2015

Interdisciplinary Studies Integration from the Faculty Point of View: A Case Study

Kay Donahue Lawson
Marshall University, lawsonk@marshall.edu

INTERDISCIPLINARY STUDIES INTEGRATION FROM THE FACULTY POINT OF VIEW: A CASE STUDY

A dissertation submitted to
the Graduate College of
Marshall University
In partial fulfillment of the
requirements for the degree of
Doctor of Education
in
Curriculum and Instruction
by
Kay Donahue Lawson
Approved by
Dr. L. Eric Lassiter, Committee Chairperson
Dr. Ronald B. Childress
Dr. Lisa A. Heaton
Dr. Frances Hensley

Marshall University
August 2015

APPROVAL OF DISSERTATION

We, the faculty supervising the work of Kay Lawson, affirm that the dissertation, *Interdisciplinary Studies Integration from the Faculty Point of View: A Case Study*, meets the high academic standards for original scholarship and creative work established by the Curriculum and Instruction program and the College of Education and Professional Development. This work also conforms to the editorial standards of our discipline and the Graduate College of Marshall University. With our signatures, we approve the manuscript for publication.

Dr. L. Eric Lassiter, Committee Chairperson — Date 7-7-15

Dr. Lisa A. Heaton, Committee Member — Date 7-7-15

Dr. Ronald B. Childress, Committee Member — Date 7-7-15

Dr. Frances Hensley, Committee Member — Date 10-27-15

Huntington, WV

DEDICATION

This work is dedicated to the most important people in my life – my husband and daughters – for their much needed and appreciated love, support, and encouragement along the way.

ACKNOWLEDGEMENTS

I wish to acknowledge the contributions and support of those who made this research project possible. I gained invaluable experiences and knowledge through the process of identifying a topic, defining the goals of my research, designing the study, gathering and analyzing data, and writing my dissertation. I am grateful for the help and guidance I received from the earliest challenges of narrowing the scope of my research, through acquiring a scholarly language, to exploring the principles of mixed methods research, and finally, in writing my dissertation. I would like to express my gratitude to members of my committee:

Dr. L. Eric Lassiter, who readily accepted the challenge to chair my committee, listened to my ideas and guided me in crafting the best ones, carefully read multiple drafts and provided his finely honed editing skills, and most importantly, helped me to find my researcher's voice and perspective.

Dr. Lisa Heaton, who helped me create the electronic survey and guided me to more deeply consider how to connect my research questions to data collection and analysis while her attention to details of style and formatting gave an added polish to my writing.

Dr. Ron Childress, who challenged me to think about and see my research from a number of perspectives, especially in ways that gave much needed focus to my research.

Dr. Frances Hensley, whose enthusiasm and encouragement helped me to understand the value of my research. I appreciate the time and care with which she offered guidance and suggestions that gave direction and clarity throughout the course of the study and the writing process.

I also would like to thank Dr. Sherri Smith, Director of the Center for Teaching and Learning at Marshall for answering my questions about First-Year Seminar (FYS) and for

providing the historical context and timeline for the university's initiatives to integrate interdisciplinary studies into the undergraduate curriculum. I want to thank Jennifer Sias, in her recent role as FYS Coordinator, for keeping me up-to-date on FYS activities and sharing her perspectives on the evolution of FYS.

I owe the FYS Faculty a debt of gratitude for their willingness to participate in this study. Each one took time in his or her busy schedules to answer the survey and, for those who agreed to be interviewed, gave the extra effort that was clearly revealed in the study as a characteristic of those who do interdisciplinary work.

TABLE OF CONTENTS

LIST OF TABLES

ABSTRACT

INTERDISCIPLINARY STUDIES INTEGRATION FROM THE FACULTY POINT OF VIEW: A CASE STUDY

The purpose of the case study was to examine the perceptions of university faculty regarding the impact that integrating interdisciplinarity into the undergraduate curriculum had on their work in curriculum development and teaching; specifically, as it related to the navigation away from their discipline specializations, and through completion of professional development, creation of new courses (First-Year Seminar), and teaching FYS. Because they serve roles in the development and delivery of the curriculum that are integral to the institution and its culture, faculty perceptions about the process of change and the establishment of interdisciplinarity in the undergraduate curriculum are significant. A researcher-developed survey and participant interviews were used to collect data. The study population consisting of faculty who taught the First-Year Seminar (a required general education course in the undergraduate curriculum) were surveyed. A sample of faculty representing a cross-section of disciplines was interviewed for their perspectives on preparation, development, teaching, and reflections of their interdisciplinary courses. Findings from the case study revealed that FYS faculty perceived their role as integral to university-wide initiatives to establish interdisciplinarity in the undergraduate curriculum; that they focused on interdisciplinary learning activities and assignments supportive of the university's learning outcomes; that they spent a greater amount of time researching and designing different types of projects focused on active learning than in their disciplinary-specific courses; processes instead of products were stressed in FYS classes (e.g., critical thinking and problem solving, the core modes of thinking in FYS); and, their interdisciplinary backgrounds prior to completing the required professional development course were important to their interdisciplinary curriculum development and teaching. Overall, the study's participants perceived that their interdisciplinary work provided opportunities to explore new approaches to teaching and learning outside of their disciplinary specializations. While they valued their interdisciplinary work, FYS faculty reported unexpected challenges such as an unusually large of amount of time required for interdisciplinary work, a need for increased knowledge in unfamiliar disciplines, and development of new classroom strategies focused on teaching primarily freshman students.

CHAPTER 1

INTRODUCTION

Introducing the Problem: Faculty and Interdisciplinary Studies

The emergence of interdisciplinarity (ID) as a framework for teaching and learning in higher education impacts the work of faculty as curriculum developers and teachers. From a review of the literature, the significance of this growing trend to integrate interdisciplinarity develops around three themes. The first is the historical context and development of interdisciplinarity in higher education as a counterpoint to disciplinarity. The second centers on the role of faculty as discipline specialists, curriculum developers, and teachers (specifically, in undergraduate studies). A third theme addresses issues pertinent to how interdisciplinarity becomes situated inside higher education's organizational structures and is influenced by institutional policies; in particular, the significance of faculty participation and the impact of their contributions. A summary of selected studies has provided context and understanding for the development of interdisciplinarity in higher education, its impact on teaching and learning, and the role of faculty.

