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INTEGRATIVE LEARNING:
A Grounded Theory

by

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Abstract: This article reports the findings from a study of undergraduate students in an academic program focused on integrative learning rather than interdisciplinarity. One aspect of this study included how students defined integrative learning. This participant-shaped understanding of integrative learning was broad and reflected a continuum of integration. The researcher labeled the four forms of integration in this continuum Application, Comparison, Understanding Context, and Synthesis. A developmental theory of how students become integrative learners emerged from the investigation. Students engaged in Application when they found course work personally relevant and meaningful; students performed Comparison when they learned to identify and evaluate multiple perspectives; students who evaluated competing claims or engaged conflicting viewpoints were Understanding Context. If conflict was reconciled, Synthesis was possible, but not achieved. Synthesis is the most complex form of integration and, although students agreed Synthesis is an ideal, they did not report examples of experiences that demonstrated this capacity. This article compares the learning outcomes of an academic program that privileges integrative learning with the outcomes of programs that are intentionally interdisciplinary.

Keywords: integrative learning, interdisciplinary learning, college students, student development, cognitive development, synthesis, process

Background

Higher education leaders consistently assert that undergraduate students need to make connections in their learning: across courses, among diverse perspectives, between in-class and out-of-class experiences, and between new learning and prior knowledge. Scholars interested in cognitive development

and national associations that advocate for meaningful educational reform harmonize on this point (Association of American Colleges and Universities [AAC&U], 2002, 2005, 2007; Baxter Magolda & King, 2004; Klein, 2005b; Newell, 2001a; Seabury, 1999). These theoretical views and national reports note that the intellectual skills required to integrate diverse perspectives are needed in the 21st century and should be intentionally cultivated. Integrative learning will enable college graduates to contribute to solving many of the world's multifaceted problems (Bok, 2006; Gutmann, 2005; Klein, 2005a; Klein & Newell, 1997; Rhoten, 2003). What is less clear from the existing literature is *how* to translate this conceptually rich idea into practice.

Recommendations for practice embrace both integrative learning and interdisciplinary understanding. In some cases, authors do not discriminate between these terms; "integrative" and "interdisciplinary" learning are treated as synonyms. Others reserve the term "interdisciplinary" for work involving connections between the insights derived from disciplinary perspectives. For many interdisciplinarians, this connection is made through integration. "Integrative learning" can be an umbrella term for a wide range of connection-making activities, which may include disciplinary connections. A review of the literature on integrative learning suggests students are asked to bridge the curricular and co-curricular (Brownlee & Schneider, 1991; Klein, 2005b; Newell, 1999, 2001a), explore connections across the general education curriculum and the major (Huber & Hutchings, 2004; Klein, 2005b, Newell, 1998), and integrate previous learning with new material (Baxter Magolda & King, 2004; Bransford, Brown, & Cocking, 1999; Resnick, 1989). Scholars celebrate activities that promote student engagement with learning such as first-year seminars, senior capstone courses, experiential learning, and learning communities for their potential contribution to connected learning (AAC&U, 2002; Haynes, 2002; Huber & Hutchings, 2004; Huber, Hutchings, & Gale, 2005; Klein, 2005b; Klein & Newell, 1997; Newell, 1999, 2001a; Schroeder & Hurst, 1996; Shapiro & Levine, 1999). Again, some authors focus specifically on interdisciplinary work; others emphasize integrative experiences. However, the link between these practices and the advancement of integrative learning is not always grounded in research and rarely includes the voices of students engaged in integrative learning (Huber, Hutchings, & Gale, 2005; Newell, 2001b).

An earlier study Carolyn Haynes and I conducted offers a longitudinal perspective on students' experiences with an interdisciplinary academic program. Students reflected on their interdisciplinary learning and credited experiences such as seminar discussions, the ambiguity and complexity of

interdisciplinary topics, extensive writing and re-writing, and the residential learning community with helping them to become interdisciplinary learners (Haynes & Leonard, 2010). We found cognitive development theory contributed to understanding students' experiences.

Scholars investigating cognitive development in college students focus on the qualitative characteristics that represent how students think. The emphasis is on cognitive processes rather than content. According to Baxter Magolda (1999, 2001), undergraduates are navigating interpersonal, intrapersonal, and epistemological dimensions as they move from seeking validation from an authority outside themselves to approaching self-authorship. Self-authored individuals recognize that knowledge is constructed and that they can contribute to knowledge production (Baxter Magolda, 2001; Kegan, 1994). The possible connection between the process of becoming interdisciplinary and the process of becoming more sophisticated and complex as a thinker informed our analysis (Haynes & Leonard, 2010).

Haynes and Leonard (2010) found that, over time, interdisciplinary studies students' views of themselves as learners, their peers and faculty, and their own sense of agency related to knowledge construction moved from relying on external authorities to the "crossroads" (Baxter Magolda, 2001, 2004). According to Baxter Magolda (2001, 2004) the "crossroads" is a transition point at which students recognize the limitations in relying on external authorities and move towards a growing confidence in their own views. This transition is evident in defining relationships (intrapersonal dimension), in figuring out personal priorities and goals (interpersonal dimension), and in making decisions or thinking critically (epistemological dimension). Haynes and Leonard (2010) explored how students learn to integrate insights from disciplinary perspectives through an interdisciplinary curriculum and residential community; in the process, students demonstrated greater cognitive complexity over time. However, these insights into interdisciplinary learning do not satisfy fully the broader expectation, expressed by higher education leaders, that undergraduates become integrative learners.

