend voice, etc. This initiates a search for an authentic self. They are self-motivated towards unique personal accomplishments independent of socially approved roles. They are less interested in goals, more interested in process, and how it unfurls in the moment. Once focused on the analytical mind, they are now interested in feelings and connection between the mind and body, and develop empathy for the well being of a wholeness larger than their own. They can't prioritize or categorize the voices in the interior or contexts on the exterior. Everything becomes equally valid and relative. They begin to question their own

assumptions (new self-focus) and that of others, realize the subjectivity of beliefs, and talk of interpretations rather than truth. They may seek changes in their life and work situations. They begin to adapt their behavior to different contexts, can engage in systematic problem solving and begin to seek out and value feedback. Their time awareness is approximately 10 years, and their awareness of space extends to all of sentience and may include the planet itself. The rights of nature and all life are valued and they have an interest in liberating humans from dogma, greed, and judgment. They value consensus and eschew hierarchy of all kinds (Cook-Greuter, 2005; O'Fallon, 2010b).

Keep in mind

- They are able to think in both/and ways and see both sides of an argument or polar pair. They are deepening their interior and exterior focus and hold both together.
- They might prefer to spend hours in dialogue and value hearing from everybody.
- They can be wary of objective thinking and prefer subjective feeling and thinking. This can lead them to reject more rational ideas and scientific understandings.
- They are interested in other ways of knowing, dreams, somatic elements, embodiment, and intuition. All ways can seem equally valid. They can get attached to their non-rational sources of knowledge.
- They can be dogmatic about their beliefs and less accepting of others more black and white thinking.
- They are wary and possibly dismissive of business and economic approaches to sustainability and tend to look down on religious worldviews.
- Individualists are aware of complex adaptive horizontal systems, but regard all hierarchy with suspicion, including nested or functional hierarchies, which can be essential when making leadership or moral decisions.
- They may want more self-direction, more learning community development, more experiential learning and may want faculty to be less directive, more collaborative and in the role of facilitators rather than teachers.
- They value transformative learning experiences and may struggle with what they perceive as more traditional academically rigorous assignments. May be more interested in qualitative research methods and not interested in quantitative methods.

Suggestions for Mentoring

- May want to have equal role with teacher, may ask personal questions of teacher, to hear their stories – to help them find their own authenticity.
- Can be encouraged to integrate both subjective and objective ways of knowing, qualitative and quantitative. To transcend and include (not exclude) more rational, science-based, faith-based and economically driven sustainability work.
- Can be supported to see the limitations of over-processing and consensus decision-making.
- Need a balance of listening and connection with their mentor as well as direction and

clear guidance, to be both supported and challenged – however they may resist this guidance.

- Encouragement to make use of but not be limited or bound by ideologies and philosophies.

Practices that might be useful

- Collaborative inquiry, personal reflection, journaling.
- Personally chosen assignments.
- Curriculum and experiences that strengthen the learning community.
- Awareness practices of noticing their thoughts, feelings, judgments in the moment.
- Explore polarities and divergent ways of thinking and perceiving the world.
- Noticing limitations of consensus and taking everyone's perspective into consideration.
- Noticing which internal context or developmental level might be more useful than the others for a particular situation or challenge (this can be very challenging for individualists).

Strategist Action Logic (5% of U.S. adults)

The Strategist is maturing and integrating the 4th person perspective. The search for the authentic self may have progressed to a point where they have settled on an image that can be accepted. A new sense of confidence emerges. They often see the limits of lots of processing, begin to prioritize exterior and interior contexts and want to move forward. They also begin to see nested systems and the developmental nature of levels within themselves and in others. Seeing that development occurs, they may become quite zealous about their own and other's development, and want to take on any and all practices that might support it. They now embrace both process and a future-oriented focus by working with principles, rather than goals. Their time horizon is multigenerational and they can see multigenerational patterns. They begin to recognize their own projections, seeing that what they judge others for (positive and negative) are qualities in their own being. This is seen after the fact through reflection, and supports their embrace of paradox. Feedback is very important, and they are discerning about what is useful and what is not. They bring together interior /exterior into mind/body integration. Strategists often will not stop their willful approach to development until every practice they can try has been deepened and exhausted. What they do not see is that this will is also coming from their subtle ego, and letting it go is necessary for moving to later levels. They are better able to tolerate the negative traits in others and differences in opinions and values. At this stage of development there is a greater valuing of all of the previous stages of development as necessary for healthy human development (Cook-Greuter, 2005; O'Fallon, 2010b).