Interdisciplinarity developed throughout 1960's higher education reforms aimed at opening up higher education curriculum to feminist and civil rights scholarship. Over the next two decades, adoption of interdisciplinarity represented innovative initiatives to expand standard disciplinary content and areas of inquiry (Bastedo, 1999; Gaff, 1999). Although integration of interdisciplinarity grew during this period, a scarcity of established models or curricular frameworks resulted in diverse definitions of interdisciplinarity and a mix of curricular designs. Interdisciplinary scholars recognized the need for guidance in developing interdisciplinarity and contributed efforts to bring focus to this emerging area of study and research. Among the

important contributions are those of Kockelmans (1979) and Klein (1985, 1990, 1996, 1999) who are often cited for their scholarship on the historical context and development of interdisciplinarity in higher education. Their seminal works provide guidance for institutions and faculty in developing interdisciplinary studies programs (IDS) and interdisciplinary research (IDR).

Significant scholarship by Newell (1986, 1998, 2001) is central to a discourse that aims to define interdisciplinarity, identify criteria for building interdisciplinary programs, create course frameworks, and provide guidance to an emerging field of research. In 1979, Newell and fellow interdisciplinarians organized the Association for Integrative Studies (which in 2013 became the Association for Interdisciplinary Studies). The organization's mission then and now supports ongoing work to professionalize the field and promote the contributions of interdisciplinary research and scholarship in higher education. Among these contributions was the convening of a task force charged with developing recommendations for general education IDS programs and guidelines for their support. That Task Force (Fiscella, et al, 2000) produced a report organized around six categories that include issues relating to program goals, curriculum, teaching and learning, faculty, administration, and assessment.

The scholarship of early interdisciplinary advocates provided the basis for later research that examines the state of ID resulting from decades of instituting programs. In the *ASHE Higher Education Report*, Holley (2009b) presented an overview of interdisciplinarity and American higher education. The study identified a number of challenges facing institutions undertaking integration of interdisciplinarity. They include: (1) defining what interdisciplinarity means to the institution and its stakeholders; (2) identifying the role of faculty in change brought by interdisciplinary integration; and (3) examination of institutional structures for ways in which

disciplines create boundaries and underpin the work done in classrooms. A common theme tied to these challenges is the predominance of the disciplinary framework that organizes colleges and universities which in turn governs the employment and work of the faculty. Additional research by Lattuca (2001) and Smith and McCann (2001) examined a variety of ID programs for approaches to integration, effective teaching and learning, and the role of disciplines. A common perspective found across the writings of these authors was ID as counterpoint to disciplinarity and the long-held traditions in higher education that influence the work of faculty.

Central to the university and its disciplinary framework is the work of faculty as discipline specialists, curriculum developers, and teachers. Their knowledge and experiences in discipline-specific specializations provide the basis for design of the undergraduate curriculum. Faculty are responsible for not only the creation and implementation of courses but also for the teaching and learning in classrooms. Traditionally, a single disciplinary specialization has been the foundation for faculty's institutional engagement, their work and its rewards. The introduction of interdisciplinarity into the conventional framework of undergraduate education often challenges faculty to embrace change that affects the curriculum and the institutional cultures in which they work. Introducing interdisciplinarity into the curriculum, therefore, can be greatly challenging but not impossible. In studies by Holley (2009a) and Smith and McCann (2001), for example, a wide range of academic programs were examined for how interdisciplinarity was integrated into the processes and approaches used to reform teaching and learning. Their research revealed that successful innovation depends on changing the organizational culture which in turn affects the role of the faculty in curriculum development and teaching.

Issues related to how interdisciplinarity becomes situated inside higher education's organizational structures and is influenced by institutional policies are the focus of studies by Klein (2010) and Lattuca (2001). Their books are representative of a major emphasis in scholarship that focuses on establishing interdisciplinarity in higher education. They each addressed significant factors associated with the influential role of academic traditions in shaping institutional policies that contribute barriers to change. Lattuca (2001) emphasized the importance of disciplinary specializations as integral to faculty scholarship and teaching. Unfamiliarity and misunderstandings about interdisciplinary inquiry, however, affect value placed on interdisciplinary scholarship and create disconnect with disciplines.

As a result, efforts to create change or introduce innovative ideas are often met with resistance. Lattuca (2001) included suggestions for creating favorable environments for interdisciplinary teaching and learning that included understanding the influence of disciplines, the value of faculty work, and recognition and rewards for those doing the work. Klein's (2010) emphasis was on models and processes for establishing interdisciplinary studies programs. Her early involvement in efforts to integrate interdisciplinarity, professional collaborations, interdisciplinary teaching, and research provide a foundation for presenting strategies, theoretical frameworks, and resources for creating interdisciplinary programs in higher education.

There are numerous ways in which interdisciplinarity materializes in higher education. Evidence for the variety of settings and designs was found in works such as those by Augsburg and Henry (2009), Newell (1986), and Lattuca (2001). Generally, the most frequent settings for research studies on interdisciplinarity and interdisciplinary studies are program or departmentally-based arrangements. In some instances, degrees are awarded in interdisciplinary studies while some degrees provide options for interdisciplinary minors. A common graduation

requirement in undergraduate degree programs includes one or two interdisciplinary courses or learning activities. Other interdisciplinary-focused higher education opportunities include fully-interdisciplinary colleges or college-level areas in universities.

Many of the studies that examined program or department level integration of interdisciplinarity focused on the effects of large-scale curricular or institutional change. The results often mean that not all areas of the organization are equally affected by the change. Depending on how successes or failures are defined, a variety of reasons were cited for mixed outcomes. From this perspective, Klein (2010) noted that interdisciplinary studies programs or other examples of more complex arrangements are difficult to establish and that starting in a smaller way may provide better opportunities for sustaining interdisciplinarity.

Context for the Study

Interdisciplinary studies at Marshall University includes the *First-Year Seminar* (FYS), a required course in the new undergraduate Core Curriculum that began in the Fall 2010 semester. The inaugural group of FYS instructors was recruited from the university's faculty and completed the professional development course, *FYS Institute,* during the Spring 2010 semester. Unlike other interdisciplinary studies courses offered across the institution's various colleges, FYS is required of all undergraduates with the expectation that it be completed during the freshman year as it serves to anchor students' learning as they complete their degree programs (General Education, 2013).

To date, faculty continue to be recruited from Marshall's academic departments as openings occur and new course sections are created to meet enrollment demands. Groups of faculty completed the *FYS Institute* offered each semester between Spring 2010 and Spring 2014.

Because several sections of FYS are scheduled during both fall and spring semesters, there is an ongoing need for faculty to teach FYS.