If integrative learning is a learning process with important learning outcomes, how can we measure progress towards it? Several scholars have investigated how faculty members assess student interdisciplinary work (Boix Mansilla & Duraising, 2007; Field, Lee, & Field, 1994; Lattuca, Voigt, & Fath, 2004; Wolfe & Haynes, 2003). Boix Mansilla and her colleagues argue that strong interdisciplinary work needs to be characterized by disciplinary grounding, advancement through integration, and critical

awareness (Boix Mansilla & Duraising, 2007); however, they have not addressed *how* students learn to identify disciplinary insights relevant to interdisciplinary integration or to leverage insights from more than one discipline to improve understanding of a complex problem.

For many interdisciplinary scholars, integration is a fundamental step in interdisciplinary work. Repko (2007) offers a concise summary of the debate between "integrationists," who insist on the centrality of the integrative process in interdisciplinary work, and "generalists," who are content with a loose coupling of disciplinary ideas without any requirement for integration. Among the integrationists, Klein (1990) proposes a stepped model of how to engage in interdisciplinary research that includes integration. Newell (2001b) emphasizes the importance of integration as part of the interdisciplinary process. In their rubric designed to assess interdisciplinary writing, Wolfe and Haynes (2003) include "interdisciplinary integration" as a criterion for evaluation. Newell (2006) used this rubric in his assessment of senior capstone research projects from an Interdisciplinary Studies program. Interestingly, the integrative process that Newell followed in his assessment of student work was not explicitly taught to students until they were enrolled in the senior capstone course. Although the quality of their work was uneven, approximately a third to one-half of the students in his sample successfully integrated. Newell (2006) concludes that it is possible to teach interdisciplinary integration to undergraduates. He finds that some students purposefully engaging in interdisciplinary work demonstrate capacity for integration. However, it is not clear why some students "get it" and others do not. How successful is an intentionally integrative studies curriculum in meeting the same goal?

An Integrative Studies program at a large East Coast university offered a context for learning more about the *how* of integrative learning. By talking with faculty about the ways in which the program intended to be integrative and with students about how they experienced integrative learning, I explored integrative learning from a student perspective. Although courses were centered on a topic or theme and included different disciplinary perspectives, faculty resisted the term "interdisciplinary" as a descriptor. The emphasis was on different perspectives, not disciplinary insights.

Methodology

To learn more about students' perceptions of their learning, I engaged students and faculty members of an academic program committed to

integrative learning. The data and analysis are part of a broader study. Two research questions guided the investigation reported here:

1. Do students experience integrative learning? If so, how do they experience integrative learning and which experiences do students identify as contributing to their ability to integrate?
2. What challenges and successes do students experience with integrative learning?

I employed interviews of students and faculty and a review of institutional documents to explore the research questions using constructivist grounded theory methodology. In general, qualitative methodology is appropriate for investigations about understanding a process, such as student learning, that may not be easily quantified. Grounded theory methodology, specifically, promotes theory development aimed at capturing a process (Charmaz, 2006). I coded the interview transcripts, consulted the documents, and wrote memos to capture impressions and insights about the emerging patterns and themes in the data. Themes were identified by clustering similar codes into broader categories. Querying the data, writing additional memos, and creating concept maps led to an emerging framework (Charmaz, 2000, 2002, 2006).

Participants

The primary data for this investigation were gathered from in-depth interviews with undergraduate students enrolled in an Integrative Studies program at an East Coast university. Initial invitations to participate in this study were sent via email to all students with declared majors in the Integrative Studies program. To participate, students had to be at least 18 years old and enrolled currently in Integrative Studies. Of the 12 students who initially volunteered, 10 participated: one first-year student, three students each in the sophomore, junior, and senior years. The decision to halt data collection after interviewing 10 students was guided by saturation in perspectives and a repetition of emerging themes. This stratified sample provided a cross-sectional group to support comparisons across time in the program. Student participants chose their own pseudonym; demographic characteristics are profiled in Table 1 on the following page.

Table 1
Summary of Participants

Pseudonym	Key Characteristics
Darth Vader (DV)	First-year. White female with in-state status. Participated in outdoor orientation, first-year experience, and living on living-learning floor.
Matt	Second-year. White male with in-state status. Participated in outdoor orientation, first-year experience, and living-learning floor. Living on campus.
Mary	Second-year. White female from out of state. Participated in outdoor orientation, first-year experience. Living on campus.
Cindy	Second-year. White female from out of state. Participated in outdoor orientation, first-year experience, and living-learning floor. Living on campus.
Nicole	Third-year. African-American female from out of state. Transfer student. Took Introduction to Integrative Studies. Living off campus.
Chiwy	Third-year. African international female. Transfer student. Had not taken Introduction to Integrative Studies.
Anisah	Third-year. South Asian woman with in-state status. Participated in first-year experience.
Ann	Fourth-year. White female from out of state. Participated in outdoor orientation, first-year experience, and living-learning floor. Living on campus.
Bond	Fourth-year. White male with in-state status. Transfer student. Took Introduction to Integrative Studies.
Lynne	Fourth-year. White female from out of state. Participated in the first-year experience. Living on campus.

Research Context

The Integrative Studies program that hosted this research had several distinctive characteristics. New students were invited to participate in an optional outdoor extended orientation program prior to the start of the academic year. It also had a first-year curriculum characterized by learning communities and experiential learning. Students earned many of their general education credits via the first-year curriculum, which included four courses in sequence, each lasting six weeks (separated by two-week breaks).