Keep in mind

- They tend to be committed to transdisciplinarity and to organize and engage multiple perspectives to propose solutions for complex problems.
- Strategists understand, appreciate and consider how things appear from several different and even conflicting perspectives.
- Egalitarianism is complemented with natural degrees of ranking and excellence and

overlapping dynamic systems and natural hierarchies are recognized.

- Begin to be aware of judgments and projections (through after the fact reflection) and find benefit with shadow work.
- While they may be more understanding and appreciative of the multiple perspectives in the cohort, they may have less patience for processing, consensus decision-making and lots of sharing.
- They may want to teach the program themselves.

Suggestions for Mentoring

- One of the most effective ways to work with Strategists is to continue to support them in their willful progress by suggesting reading, practices, and approaches that will support their development.
- Help them become very familiar with their projections by journaling or by creating a daily time of reflection on how their judgments, good or bad, can be found within their authentic self.
- Support them to take on less, and to let go of their sometimes Herculean efforts to single-handedly achieve sustainability.
- Encourage Joanna Macy's "Practices that Reconnect" work, Immunity to Change and Polarity work.

Practices that might be useful

- Awareness of projections *in the moment*. Whenever they make a positive, neutral or critical judgment about anyone, they can add "and that's me".
- Pay attention to what is life giving and what is draining to seek more balance in their sometimes busy and overly striving lives.
- Cultivate an awareness of ego and how it impacts their actions.
- Connect to presence and release the constructs of ego. Learn to rest and relax in Emptiness or Silence.
- Increasingly recognize the role of meaning making and story telling in constructing our reality.

Construct Aware or Magician Action Logic (2 % of U.S. adults)

This is the beginning of the fifth person perspective, which includes an awareness of the constructs that shape our understanding and experience of the world. Because this represents a newly emerging perspective, individuals in this stage can be overwhelmed by the awareness of so many perspectives and struggle to sort out and prioritize different constructs. This can translate into speech patterns that include stopping and starting sentences and attempts to communicate complex and multi-layered perspectives. The central goal for Construct Aware is to *be aware*. They can perceive the structure of their own thinking processes. As Cook-Greuter (2005) notes: "This is the first time in development that the ego becomes transparent to itself. Final knowledge about the self or anything else is seen as illusive and unattainable through effort and reason because all conscious thought, all cognition is recognized as constructed and, therefore, split off from the underlying, cohesive, non-dual truth. They realize that the pursuit of

objective self-identification and rational, objective explanations of the universe are futile—artifacts of our need to make permanent and substantive that which is in flux and immaterial. (p. 28-29). There is an appreciation of ambiguity and polarities – experiencing one within the other, as well as exploring influences and effects from multiple scales (individuals, organizations, history and culture) of existence. They are also more able than any other action logic to deeply access their own past ways of meaning-making. This enables them to tailor their communications and actions to others’ meaning-making systems (O’Fallon, 2010b).

Keep in mind

- There will be few if any students or faculty operating from this stage of development.
- These individuals may struggle with being heard, seen and understood by their cohort, as this stage is rare and misunderstanding is common.
- Their thinking is likely to be complex and capable of integrating a diversity of ideas and perspectives. This can be perceived as wise and integrative, however it can also be perceived as complicated and ambiguous (because of their tendency to speak paradoxically and include a multiplicity of perspectives while struggling to prioritize them).
- Their behavior and ways of being may be experienced as chameleon-like, as they are less attached or embedded in a particular perspective, and likely to adopt ideas and behaviors that are suited to different external and internal contexts.

Suggestions for Mentoring

- The transition into Construct Aware can be very challenging and disorienting. A developmental awareness, mentoring and coaching can be very useful for navigating this transition.
- Support them to find clarity in their communication, while also letting go of the need to be understood, and to gain capacity in clarifying and prioritizing ideas and tasks.
- With increasing awareness of their subtle ego and further insight into the constructed nature of reality, these individuals may exhibit significant humility and/or existential angst. Reassurance and encouragement can be very helpful.