The growth of interdisciplinary studies programs and curriculum development has continued since Fiscella et al's 2003 report and includes Marshall University, which enrolled its first freshman class in the new Core Curriculum beginning with the academic year 2010-2011 (General Education, 2013a). Included in the new plan of required general education is an interdisciplinary-based course that provides a framework around which student coursework is organized. The *First-Year Seminar* is planned, designed, and taught by faculty. "This new core model provides that all Marshall University students

. . . will complete a first year seminar (FYS) . . . and provide the foundation for further general education courses as well as study in the majors" (General Education, 2013b). An outline for the new general education framework is contained in the *Core Foundations Ad Hoc Committee Recommendation (SR-08-09-36R CFAHC* (2009) and outlined under the section *Core I: 9 Hours* are the criteria for developing the interdisciplinary course (FYS), provisions for faculty development, and requirements for who will teach the courses.

The university's initiatives to integrate interdisciplinary studies are not unique but are similar to those of other higher education institutions as demonstrated in the literature. These efforts include developing strategies for recruiting faculty (who are recognized for their discipline specializations) to take on creating and teaching interdisciplinary courses. This type of work reflects traditional faculty responsibilities for developing the university's curriculum. The FYS faculty have not only had first-hand experience in creating and teaching an interdisciplinary course but also contributed to the university's initiatives to integrate interdisciplinary studies.

Because Marshall's recent efforts to embed interdisciplinary studies into the undergraduate curriculum continue to evolve and depend on faculty involvement, the views of FYS faculty may be valuable to the university and to other institutions undertaking similar efforts.

The initiative to reform Marshall University's curriculum involved the creation of new courses based on interdisciplinary concepts. Because the plan did not include provisions for hiring additional faculty with ID specialization, faculty from each of the colleges are eligible to design and teach the new courses. Based on prior research presented in the literature review, issues related to discipline specialization play an important part for faculty involved in curriculum development. Studies have examined efforts to integrate interdisciplinary concepts into undergraduate programs, departments, and colleges as well as less complex designs for interdisciplinary curriculum. The plan undertaken by Marshall is an example of Klein's (2010) suggestion that starting out small may have potential for creating a sustainable IDS program. Critical issues presented in the literature – the evolving nature of interdisciplinarity and the influence of discipline specialization on faculty involved in developing and teaching interdisciplinary courses – provide context for examining the faculty's perceptions of their involvement in rethinking the development and teaching of Marshall's undergraduate curriculum.

Statement of the Problem

Taking a lead from a review of the literature, then, a key problem in the study of interdisciplinarity is just how faculty navigate away from their disciplinary specializations and enter into interdisciplinary spaces in which they are expected to develop interdisciplinary curriculum, teach interdisciplinary courses, and engage their students in critical thinking based in

larger assumptions of interdisciplinarity. This process is largely unknown, and very little has and been researched or written about it.

While the literature provides many examples of programs that were examined for their successes and failures, there are few studies focused on course-based or introductory-level undertakings of interdisciplinary integration; even fewer on the role of the faculty in these programs. Though many studies marginally consider faculty and their experiences, few center on the work of faculty and their perspectives related to interdisciplinarity, curricular change, and teaching. The paucity of research in this area presents research opportunities, and was thus the prompt for this particular study.

In her overview of interdisciplinarity and American higher education, Holley (2009b), cited a number of important texts that address issues focused on defining interdisciplinarity, its impact on knowledge production, and motivation for scholarship by university faculty. While the scholarship contributed contextual understanding of interdisciplinarity in universities, her purpose was to focus on teaching, learning, and research. "Such a goal is of benefit to institutional administrators and faculty as colleges and universities struggle to successfully develop and implement interdisciplinary curricula and research activities" (p. 5). Because they serve roles in the development and delivery of the curriculum that are integral to the institution and its culture, faculty perceptions about the process of change and the establishment of interdisciplinarity in the undergraduate curriculum are significant.

Purpose of the Study

This study therefore focused on a specific case involving Marshall University's core curriculum to address this larger problem addressed in the literature. The purpose of this study was to examine perceptions of Marshall University's faculty regarding the impact that

integrating interdisciplinarity into the undergraduate curriculum had on their work in curriculum development and teaching; specifically, as it related to the navigation away from their discipline specializations, and through completion of professional development, creation of new courses (First-Year Seminar), and finally teaching FYS.

The Research Questions

As a context-specific study, the following key research questions were addressed:

1. How do faculty perceive their role integrating interdisciplinarity into Marshall University's undergraduate curriculum?
2. How have faculty worked through a new assignment to teach an interdisciplinary course - beginning with completion of the *FYS Institute* (professional development course), through teaching the course, and continued teaching in their disciplines?
3. How have faculty perceptions of interdisciplinarity at Marshall University been changed by involvement in activities related to FYS?
4. What has changed in the faculty's discipline-specific course preparation and teaching after their interdisciplinary and FYS experiences?

Definitions of Terms

For the purpose of this study, the following definitions were used:

First-Year Seminar (FYS) – a required one-semester long interdisciplinary course in Marshall University's Undergraduate Core Curriculum.

FYS Institute – a semester-long professional development course required of all faculty planning to teach a First-Year Seminar, in which faculty are required to develop a theme, design the course, and write a course syllabus.

Interdisciplinarity (ID) – Lattuca (2001) notes that most definitions specify the integration of disciplines but prefers the definition "as the interaction of disciplines" and implications for encompassing the diversity of faculty understandings of interdisciplinarity (p. 78).

Interdisciplinary Studies (IDS) – Klein and Newell (1998) offer the following widely-quoted definition: "A process of answering a question, solving a problem, or addressing a topic that is too broad or complex to be dealt with adequately by a single discipline or profession… [It] draws on disciplinary perspectives and integrates their insights through construction of a more comprehensive perspective" (p. 393-4).

Interdisciplinary course – undergraduate course designed around the concepts of interdisciplinarity.

Significance of the Study

The questions speak to a gap in the literature that addresses faculty perceptions about their role in developing interdisciplinary curriculum, the impact of interdisciplinarity integration on their work as disciplinary specialists and change experienced through interdisciplinary course preparation and teaching. Marshall University's initiative to integrate interdisciplinarity through course-level development followed suggestions by Klein (2010) to start small. At the course-level, faculty are major contributors to these initiatives through course creation and teaching. Therefore, a study based on faculty interviews and surveys has potential for providing information about not only problems (as suggested by the literature) but also about how to contribute further insights and understandings on these and yet-to-be identified concerns from the point of view of faculty.