The small seminars of the first year emphasized writing and often included collaborative projects, service projects, and/or independent research. In addition, all students were required to complete a thematic concentration (or major) typically comprised of courses in more than one discipline as well as a capstone course.

According to the seven faculty members (some administrative and some instructional) who were interviewed, the program had several vehicles for imparting the integrative nature of the program. First, the first-year seminars modeled integration, even though faculty reported that the program avoided the term "interdisciplinary." Some faculty conceded that the courses were interdisciplinary while other faculty preferred the term "multidisciplinary." Faculty insisted that the integration they promoted in their courses went beyond connections of insights from the disciplines. Second, students were making connections between their in-class work and the "real world" through experiential learning assignments. Third, the capstone course required a portfolio that faculty claimed promoted integration across courses. Through the portfolio, students demonstrated progress toward program competencies instead of credit totals, an emphasis that focused students on the nature of their learning as a whole rather than as a series of discrete classes. Finally, concentrations or majors in Integrative Studies included courses from more than one academic department.

Data Gathering and Analysis

Each student participant was interviewed three times over one semester, each conversation lasting approximately one hour. Transcripts of these student interviews comprise the primary data source for this study. The first interview included questions designed to build rapport and explore how students perceive and experience the Integrative Studies program. They were asked to discuss their decision to join Integrative Studies and how they would describe it to a prospective student. Students also addressed what "integrative learning" meant to them by telling a story or providing an example of an assignment or class experience that illustrated that understanding. In the second interview, about three weeks after the first, I asked students to focus on a course that the students described as particularly attentive to integration. Students considered the structure of these courses, how faculty taught them and what, specifically, they were learning from their experiences. Because students were at different stages in their undergraduate experience, some identified a first-year course, others selected an upper-level Integrative Studies course or an interdisciplinary course in another department (e.g., Women and Gender Studies). Students described the course, their contributions to the course, and how the course emphasized integration. Students described how faculty shaped their understanding of the Integrative Studies degree program and offered a metaphor to capture how they thought about their education in Integrative Studies. In the final interview, I invited students to think about the primary learning outcome of their Integrative Studies program to date and to describe the way faculty and peers had influenced their learning. Students also discussed the challenges of integration. Finally, students provided an example to illustrate how they had integrated.

Transcripts were reviewed and coded, producing over 1,400 line-by-line codes that focused primarily on actions (Strauss & Corbin, 1998). Next, codes were clustered into 13 distinct themes (Charmaz, 2002, 2006) that captured the emerging patterns in the data. These broad conceptual themes were further clustered into three overarching themes: (a) understanding integration, (b) becoming integrative, and (c) understanding the Integrative Studies program learning environment. To achieve trustworthiness, I engaged with each study participant at least three times and used peer debriefers (Lincoln & Guba, 1985; Mertens, 2005). I enlisted the guidance of two peer debriefers, colleagues knowledgeable about undergraduate student learning and college student development. They interrogated my interpretation of the data, probing for any gaps in my analysis and responding to preliminary interpretations of the data. Participants also reviewed and corrected interview transcripts and, as the theoretical model was taking shape, attended a focus group to discuss the emerging theory. Throughout the process of data collection and analysis, I reflected on the investigation and recorded emerging ideas about students' experiences via memos (Charmaz, 2006). I captured interpretive insights and actively compared experiences across study participants. Finally, an inquiry auditor experienced in grounded theory methodology reviewed research notes and materials to ensure the integrity of the research process. Inquiry auditors help confirm that a study has followed a rigorous analytical process (Lincoln & Guba, 1985; Mertens, 2005). As needed, I referenced faculty interviews and institutional documents to provide contextual understanding and to triangulate and interrogate my interpretation of student voices.

Findings

Based on my analysis of the student data, I identified three overarching themes. This article explores each theme, with an emphasis on "becoming integrative." Following the specific findings of the grounded theory study

of a program focused on integrative learning, this article compares these integrative learning outcomes with the learning outcomes of interdisciplinary programs reported in the literature.

Understanding Integration

This cross-sectional sample of students conceived of integrative learning as a broad and inclusive phenomenon. Students identified a range of intellectual activities under the umbrella term of "integrative learning"; their ideas were more capacious than those of their faculty. Students identified practices that we later labeled Application, Comparison, Understanding Context, and Synthesis as examples of integration. These different forms of integration made sense to me as a continuum that ranged from least to most sophisticated in terms of cognitive complexity. Analytical details supporting this continuum are described in Leonard (2007). A brief description of each of these integrative forms is summarized in Table 2.

Table 2
Continuum of Integration

Forms of Integration	Summary Definition
Application	Applying an idea to a new context.
Comparison	Examining the similarities and differences of two ideas, theories, or experiences.
Understanding Context	Identifying the source of information or knowledge and considering the social or political backdrop of an idea. Different contexts produce different perspectives.
Synthesis	Blending different perspectives to improve understanding.

Application is the act of taking an idea, usually learned in an academic context, and connecting it to another sphere, typically to an area that is personally relevant. Students insisted that Application is a basic form of integration. Comparison is the act of finding similarities and differences between two or more ideas or things. Understanding Context is a form of integration that acknowledges the idea of multiple perspectives and involves identifying biases and sources. Synthesis is a blending of perspectives that leads to a whole that is greater than the sum of its parts. Students acknowledged Synthesis as an integrative ideal, but were not able to produce examples of their own synthetic work.