Curriculum Design Implications

Taking a developmental perspective into account has many implications for curriculum development. Attention can be given to providing learning experiences that work well across a development span, as well as paying particular attention to the perceived development of students in general. And an awareness of the development of the educators or faculty can also be taken into consideration. The following is a list of some of the possible considerations and suggestions for how to integrate a developmental perspective.

- A well-developed learning community supports students to learn from one another and to support and challenge each other along the way. This can include collaborative learning, face-to-face time, processes and structures that encourage and sustain connection, dialogue, reciprocal feedback, peer mentoring, and ongoing contact throughout a program.
- Teaching about development and its connections to sustainability (or other disciplines) value systems or worldviews can support students to take a meta-perspective on the field

and learn to navigate and work effectively with a diversity of value systems and meaning making structures, and it highlights some of the ways the field itself can further develop. This can also help a program avoid unconsciously promoting a particular worldview or ideology, and rather puts the cohort and faculty into more of a shared inquiry and consideration of the relative value and partiality of all perspectives.

- Recognizing the role that the development of interiors play in sustainability education and leadership, faculty can provide, guide and encourage a variety of transformative learning experiences.
- Opportunities for sustained dialogue and inquiring into perspectives that differ from ones own, can support the development of perspective-taking capacities, critical thinking and moving from conviction to curiosity.
- Offer interdisciplinary and transdisciplinary approaches to sustainability work, to stretch how student conceive of and orient to sustainability work.
- Offer a clear balance and integration of student self-direction and faculty mentorship – consider offering more mentorship, direct feedback, direct teaching from faculty.
- Explore ways of conducting needs assessments with students prior to starting the program, as well as assessing their general experience, literacy and orientation to the field and which areas are in need of deepening or further development.
- Consider offering a developmental assessment to enhance student’s self-awareness and to support their growth and leadership development in the program.
- Create opportunities for students to engage with paradox, conflicting perspective and polarities, as a way to extend their capacity for taking multiple perspectives.

Influence of a Developmental Perspective on the Practice of Teaching

Integrating a developmental perspective into the practice of teaching and mentoring students can be profound. It has the possibility of significantly influencing faculty’s personal and professional development and their ways of working with their students. This may include the following:

- Aware that an individual’s development influences their perspective on the experience of the curriculum, faculty are more likely to be sensitive to and discerning about who their students (and colleagues) are and listen deeply for what their developmental needs might be.
- More aware of their own development, educators may be less likely to project their own developmental needs onto their students.
- Because development influences how someone experiences the curriculum, there is increased recognition that simply learning about a particular topic through reading etc, may not be sufficient to translate into comprehension and integration of the perspective or ideology. In addition, requiring certain levels of self-reflection, critical thought, a willingness to engage with diverse perspectives and to balance advocacy with inquiry, isn’t sufficient to ensure these happen. These capacities need to be cultivated and students need to be guided and mentored in their development, sometimes in very direct and structured ways.

- Awareness of one's own development and the development of students can generate a greater flexibility and adaptive approach to mentorship and teaching – cultivating a dynamic balance between direct teaching and encouraging student directed learning. This includes transcending the dichotomy between “sage on the stage and guide on the side”; finding a dynamic way to include both and discern when one is needed more than the other. A willingness to adapt to what is needed for both individuals and the cohort as a whole.
- A recognition of development naturally highlights the importance of integrating interiors (values, worldviews, psychology, subjective perspectives and experiences) in our teaching through practices such as dialogue, other ways of knowing, contemplative practices, reflection, shadow work, etc. While not neglecting the importance of more traditional approaches such as empiricism, understanding complex systems and their role in sustainability challenges and solutions etc.
- An appreciation of development and the understanding that every perspective and/or stage of development is both whole and partial – that it contains important truths and misses something of the larger whole, can help faculty navigate conflicting perspectives in the cohort and discourse in general – highlighting the value and truth of particular endeavors, beliefs or approaches, while also seeing their limits. This can offer guidance in how to navigate a multiplicity of perspectives and not get lost in the flatland of pluralism, by being able to identify and choose perspectives, projects and/or approaches to their chosen discipline that may be the best fit for a certain context or circumstance.
- Understanding adult development and the transformative process can support a program or institution to be clear about its aims and outcomes, by understanding the developmental implications of these, and how to structure learning to better support students to thrive and achieve the program outcomes. It can also help a program adjust their aims and outcomes so that they are developmentally appropriate for their student body – providing a developmental stretch, but not overstretching.