Klein (1999) identified a number of current trends to integrative approaches in general education and noted that modes of learning involving complex analysis and problem solving are

achieved through emphasis on connection and integration. In a review of information describing Marshall University's Core Curriculum, similar language is used to address goals and anticipated outcomes generated by integration of interdisciplinary studies (General Education, 2013). Although outcomes of her study were not explicit at the outset, a few were anticipated that aligned with trends identified by Klein (1999). They included multiple perspectives about interdisciplinarity, faculty roles in curriculum development and teaching, and interdisciplinary studies as innovative change emphasizing critical thinking and problem solving.

Curriculum development and teaching are the primary concerns of higher education faculty. In the traditional model of university organization, faculty are appointed to their positions based on discipline specialization and they typically teach courses in their disciplines. Preparation for teaching in higher education is often based on long-established practices founded in disciplines, research specializations, and in mentoring processes of graduate students within these frameworks. Recognition and career advancement in the institution are based in a system centered on discreet disciplines. Although academic preparation for specialization in interdisciplinary studies exists, the majority of academics aspire to a single discipline-specific focus. The majority of academics, therefore, follow a traditional preparation and have expectations for employment based in traditional disciplinary-based organizations and deep-rooted institutional practices (Lattuca, 2001).

A review of literature demonstrated that problems related to integration of interdisciplinarity into the undergraduate curriculum have been studied from various and diverse perspectives. From Holley's (2009a) point of view, less attention has been given to organizational and cultural factors of teaching and learning, and by association, to faculty who are primarily responsible for teaching and learning. Their work in curriculum development and

classroom teaching has been given even less attention; and this is especially true when it comes to faculty perceptions of their role in ID integration and the impact it has on their work. Lattuca (2001) stressed the importance of creating favorable environments for interdisciplinary teaching and learning; factors include understanding the value of faculty work, influence of disciplines, and rethinking teaching and learning. A study based on faculty interviews and surveys has potential for providing information about not only problems (as suggested by the literature) but also has potential to contribute further insights and understandings on these and yet to be identified concerns from the point of view of faculty.

Delimitations

This study was limited to Marshall University faculty who completed the *FYS Institute* and taught an FYS course between the Spring 2010 and Spring 2014 semesters.

CHAPTER 2

LITERATURE REVIEW

Introduction

Searches of EBSCO, ProQuest, and Google Scholar attested to substantial growth of scholarship of interdisciplinarity over the past three-plus decades, especially concerning its growing acceptance in higher education. Beginning with Newell (1986), later Edwards (1996), and including the work of Brint et al. (2012), the rapid growth of interdisciplinary majors represents an increase of nearly 250%. While academia maintains its traditional organization based in disciplines, implementing interdisciplinarity represents innovation and change. As expansion of interdisciplinarity in undergraduate programs continues at a fast pace, little empirical research has examined such programs for curricular and organizational features (Knight et al, 2012). Specifically lacking in the literature are the perspectives of faculty from their viewpoints as disciplinarians as they work to integrate interdisciplinarity into the curriculum through designing and teaching courses.

Further reading of interdisciplinary scholarship revealed additional contextual factors related to the role of faculty as curriculum developers and the impact of integration of interdisciplinarity by higher education institutions. Despite decades of varying examples of reform and change, historical traditions have remained influential in the overall institutional arrangements of colleges and universities. Those most frequently cited are expectations for faculty contributions, hiring practices, discipline-based curriculum, departmental organization, and general policies (Holley, 2009b; Kockelmans, 1979; Smith and McCann, 2001).

The following review of literature examined issues of interdisciplinary integration that impact the work of faculty as curriculum developers and teachers and is presented in the following order of themes:

1. The historical context and development of interdisciplinarity in higher education.
2. Situating interdisciplinarity inside higher education's traditional framework of organization and policies; in particular, faculty participation and their contributions.
3. The role of faculty as discipline specialists, curriculum developers, and teachers (specifically, in undergraduate studies).

Historical Context and Development of Interdisciplinarity

Interdisciplinarity developed during 1960s higher education reforms aimed at opening up higher education curriculum to feminist and civil rights scholarship. Over the next three decades, adoption of interdisciplinarity represented innovative initiatives to expand standard disciplinary content and areas of inquiry (Bastedo, 1999; Gaff, 1999). Early development of interdisciplinarity reflected a diversity of approaches in designing courses, integration of disciplinary content, and creative ideas for new areas of study (e.g. women's studies) that often were unique as institutional attempts to attract students interested in non-traditional study opportunities. The establishment of innovative colleges and universities such as Hampshire College and The Evergreen State College created models for alternative institutions offering undergraduate interdisciplinary studies programs and degrees (Kliewer, 2001; McNeal & Weaver 2001).

While a few alternative institutions forged new paths for establishing alternative models of curriculua established institutions planned for integrating interdisciplinarity. Several early examples are frequently cited as models for creating undergraduate interdisciplinary degree

programs. The scholarship of Newell (1992) and Klein (2010) was the result of their experiences and work to establish interdisciplinary studies at their respective institutions – Miami University of Ohio and Wayne State University respectively. Among the programs described in essays collected by Augsburg and Henry (2009), three are recognized as leaders in IDS – University without Walls/University of Massachusetts at Amherst, Appalachian State University, and San Francisco State University.

Not all interdisciplinary learning has historically occurred within the framework of degree programs. The development of area studies, cluster courses, or specialized courses provides the foundation for interdisciplinary teaching and learning for many institutions. Klein (1990) noted growth of interdisciplinarity in development of "area studies" focused on shared themes or problems. According to Holley (2009b), reform of undergraduate curriculum early in the twentieth century led to a more cohesive curriculum that included emphasis on integrative learning and elements of interdisciplinarity. A commonly replicated model for a core curriculum was developed at the University of Chicago. Also cited as significant is the establishment of the National Science Foundation (NSF) and National Institutes of Health (NIH), both sources of higher education funding for the post-World War II initiatives to advance scientific knowledge. "The commitment to supporting researchers regardless of disciplinary affiliations was further reflected in the organization of the NSF by functional areas rather than disciplinary units. Many of the emerging critical areas of research (such as biodynamics and computer science) identified by the NSF in the 1960's and1970's signaled the need for applied, interdisciplinary teams" (p. 41).

Although integration of interdisciplinarity grew during this period, a scarcity of established models or curricular frameworks resulted in diverse definitions of interdisciplinarity and a mix of curricular designs.