Becoming Integrative

Identifying environments and assignments that encouraged students to become integrative has important implications for practitioners interested in creating such learning contexts. Consistent with the inclusive definition of integration used by students, the range of experiences cited by students as helpful in promoting integration was broad. Across the specific cases, I identified experiences key to promoting integrative learning: engaging in personally relevant coursework that leads to self-knowledge and understanding, identifying multiple perspectives, encountering conflict, and reconciling conflict.

Engaging in personally relevant coursework. When participants discussed compelling learning experiences or articulated reasons why a given assignment or project contributed to their learning, they often cited the personal relevancy of the topic. Usually this relevancy was described in terms that directly connected to their lives. Matt was struck by how he was affected by an in-class exercise designed to illustrate how individuals contributed to pollution. He concluded, "Things that you can apply to your daily, your personal life I think is great because you're taking that from the classroom, and that really makes it stick with you." Students considered learning that contributed to self-understanding and self-knowledge as personally relevant. Students expressed new understanding related to discovering their own biases and assumptions. When the connection to their lives was absent, students expressed frustration with this lack of personal relevancy.

Identifying multiple perspectives. Some of the students' examples of integration demonstrated a consideration of two or more perspectives on a topic. Lynne identified disciplines as the perspectives being considered, and made her case for the importance of embracing more than one point of view:

> Because even if you're an economics major, economics is about race and class and gender and media and colonization and globalization. So how can you just study economics and not take classes on or courses in race and gender and class and the differences? It's just like, it's everything.

Other examples were more general regarding the different perspectives being considered. Mary said, "You would want to learn about that issue from every or most individuals' points of view, and look at it in different mediums whether it's books or the arts, or news…" Students recognized

pluralism in perspectives and the need to consider more than one point of view for integration.

Encountering conflict. All of the students in this study gave examples of a time when they encountered conflicting views or a situation where they had to confront something or somebody. In some cases students witnessed the conflict, meaning the student was not a direct participant in the conflict (external conflict). In other cases the conflict directly involved the student sharing the experience either publicly or in private (internal conflict). Encountering conflict often preceded students' ability to Understand Contexts. The curriculum and life beyond the classroom fostered exposure to conflict. Students had a lot to say about the importance of engaging openly with others who held opinions different from theirs.

Conflict outside self. In classes that asked students to discuss controversial issues, students experienced conflict outside themselves. Nicole, a third-year student, described the group project in her introductory class: "Our group assignment was to pick a controversial issue at the time and pretty much present both sides of the issue and just discuss it and see what the class thought on it." These discussions could get spirited and confrontational. Debate and argument helped to elaborate the different perspectives on the topic. If students understood and followed certain ground rules for discussion, the discourse was civil and productive, but still was experienced as a form of conflict.

Students also identified conflict within and across courses that prompted comparing different theories or perspectives. A senior, Ann, found conflicts in the various leadership theories she encountered in her coursework and commented,

> I think it's challenging when you're reading something or you're reading a couple of pieces of work and you have to write one paper and you're getting a different, completely different views from three pieces that you're supposed to incorporate into one, or talk about in one paper. I think that's very challenging with integrative work.

When students discussed controversial topics or conflicting perspectives, it was inevitable that they encountered points of view with which they did not agree. Students expected this type of conflict, and they viewed it as a positive contributor to their learning. Bond, a senior, believed that he could learn something useful even from those people with whom he did not and would not agree.

At times the conflict seemed tedious. Chiwy described a peer who seemed to contradict others just for the sport of it. Students also encountered external forms of conflict in their out-of-class lives; Matt encountered conflict on his living-learning floor, Cindy in the outdoor orientation program, and Anisah in student government.

Conflict within self. In some cases in-class disagreements prompted conflict for a student, either privately or as an active participant in a public conflict. Chiwy, a third-year international student, described what it was like for her to encounter views related to class topics that conflicted with the views she had learned from her upbringing and culture:

> So, and being gay or homosexual or any of those, where I grew up it's completely taboo. We did not talk about it, we don't notice it, it is almost nonexistent. So being in class and talking to people who are actually not heterosexual but are homosexual or gay or bisexual or transgendered and seeing that they have real experiences that heterosexual people go through is very important because I can talk to people now without having any form of judgment upon them. I think that has been the greatest thing in that class, is learning about things I never, ever thought I would end up learning about.

Bond praised the conflict when he said:

> It doesn't create ideas if you don't have a devil's advocate. Everybody knows that. . . . You can't have a group where everybody is groupthink; you can't have that all intertwined or all it will be is, "Oh, I agree," "I agree." Why do you agree and why would you not agree with it? Some of the best ideas come from some asshole in the back going, "I don't agree with this." Why don't you agree with this? It forces people to think. That's how I look at it.

These students acknowledged that conflict had benefits even if it created discomfort at times.

Several of the students in the study described themselves as strong Christians. The tenets of their faith, as they understood it, included a strong belief in creationism and a distrust of the theory of evolution. Cindy, a second-year student, acknowledged she was engaged in the opposite of integration by keeping her personal beliefs and the teachings of her class separate. Cindy observed, "I was reading my notes out loud and trying to teach myself the facts, but as I was saying these things, I was like, 'I don't

agree with the statement coming out of my mouth, but that's what my notes say.'" She found herself having to learn course material that was in conflict with her faith. Integrative Studies students experienced internal conflicts outside as well as inside the classroom that prompted attempts to resolve the resulting tension.