The diversity of interdisciplinary initiatives resulted in numerous definitions and interpretations of the meaning of interdisciplinarity. Absent from a generally recognized understanding were characteristics associated with the disciplines – an identifiable field of study, a body of knowledge, a community of scholars bound together by shared norms, values, and beliefs, and a specialized system of language and symbols (Holley, 2009b). The earliest perceptions of interdisciplinarity were summarized by Newell (1986), who observed interdisciplinary education moving from the "radical fringe to the liberal mainstream" (p. 36). For scholars of interdisciplinarity such as Kockelmans, Klein, and Newell, the mid-century resurgence of interdisciplinary studies together with undergraduate curriculum reforms provided the catalyst for their efforts to move toward professionalization of interdisciplinary studies.

Klein, who writes extensively on the history of interdisciplinarity, considers the 1960s and 1970s as a watershed era – "Identification of interdisciplinarity with reforms of the sixties and seventies is so strong that many people are inclined to associate the very concept of interdisciplinarity with that remarkable era" (1990, p. 36). She cited 1972 as a significant date in the history of interdisciplinarity with publication of the seminal work *Interdisciplinarity: Problems of Teaching and Research in Universities* (OECD, 1972). It spurred discussions of interdisciplinarity among teachers and scholars about their interdisciplinary activities.

During a second significant period, in 1979, publication of the essay collection *Interdisciplinarity and Higher Education* (Kockelmans, 1979) contributed scholarship on topics such as defining interdisciplinarity, interdisciplinary methodology, and historical perspectives on

interdisciplinary education (Klein, 1990). Also during this same time, two professional organizations were founded – the Association for Integrative Studies (AIS) (which in 2013 became the Association for Interdisciplinary Studies) and the International Association for the Study of Interdisciplinary Research (INTERSTUDY). After serving as President of AIS in its inaugural year, William H. Newell continued service to the organization including as Secretary-Treasurer and as Executive Director. He was instrumental in establishing a home for AIS at Miami University (OH) where it remained until its move to Oakland University (MI) in 2014. The association promotes study of interdisciplinary theory, methodology, curricula, and administration. The mission of the group is furthered through an annual conference, journal, newsletter, website, social media, AIS Honor Society, and elected board of directors (AIS Website, 2014).

Over the course of more than two decades since publication of seminal texts and the creation of professional associations, scholars continued contributions to literature written in support of establishing a firmer foothold for ID in academia. Interdisciplinary scholars recognized the need for guidance in developing interdisciplinarity and contributed efforts to bring focus to this emerging area of study and research. Among the important contributions were those of Kockelmans (1979) and Klein (1985, 1990, 1996, 1999, 2001, who are often cited for their scholarship on the historical context and development of interdisciplinarity in higher education. Their seminal works provide guidance for institutions and faculty in developing interdisciplinary studies programs and interdisciplinary research (IDR).

Definitions, Meanings, and Value of Interdisciplinarity

Significant scholarship by Newell (1986, 1998, 2001) is central to a discourse that aims to define interdisciplinarity, identify criteria for building interdisciplinary programs, create

course frameworks, and provide guidance to an emerging field of research. In 1979, Newell and fellow interdisciplinarians organized the Association for Integrative Studies (which, again, in 2013 became the Association for Interdisciplinary Studies). The organization's mission then and now (under its new organizational title) supports ongoing work to professionalize the field and promote the contributions of interdisciplinary research and scholarship in higher education. Among these contributions was the convening of a task force charged with developing recommendations for general education IDS programs and guidelines for their support. That Task Force produced a report (Fiscella, et al, 2003) organized around six categories that included issues relating to program goals, curriculum, teaching and learning, faculty, administration, and assessment.

As interdisciplinarity developed across campuses, the multiplicity of applications was represented in the diversity of programs. Despite growth, leading scholars who observed continuing marginalization of interdisciplinarity expressed concern about whether it was being taken seriously in academia. In response, books and articles were written with goals that included assembling resources and clarifying the meaning of interdisciplinarity and its role in higher education. (Klein and Newell, 1996; Newell, 1998). An early focus was to define the term relevant to its position in the curriculum and its relationship within, and to, a structure of disciplines. Newell and Green (1982) defined interdisciplinary studies "as inquiries which critically draw upon two or more disciplines and which lead to an integration of disciplinary insights" (p. 24). In an endnote, Newell and Green recognized other efforts at a definition and recommend reading these other "notable attempts" (p. 34) such as that of Kockelmans (1979).

While this definition kept the centrality and focus on the structure of disciplines as a basis familiar to faculty, later scholarship moved toward the process and ideas for applications in

undergraduate teaching and learning. A second concern developed around making interdisciplinarity accessible and relevant for faculty trained in discipline-specific fields who struggled with integration. Klein and Newell (1996) provided a definition aimed at this purpose: "interdisciplinary studies may be defined as a process of answering a question, solving a problem, or addressing a topic that is too broad or complex to be dealt with adequately by a single discipline or profession" (p. 3).

Repko (2008) recognized that for more than a century, the disciplines have been "platforms for imparting knowledge and generating new knowledge" (p. 3) while a growing trend emerged in the growth of interdisciplinary learning at all levels. In his book on interdisciplinary research, the first chapter is devoted to explaining the meaning and presents a definition of interdisciplinary studies. Repko aligned his scholarship with the integrationist point of view (i.e., integration should be the goal of interdisciplinary work because integration addresses the challenge of complexity (p. 3). He presented a definition that integrates previous attempts, including that of Klein and Newell: "Interdisciplinary studies is a process of answering a question, solving a problem, or addressing a topic that is too broad or complex to be dealt with adequately by a single discipline, and draws on the disciplines with the goal of integrating their insights to construct a more comprehensive understanding" (p. 16).

The growth of diverse programs and multiple applications represented efforts by institutions and their faculties to create interdisciplinary studies from within their organizations. As a result, varying definitions of interdisciplinarity and models for combining disciplines emerged that sparked a number of debates. A number of scholars recognized the emerging trend and responded with efforts at greater clarity of meaning. For example, Ellis (2009) and Holley (2009a) emphasized the importance of delineating types of interdisciplinarity - multidisciplinary,

interdisciplinary, and transdisciplinary. Klein (1990) referred to an earlier hallmark text she credits with the newly emerging theoretical framework and typology of definitions that includes pluridisciplinary. Repko's (2008) recent addition to the discussion attempts to sort out many of the terms used throughout the literature and contributes his definitions of two of the most common descriptions of interdisciplinary studies. His perspective stems from the premise that interdisciplinary studies depends on disciplinary insights to understand a problem and defines multidisciplinarity as "the placing side by side of insights from two or more disciplines" (p. 13). For example, in a course using this approach, a topic is explained from the perspectives of multiple disciplines without attempting to integrate the insights. In transdisciplinarity, the approach moves beyond disciplinary boundaries and "theories, concepts, and methods are not borrowed from one discipline and applied to another interested in the same problem" (p. 15). Therefore, the key to understanding types of interdisciplinarity is in the degree to which integration is central to ways in which disciplines are combined.

While these interdisciplinary scholars contributed to efforts to professionalize ID work, other scholars contributed to solidifying the value of interdisciplinarity in undergraduate education. Henry (2005) argued that recent recognition for the value of ID answers the challenges leveled at ID and questions of its sustainability. He cites reasons to value ID: (1) it answers criticism of traditional higher education for failing to provide quality undergraduate education; (2) honors-type features of IDS programs are effective in engaging active student learners; (3) its record of success in connecting pedagogical practice and student learning; (4) the changing American workplace needs the knowledge and skills learned through IDS; and (5) the collapse of traditional disciplinary boundaries and their autonomy.

Interdisciplinarity and Undergraduate Education

Development of ID in higher education has occurred primarily within the undergraduate curriculum and often within the framework of general education. Klein (2010) noted that between the 1980s and into the 2000s, one of the fastest growing sectors of IDS was general education. Trends reflective of ID integration as identified by Gaff (1999) were evidenced in efforts such as updates in the subject content of liberal arts and sciences, teaching of diversity, use of themes and problems upon which to build courses, seminars, and capstones, and clustering of courses in various combinations.

Newell (2010) addressed the role of IDS as part of the development of general education of core curricula. He observed that ID is attractive as an innovative approach for institutions working to update the dominant organization of disciplines. Because general education's learning outcomes are central to all students' undergraduate experiences, knowledge and skills gained through interdisciplinary learning become valued by educators. In his reflection on the status of interdisciplinary general education, Newell stated "only interdisciplinary studies can integrate what insights the various disciplines have to offer into the most comprehensive understanding currently possible of any particular complex problem" (p. 367).

The works of Hursh, Haas, and Moore (1990), Klein (1996), and Gaff (1999) have also contributed to a body of literature addressing ID in general education. As ID developed, the need for integration strategies and models for implementing IDS grew. Scholars such as Hursh, et al. (1990) addressed issues related to designing curriculum less tied to a loose construct of courses and closely aligned with theories of learning associated with Dewey, Piaget, and William Perry. Answering questions of how knowledge is acquired through IDS, Klein (1996) presented a

concept she terms “crossing boundaries” as an interdisciplinary approach to knowledge (e.g. as in moving from discipline to discipline).

Development of Interdisciplinary Resources: New Pedagogies

As the push for integration of ID produced curricular change and new programs, faculty and administrators grew to recognize needs for new approaches to teaching and learning. Although a number of previous authors in this review have included references to the importance of developing resources for teaching and learning, a number of other scholars have researched and discussed more specific ways to address their development. In their collection, Smith and McCann (2001) examined experiences and lessons from a variety of institutions that initiated new approaches to effective teaching and learning. While they identified examples of impediments to institutional change, they emphasized ways in which changes in organizational structure, culture, and pedagogy support new approaches to teaching and learning. Lack of interdisciplinary teaching expertise as described by Callanan (2004) is a good example of the primary challenge faced by faculty: “When I found myself engaging with this topic, one about which I received no formal training, I was forced to rely on my instincts as an intellectual rather than my knowledge as an expert” (p.388).

Haynes (2002) developed new pedagogies while teaching in the interdisciplinary studies program at University of Miami-Ohio. From the perspective of a new faculty member, she edited a collection of articles that address factors impacting efforts to develop new teaching and learning pedagogies. She emphasized the importance of understanding how faculty preparation in a single discipline, institutional focus on research activities, and lack of rewards for teaching hinder initiatives to develop new pedagogies. DeZure (2010), in writing about interdisciplinary pedagogies in higher education, proposed adopting recent concepts of constructivist teaching

where students actively construct knowledge within the context of collaborative and cooperative learning. While she recognized differences in these methods, her premise was based on student-centered learning in a team-taught classroom. But because these pedagogical changes present challenges to traditional training of college faculty working to engage in interdisciplinary teaching and learning, DeZure recommended establishing professional development that will support new pedagogical approaches. She and Haynes shared similar perspectives in that they both stress that there is no single method of interdisciplinary teaching: "interdisciplinary teaching and learning," wrote DeZure, "requires a host of powerful pedagogies to inspire and enable teachers and students to grapple effectively with the complexity of problems we face in the twenty-first century" (p. 384).

Development of Interdisciplinary Resources: Curricular Design

As new pedagogies evolved, a demand grew for resources to support work of faculty in the classroom. There are numerous examples in the literature addressing program creation, course development, curriculum design, and syllabus writing. The diversity of interdisciplinary programs is demonstrated in articles that provide design strategies and models from which faculty and their institutions can learn. In their series of steps designed to establish interdisciplinary studies as a signature area, Stone, Bollar, and Harbor (2009) presented an initiative undertaken at the University of Colorado at Denver. They considered influences related to institutional cultures that marginalize ID. To lessen the impact, they recommended integration of ID into the unit's mission and creation of faculty and administrator networks. Bailes (2002) presented innovative strategies for curriculum design based on his work in the San Francisco State University's Social Sciences Program. They included discussion of frameworks based on student self-designed models and creation of new degree programs. A more comprehensive

review of programs was compiled by Augsburg and Henry (2009). Each author wrote from a participant's viewpoint, describing programs with varying degrees of success, and focus on issues that include resources.

In response to the momentum of interdisciplinary education in the 1990's, Klein (1999) mapped out the issues of disciplinary change, interdisciplinary fields, and general education. Scattered throughout the paper are examples of ID practice for integrating curriculum, integrative process and pedagogies, assessment, faculty development, institutional change and support strategies. It is a valuable resource that addresses important issues for faculty and administrators planning for interdisciplinary education. In a later publication, Klein (2006) assembled a comprehensive collection of resources for course design and teaching for faculty, curriculum committees, and administrators. Newell (1992, 1994) drew upon his experiences at Miami University-Ohio's School of Interdisciplinary Studies in his exploration of how issues of interdisciplinary education are resolved in practice. He included a framework for course design, faculty development, course and theme development, and examples of evaluation.