Reconciling conflict. All students found it challenging to grapple with conflict, regardless of whether they successfully reconciled the conflict they encountered. Conflict was unsettling and created dissonance. Students wanted to reduce this discomfort by reconciling the conflict in some way. They employed various strategies for reconciliation including holding on to their previous position by agreeing to disagree, avoiding or dismissing the conflict, or (ideally) attempting to reconcile the conflicting views by synthesizing them into a coherent perspective.

A conflict encountered by several study participants was between conservative Christian beliefs and evolutionary theory. All of the students who described this conflict felt they had successfully resolved it. Matt responded to the dissonance by accepting the contradiction and keeping his faith and academic work separate. Anisah shared that the reconciliation process was difficult, but she arrived at the following conclusion:

> Well, there's some views that religion and science don't mix. Actually, my [high school science teacher], he really helped me out on this. He told me this when I was a junior in high school, he said, "I think religion and science are very much alike. It's just telling you where we came from and why we're here. They are both trying to find the same meaning."

This reconciliation, then, is an externally provided solution that Anisah adopted. The result is a restoration of the equilibrium she lost when her faith and the science of evolution clashed. In a similar way, Cindy adopted the perspective her father shared with her prior to coming to college:

> He [her father] said, "Here are the points where you can actually agree with it [evolution] and other points you can disagree with it. . . . I know exactly how many years it took to create Adam and Eve and create the world; it happened in seven days." For us, we believe that to God, a thousand years is like a day and a day is like a thousand years, so He could have had parts of evolution occur over billions of years, but that would count as one day for Him.

Anisah and Cindy provided examples that demonstrate an approach to making meaning that relies on external authorities to resolve the conflict. Matt's solution was to accept both perspectives "for what they are," a form of reconciliation that does not require any effort and fails to integrate. These different attempts at reconciling conflict fell short of reconciliation as Synthesis.

The "becoming integrative" theme captures key catalysts for integrative learning as described by the students in this study. The final theme is explored in less detail.

Understanding the Integrative Studies Learning Environment

Several distinctive features of the Integrative Studies program emerged as foundational to students' experiences and contributed to students' sense of what it means to be an integrative learner. I clustered the codes related to the Integrative Studies learning environment into six categories: easing transition, being different, working harder and smarter, taking a bitter pill, learning from peers, and building faculty relationships. Although a full description of these sub-themes is beyond the scope of this article dedicated to the emerging theory of how students become integrative learners, some salient features of the Integrative Studies program follow. General student perceptions of their academic program are relevant to the analysis.

Students provided many specific examples of how they made sense of the Integrative Studies program in which they were enrolled. Students who participated in the optional outdoor orientation experience prior to the first year considered it a strong contributor to their understanding of integrative learning. Participants in the outdoor orientation program reported that their instructors discussed Kolb's Experiential Learning theory (1984), which helped students understand the way the first-year curriculum was structured. Transfer students found the Introduction to Integrative Studies course helpful. This course was designed to support transfer students who missed the intensive first-year curriculum. However, students who joined the program as first-year students found the immersion experience of the first-year curriculum was a comprehensive orientation to Integrative Studies.

Other contributors to understanding integration came from experiential learning, creating portfolios, and writing reflectively. Receiving feedback from faculty on writing offered another opportunity for improved understanding of integration as did reading from diverse perspectives and participating in group projects. For some students, having a job,

receiving advising, creating a concentration, living on campus, and being in a co-curricular organization helped them understand what it means to be integrative. What these disparate experiences have in common is that they encouraged students to reflect on their experiences, often prompting connections between in-class learning and their own lives.

Most students discussed the ways in which integrative learning was modeled by an integrated context. They valued integrative learning, suggesting that integration was a process that required individual effort and that such effort was facilitated by a learning context that modeled integration. Students agreed that integrative learning was hard work.

Lynne provided her assessment of why integrative learning is difficult:

> I think for so long you're inundated with so much stuff and your brain just almost doesn't have the capacity, because I think the way our minds work, we segregate things. We categorize; that's how the brain works. Psych 101 will tell you that. . . .
>
> You create categories, you stereotype, and you separate, and when you can't, you can't separate in this discipline so you have to completely relearn your way of thinking, your way of studying, your way of writing a paper, and I really think it takes almost four years to be able to sit down and write a paper and be able to, "I remember this from this" and to pull this from here and this is all connected too, and really being able to flush out the different aspects.

This reflection from a graduating senior supports the idea that learning the integrative process is developmental in nature.

Emerging Theory

Grounded theory methodology seeks to build a theory from the data collected to describe a process. According to Jones, Torres, and Arminio (2006), theory derived from grounded theory is tied to a particular context. The theory built from this study is intended to explain the pattern of student experiences as students learn more about integrative learning. The theory emerging here was revised three times based on feedback from participants during focus groups and discussions with peer debriefers.

Building on the capacious conceptualization of what it means to be integrative reflected in students' experiences, I created a continuum of integration that reflects a hierarchy giving a higher status to integrative work that is more intellectually demanding (Application, Comparison, Understanding Context, Synthesis). The integrative milestones within the continuum of integration are represented as plateaus within the spring in Figure 1.