For many scholars, making resources accessible and ready to use has been important. Fiscella and Kimmel (1999) and in an update by Klein and Newell (2002), compiled and wrote an annotated bibliography of a wide range of resources for teachers and administrators across public school and higher education. The *Guide to Interdisciplinary Syllabus Preparation* (Newell, 1998) remains a useful framework for higher education faculty unfamiliar with designing an interdisciplinary course syllabus. Texts by Augsburg (2005) and Repko and Szostak (2014) have filled the need for interdisciplinary studies textbooks. In each case, the authors have drawn from their own experiences, research, and past scholarship in developing their texts meant to guide teachers and students in how to think like interdisciplinarians.

Sustainability of Interdisciplinarity

As interdisciplinarity gains wider acceptance in higher education, important issues continue to emerge that affect faculty preparation, institutional governance, and future sustainability. Interdisciplinary research is a significant issue that raises questions related to faculty preparation as interdisciplinary researchers and teachers, its role in the institution, and impact on the future of ID. Holley (2009b) presented an overview of the practice of interdisciplinary research in higher education. She examined the numerous challenges and presented the organizational, cultural, and cognitive strategies that support interdisciplinary research. Pfirman and Martin (2010) examined similar challenges and considered their impact on faculty in their teaching and institutional expectations for research. They cited factors related to traditional expectations to acquire and maintain disciplinary expertise and the lack of incentives as barriers to pursuing interdisciplinary research.

Recent publications of two seminal texts address the lack of focus on developing interdisciplinary research. In response to faculty concerns that students learn how to do interdisciplinary research and writing, Repko (2008) has written the first comprehensive treatment of the subject for advanced undergraduate and graduate students. Repko, Newell, and Szostak (2012) compiled a series of case studies with the purpose of applying Repko's model of interdisciplinary research process.

Development of interdisciplinary research will remain an important issue as ID continues to evolve and refine its role in higher education. In reflecting on the state of the interdisciplinary field, scholars considered efforts needed for keeping ID important to teaching and learning. Klein (2013) recommended that institutions, in planning for new initiatives, examine existing structures for ways in which limitations prevent implementation of IDR and education. Newell

(2013) sees that the collective efforts to establish ID have brought the field to a point of needing a theory.

Situating Interdisciplinarity Inside the Organizational Structures of Higher Education

Issues related to how interdisciplinarity becomes situated inside higher education's organizational structures and is influenced by institutional policies are the focus of studies by Klein (2010) and Lattuca (2001). Their books are representative of a major emphasis in scholarship that focuses on establishing interdisciplinarity in higher education. They each addressed significant factors associated with the influential role of academic traditions in shaping institutional policies that contribute barriers to change. Lattuca emphasized the importance of disciplinary specializations as integral to faculty scholarship and teaching. Unfamiliarity and misunderstandings about interdisciplinary inquiry, however, affect value placed on interdisciplinary scholarship and create disconnect with disciplines. As a result, efforts to create change or introduce innovative ideas are often met with resistance. Lattuca included suggestions for creating favorable environments for interdisciplinary teaching and learning that include understanding the influence of disciplines, the value of faculty work, and recognition and rewards for those doing the work. Klein's emphasis is on models and processes for establishing interdisciplinary studies programs. Her early involvement in efforts to integrate interdisciplinarity, professional collaborations, interdisciplinary teaching, and research provide a foundation for presenting strategies, theoretical frameworks, and resources for creating interdisciplinary programs in higher education.

Role of Academic Traditions and Organizational Change

Many of the issues discussed by Lattuca (2001) and Klein (2010) are affected by the role of academic traditions, a major influence in faculty preparation and the work they perform, research activities, organizational structures based in arrangements of disciplines, and institutional policies. The integration of ID produces a ripple effect of change across the institution. Although integration has been addressed earlier by ID scholars, there is a broader context and diversity of perspectives in the literature. The complexity of issues surrounding the situating of ID inside higher education is more clearly understood through a review of related literature.

In her broad overview of challenges and opportunities, Holley (2009b) emphasized the impact of institutional behavior; in particular, its effect on faculty who hold a crucial position, the departmentally-based organizational structure in which they work, and policies that reward faculty work. Faculty will engage in interdisciplinary scholarship when it is valued but because the disciplinary cultures constrained by academic structures predominate, a cultural shift is needed that recognizes and rewards interdisciplinary work. She specifically identified tenure and promotion guidelines for interdisciplinary scholars and hiring strategies as efforts that will encourage ID scholarship. In their case study, Cornwell and Stoddard (2001) examined similar issues of traditional academic cultures and how ID teaching and scholarship changed institutional culture at St. Lawrence University. They cited two lessons for nurturing ID. The first is to provide faculty with opportunities for faculty collaboration on cross-discipline projects. The second is to balance the power between interdisciplinary programs and traditional departments. They see that the value of these ideas is in addressing the challenges of ID work related to the graduate school training of most faculty and the rewards system.

Similarly, Hart and Mars (2009) and Augsburg (2006) examined higher education's professional structures for ways that interdisciplinary scholars are challenged in their work. The study by Hart and Mars looked at faculty with joint appointments (a common solution) and Augsburg chose to study faculty teaching in an interdisciplinary program. Central to their discussions is the tenure and promotion process and its structures designed to recognize and reward faculty. While the study by Hart and Mars explored broader issues affecting ID faculty that include professional satisfaction, faculty socialization, and job responsibilities, Augsburg identified specific examples: (1) devaluing of teaching faculty by the institutions that causes a shift in commitments to promotion and tenure; (2) lack of incentives and rewards; and (3) dismissive comments from colleagues and administration regarding IDS teaching experiences. Although both studies cited differing recommendations for addressing professional structure issues, they shared a need for review of institutional policies and processes.

A review of policies and processes affecting interdisciplinary integration means examination of institutions' long-standing organizational arrangements and cultural traditions. Literature that examines change in higher education's organization and traditions is extensive, covers significant issues, and explores a number of recommendations for responding to change. Change brought about by interdisciplinary initiatives is one example of a significant issue, and discussion of its impact is woven into a number of studies. A sample of scholarship contributes to understanding ID in the larger context of change in higher education; specifically, what influences change, faculty resistance to change, and ID as a response to policy challenges.