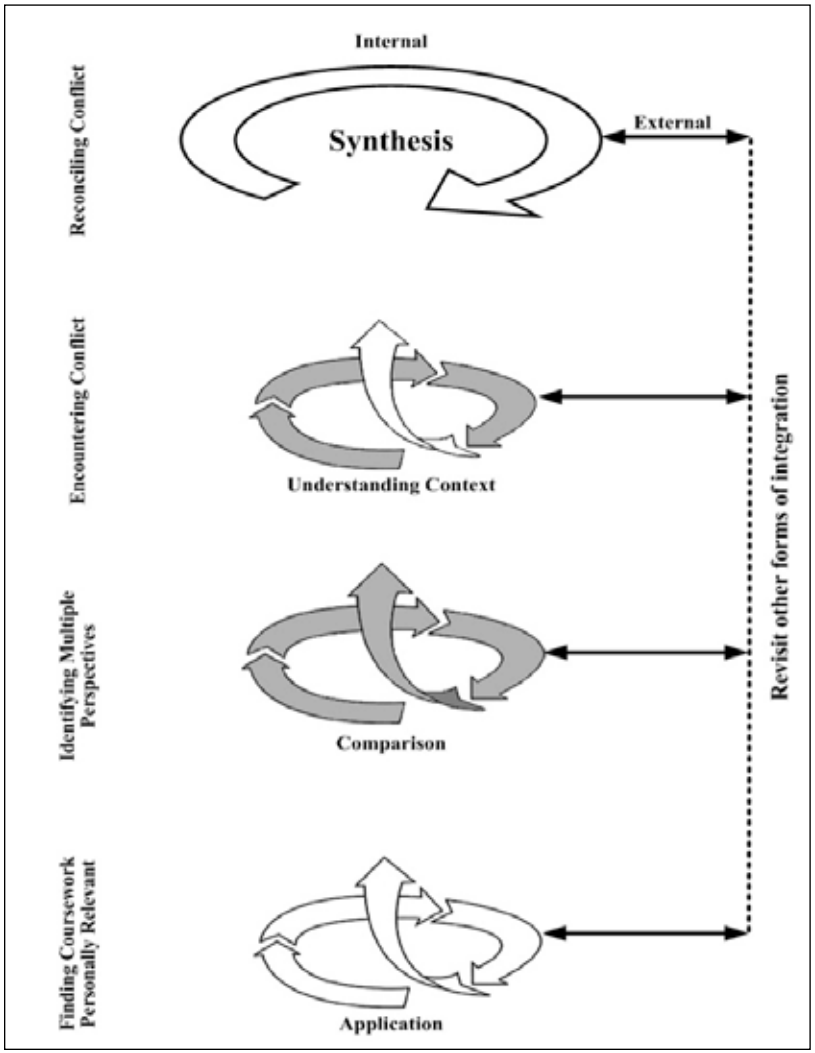

Figure 1: Emerging theory of how students become integrative learners.

The spring resembles a large slinky that has been extended to show its coils. The labels on the left of the graphic describe the experiences that promote transition from one integrative form (plateau) to another. The integrative learning process begins at the bottom of the graphic. Students advance (move up the coils in Figure 1) as their thinking becomes more sophisticated; their view of knowledge changes from one that sees knowledge as certain and fixed to one that is tolerant of uncertainty and, eventually, to one in which they are able to contribute to knowledge construction. The arrows to the right depict the recursive flow that permits students to revisit earlier forms of integration at any time. The shaded arrows represent a "shadow zone" in which some students artificially advance to the Understanding Context plateau but immediately return to Comparison because their understanding of multiple perspectives is superficial.

The "becoming integrative" themes (engaging in personally relevant coursework, identifying multiple perspectives, encountering conflict, and reconciling conflict) fit into the theory as vehicles for transition through the continuum of integration. Students began by engaging in an intentionally integrative environment and learned how to be integrative in terms of Application by engaging in coursework that was personally relevant. Students gave examples of applying course material to themselves. Students moved to Comparison by identifying multiple perspectives, recognizing similarities and differences in those perspectives, and becoming more aware of complexity. Students advanced to Understanding Context when they encountered views that conflicted with each other or with their own perspective. Students cited examples of witnessing the conflict in others or being a direct participant in conflict and, at times, having deeply held convictions challenged. Students described learning to assess arguments and identify biases. Finally, to reach Synthesis, students had to reconcile conflicting views. Internal and external reconciliation are possible, as well as dismissing the conflict altogether, but only internal reconciliation leads to Synthesis. Internal reconciliation is characterized by a strong inner sense of self that guides decision-making and a confidence in one's evaluative skills and ability to construct knowledge. Students in this study either dismissed the conflict or used external sources for resolving conflict, typically adopting a resolution recommended by an authority figure held in high regard by the student. None provided examples of integrating or synthesizing the conflicting perspectives.

Students moved through the continuum of integrative complexity in an iterative fashion, never ascending to Synthesis and rarely if ever maintaining

one direction. Students reported cycling back through various positions on this model as they traveled through their undergraduate experience. The spiral, looping nature of the graphic depiction in Figure 1 is intended to capture this cyclical experience. Imagine the lower loops of the spring joining or at least becoming closer to the loop immediately above them such that, after mastering the more modest forms of integration, students picked up and carried that ability with them for use in future integrative challenges. Being confronted with conflicting perspectives surfaced as a pivotal theme in this study of how students became more sophisticated at integration.

Emerging Theory – A Developmental Explanation

The findings of this study reinforce the perspective that integrative learning is a process with identifiable steps. Scholars have been inconsistent on this point, suggesting the need for more research on what it means to be an integrative learner. Dressel (1958) points out a distinction between the terms "integrative" (or "integrating") and "integrated." In other contexts, "integrative learning" has been used to describe a planned, coherent sequence of courses or to describe a university that successfully connects the co-curriculum to the curriculum. This coherence seems relevant to providing scaffolding support for students and creating intentionality, but attention to coherence alone does not explain how students learn to integrate. It seems plausible that integrative learning is a process that demands active engagement in some kind of connection-making. Focusing on the process of integration has implications for faculty and administrators crafting intentional environments to support integrative learning.

The theory emerging from this study intersects with changes in students' meaning-making capacity or cognitive complexity. Although the research was not designed intentionally to explore the cognitive development of the participants, the parallels of my findings with those of cognitive development researchers were striking. Students' motivation and their view of knowledge mediated their development. Most students entered the Integrative Studies program believing that knowledge was fixed and knowable. These students were seeking right answers to the problems posed in a course or in their co-curricular experiences. In addition, student participants typically sought validation from authorities and were motivated to learn by external rewards such as grades. Perry (1981) refers to this phase of development as "dualism," a simplified view of the world that puts experiences into one of two categories (right vs. wrong; good vs. bad). Other theorists, focusing

specifically on women, describe this point of development as "received knowing" (Belenky, Clinchy, Goldberger, & Tarule, 1986). Baxter Magolda (1992, 1999) calls this phase "absolute knowing." Students who are dualists or absolute knowers are able to engage in Application as a form of integration.

To move along the continuum of integration from Application to Comparison, our students began to see knowledge as something that could be discovered, accepting that some knowledge may be uncertain. Generally, if experts did not know something, students believed that the "something" could be known with time. This point of development is referred to as "multiplicity" (Perry, 1981) or "transitional knowing" (Baxter Magolda, 1992, 1999). At this point, students are still motivated by grades and the praise of valued adults such as teachers, but are becoming more independent in their academic work. Moving along the graphic in Figure 1, students in this study engaged in Understanding Context as a form of integration. Students successfully considered different and, at times, contradictory points of view, a practice that began to challenge the assumption that there was one right answer. These students viewed knowledge as uncertain. In the face of conflict, students entertained perspectives that were different from their own, yet continued to value their own perspectives and stories. Many students espoused that everyone was entitled to her or his opinion (similar to Perry's "relativism"). Some students began to critically assess different perspectives and to understand context, characteristics of "constructed knowers" (Belenky et al., 1986) and "independent knowers" (Baxter Magolda, 1992, 1999).

As students approached Synthesis in the emerging theory (Figure 1), they continued to see knowledge as uncertain, but were more comfortable contributing to knowledge construction. Students demanded evidence for arguments. In this study, evidence of Synthesis was limited to general descriptions of what synthesis might look like rather than specific examples of synthetic activity. Similarly, in Baxter Magolda's longitudinal study, few undergraduate students demonstrated characteristics of "contextual knowers" where all sides of an issue are considered including those of authorities, peers, and self, with awareness of the context, to reach a decision or course of action (1992, 1999).

The pace with which our students advanced through the spring was related to their cognitive development. As students moved up the spring, they were becoming more internally directed in their definition of knowledge, and their understanding of themselves in relationship to others was becoming more stable and enduring.

There is one caveat to the theory described above and represented in Figure 1 that applies to a few of the participants. Many students who moved through the different forms of integration exhibited characteristics consistent with "independent knowers": they recognized the existence of different perspectives, acknowledged knowledge was uncertain, and expected individual claims to include evidence rather than opinion only (Baxter Magolda, 1992, 1999). In contrast to these "independent knowers," several students seemed to be able to recognize different and conflicting points of view, but still expected to find a right answer. These students provided past and current examples of their integrative learning that demonstrated Application, Comparison, and Understanding Context. However, asserting that one was open to diverse perspectives might not be sufficient evidence of Understanding Contexts. All students were embedded in an Integrative Studies program that emphasized the importance of examining topics from multiple perspectives. The students readily expressed an appreciation for multiple perspectives and, therefore, appeared to be "independent knowers." On closer examination, some students demonstrated characteristics more consistent with "transitional knowers" or even "absolute knowers," a fact which complicated the "journey" through the spring (Figure 1).

One explanation for this complication is a gap between verbal claims and actual behavior. Simply stating they valued and appreciated multiple perspectives, a view that was a mantra in this Integrative Studies program, was not sufficient evidence of achieving this developmental milestone. Students who gave lip service to embracing multiple perspectives were in the shadow zone of the graphic in Figure 1, representing a superficial level of understanding that gave the appearance of moving from Comparison to Understanding Context. These students immediately exited the Understanding Context plateau and returned to the Comparison portion of the spring where they could maintain their persistent belief that all knowledge was knowable, consistent with "transitional knowers."

It also is important to note the ways in which the environmental context interacts with this theory. Being enrolled in the Integrative Studies program or any learning environment that is intentionally integrative connects students to the process depicted in Figure 1. Yet, among our Integrative Studies students, each student had a distinctive trajectory through the curriculum. It appeared as if some students' understanding of integrative learning was arrested in the sophomore or junior year. When data were compared across students, it became clear that different educational environments or different course sequences affected student understanding of integrative learning. Environments that actively encouraged the experiences that promoted

movement up the spring were more conducive to students' development. In this study, these environments included coursework in Integrative Studies, key Integrative Studies assignments, and interdisciplinary coursework outside of Integrative Studies.

Several limitations of this study should be noted. The data collected for this study were from one institution and were cross-sectional, not longitudinal. Tracing the experiences across time for a set of students would be a more robust approach to documenting developmental changes. Additionally, by focusing on students in a specific academic program, the interview protocol may have privileged the curricular or formal elements of the Integrative Studies program. Although out-of-class experiences were raised and discussed, the primary focus was on students' experiences in the Integrative Studies program.

Discussion and Implications

This study reinforces conventional wisdom about student learning. Active involvement and engagement in class and out of class support student learning, specifically integrative learning (Astin, 1993; Buchbinder et al., 2005; Nowacek, 2005). Students in Integrative Studies demonstrate important learning outcomes, including the capacity to apply new learning to their lives, to compare and contrast different perspectives, and to identify biases and understand context. These intellectual skills are consistent with a cognitive complexity that recognizes knowledge is constructed, but is not yet confident about contributing to knowledge construction. Our Integrative Studies students failed to provide examples of their ability to synthesize diverse perspectives. This finding is consistent with Baxter Magolda's findings (1992, 2001), but not with recent work on students who are enrolled in an interdisciplinary studies curriculum and learning community (Haynes & Leonard, 2010; Newell, 2006). There is empirical evidence that students in interdisciplinary studies are successfully integrating in a sophisticated way (Synthesis).

One possible explanation for the difference in learning outcomes for interdisciplinary students compared to Integrative Studies students is the method used to evaluate integration. The research on interdisciplinary students includes an assessment of a written product. Boix Mansilla and Duraising (2007) point out that assessment of student learning needs to be performance based. They recommend evaluating an academic product such as a research paper or project. By critiquing an academic product,

Newell (2006) is not relying on students' self-report of their learning. My investigation of integrative learning originally requested student work products, but the only assessment tool available was designed to evaluate interdisciplinary writing (Wolfe & Haynes, 2003). Since the courses in Integrative Studies were not taught as interdisciplinary courses, the writing rubric was ill-suited to the assignments. Future research should engage the academic products of students in integrative studies.

An important implication of this comparison of learning outcomes in interdisciplinary studies and integrative studies is that students need to understand the underlying expectations and processes by which they will be evaluated. Faculty need to teach the integrative process and the criteria by which integrative learning will be assessed. Students in both kinds of academic programs crave underlying logic or structure. Having a framework from which to operate, as with Kolb's Experiential Learning Theory (1984) that guided the first-year experience of our students in Integrative Studies, or with the explicit reference to the interdisciplinary process described by Newell (2001b, 2006) and Repko (2007, 2012), gives students a set of expectations. With clear expectations, students can aim to meet those requirements and self-correct as well as respond to the coaching/teaching of others. Using this emerging theory to guide practice and to support assessment can move our work from the realm of sporadic flashes of insight to systematic, logical cultivation of important intellectual tools that can be used to solve complex problems.

The studies of integration in both interdisciplinary and integrative studies contexts offer some recommendations for practice. If different perspectives that conflict with one's own have the potential to provoke intellectual growth, then creating opportunities for students to encounter conflict is developmentally appropriate. Learning theorists such as Vygotsky (1978) have made the case for finding the "zone of proximal development" where the dissonance created by conflict is manageable rather than overwhelming. Educators interested in supporting integrative learning might create opportunities for students to encounter conflict with appropriate supports. These supports may include comprehensive structures such as residential learning communities, strong peer affinity groups, and faculty who are accessible outside of class (Smith & McCann, 2001). Faculty should be encouraged to use a variety of teaching approaches in the classroom, with a particular emphasis on active learning pedagogies, writing, and engagement with peers. A focused commitment in the classroom to interdisciplinary integration shows great promise in promoting integrative learning. First-

year assignments, in particular, need to be relevant to students' lives to help them with Application and to introduce them to the idea that there is no one right answer to most complex questions. By creating curricular and co-curricular opportunities for engaging across difference, faculty can create contexts in which students may encounter conflict and recognize the validity of different perspectives. Students in this study cited the importance of support from peers as well as faculty in managing the stress of conflict.

This comparison of learning outcomes from interdisciplinary and integrative programs points out the power of interdisciplinary work in promoting the most sophisticated form of integration: Synthesis. This comparison has limitations. The interdisciplinary studies research has relied on student products (papers) and the integrative learning study has relied on student interviews. The comparison points out three areas of divergence between interdisciplinary and integrative programs. First, our Integrative Studies students never distinguished between perspectives or disciplines and the *insights* from those perspectives or disciplines. Interdisciplinary programs focus on the insights from the disciplines. Second, Integrative Studies students in this study discussed conflict as a form of cognitive dissonance in need of reconciliation. Students who decided to "agree to disagree" with conflicting points of view had abdicated the work of reconciliation. Unlike their interdisciplinary peers, Integrative Studies students did not appear to be tolerating ambiguity. Finally, Integrative Studies students did not reference any construct resembling the idea of "common ground." Common ground is one way to make sense of conflicting points of view by seeking commonalities in divergent perspectives (Repko, 2012). Both kinds of programs offer outstanding learning potential for students. In either case, a more intentional approach to the integrative work expected from students may lead to learning outcomes that are even more impressive in meeting the needs of the 21st century.

Conclusion

Listening to students and seeking patterns in how they make sense of their Integrative Studies experiences produced the primary findings in this study. The theory emerging from these findings explains developmentally how these students became integrative learners. Students in Integrative Studies did not achieve Synthesis, but there is evidence that students in interdisciplinary studies do succeed with this important learning outcome based on an evaluation of capstone research projects. In any case, there is

no doubt that both interdisciplinary and integrative programs embrace many of the best practices celebrated for their contribution to student learning. Faculty and program administrators interested in promoting integrative learning might use this grounded theory as they shape curriculum or design holistic learning contexts, keeping in mind an interdisciplinary curriculum that includes a capstone research experience may improve students' ability to synthesize.

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