Change is frequently initiated by efforts to improve educational value for students while keeping within the scope of available institutional resources. The Baldridge Criteria for Performance Excellence (2014) is an example of an approach used by several institutions as a

framework for institutional innovation. Furst-Bowe and Bauer (2007) credited the approach with its adaptability by a variety of institutions and its incremental-step design. When implemented, the focus is on student-centered learning supported by efficient use of resources. Among the results from applying the model is a shared vision by faculty, staff, and administration. As noted by the authors, despite examples of success, "there is a strong need to discuss, debate, and deliberate on the smallest proposed change" (p. 13).

In studies by Rich (2006) and Tagg (2012) faculty commitment to maintaining the status quo is the primary motivation in resisting change. They perceived that any modifications in the structure of their work have potential for undermining achievements and rewards accrued towards promotion and tenure as well as recognition for contributions to the institution and value for their work. Faculty interpret any erosion of their institutional role as a loss and develop an aversion to change. Further discussion of faculty resistance to change was found by Nelson and Robinson (2006), who cited institutional and faculty autonomy of teaching and learning as two primary barriers to change. For institutions planning for change, faculty resistance to adopting new teaching and learning approaches presents significant challenges to interdisciplinary engagement. While the authors presented an examination of potential barriers to change, they concluded their studies with recommendations for promoting change in higher education teaching and learning through implementation of college-wide institutes or forums (Tagg) and collaborative programs such as Scholarship of Teaching and Learning (Nelson & Robinson).

Miller (2010) observed that the complexity of social problems presents challenges to the traditional organization of higher education and institutional policies. "Universities," writes Miller, " need to pursue high-level reform if they are going to position their research and teaching to contribute meaningfully to understanding and addressing the policy challenges facing

humanity in the twenty-first century" (p. 342). He recommended shifts in financial resources towards investments in interdisciplinary programs, collaborative work, and new rewards systems in response to policy challenges.

General Education: Contextual Factors

There are numerous ways in which interdisciplinarity materializes in higher education. Evidence for the variety of settings and designs is found in works such as those by Augsburg and Henry (2009), Newell (1986), and Lattuca (2001). Generally, the most frequent settings for research studies on interdisciplinarity and interdisciplinary studies are program or departmentally-based arrangements. In some instances, degrees are awarded in interdisciplinary studies while some degrees provide options for interdisciplinary minors. A common graduation requirement in undergraduate degree programs includes one or two interdisciplinary courses or learning activities.

The organization of undergraduate degree programs incorporates a mix of coursework divided among general education requirements and courses in the major. Studies such as those from Newell (2010) and Klein (1996) examined the role of ID in development of general education and core curricula. Further review of the literature provides a context for understanding how issues related to general education's role in the institution potentially impacts integration of IDS. A study conducted for The Association of American Colleges and Universities (AAC&U) (2009) looked at recent trends in curricular change in areas of general education and assessment provides relevant context for ID integration. Forty-eight percent of AAC&U's 906 members responded to the survey. More than half of the institutions' administrators (56%) reported increased priority on general education while 89% are in stages of assessing or reviewing programs. Included on a list of practices identified for emphasis are first-

year experiences that support transition to college (78%) and first-year academic seminars (54%). When assessing programs, 51% of institutions characterized general education courses as interdisciplinary.

Hachtmann (2010) observed that although general education curricular reform is reported as a priority of institutions (AAC&U, 2009), no theory exists to explain (or navigate) the process. In developing her grounded theory, Hachtmann focused on the faculty perspective. Among her findings, faculty expressed little incentive to participate in curricular reform for lack of rewards and values. This prompted a recommendation that because faculty are "ultimately responsible for curricular change, understanding the theory of the change process could help other institutions to implement effective strategies when revising their general education programss" (p. 18).

The role of faculty was also the focus of a study by Benjamin (2007,) who concurred with Hachtmann's view that faculty feel little incentive to participate in general education. He proposed an increase in shared governance that involves strong incentives and/or prospects of sanctions that influence faculty efforts to improve teaching and learning at the institutional level. He noted that the traditions surrounding disciplinary and departmental governance discourage faculty from recommending change or restructuring. Stark (2000) and Nelson-Laird and Garver (2010) similarly found that disciplinary context matters in general education and moderates teaching effectiveness. They cited an emphasis on scholarship that examines student outcomes and the lack of faculty perspectives as factors in developing their research on the effects of differing disciplinary cultures on teaching practices.

The Role of Faculty as Discipline Specialists, Curriculum Developers, and Teachers

As noted in the review above, the introduction of interdisciplinarity into the conventional framework of undergraduate education often challenges faculty to embrace change that affects

the curriculum and the institutional cultures in which they work. Introducing interdisciplinarity into the curriculum, therefore, can be greatly challenging but not impossible. In studies by Holley (2009a, 2012) and Smith and McCann (2001), research revealed that successful innovation depends ultimately on changing the organizational culture which in turn affects the role of the faculty in curriculum development and teaching.

Holley (2009b) wrote that "no other organization reflects the same degree of specialized expertise as the academy" (p. 75). The reference here is to the influence that disciplinary specialization has over structural organizations, work responsibilities, social interactions, and cultural frameworks in higher education. Graduate school specialization provides a career-spanning framework for professional achievements and moderation of the process for evaluating the faculty's work. Joining the academic ranks brings implicit acceptance of and commitment to a complex and tradition-bound academic culture. In addition to Holley, a number of studies have examined influences related to disciplinary-specialization on faculty work as discipline specialists, curriculum developers, and teachers.

Faculty as Curriculum Developers

A significant increase in studies of faculty involvement in creating and changing higher education curriculum produced in the 1990's forms the basis for research into the twenty-first century. An examination of the debates surrounding curriculum development and, more specifically, general education, can be found in Slaughter (1997), Gaff (1995), and Stark and Lattuca (1997a). Their studies examined historical contexts of curricular change in response to social, political, and economic influences, the general education movement in the first half of the twentieth century, the parallel rise in discipline and research specialization, and the latest trends

toward concepts of core and interdisciplinary curricula. Together, these factors represent important influences affecting faculty in their work as curriculum developers.

Knowledge and experiences of the faculty in discipline-specific specializations provide the basis for design of undergraduate curriculum. The influence of the disciplines affects not only organizational arrangements but is also a governing factor in curricular work. In her research on course planning, Stark (2000) designed a study to increase knowledge about assumptions upon which teachers base course planning. Among the findings, the research confirmed that teachers vary their course planning in differing disciplines; it also pointed out the strength of disciplinary influences. In a study based in the UK, Barnett and Coate (2004) noted that the significant amount of knowledge about school curriculum is not the same in higher education even though higher education curriculum is central to education. Their findings paralleled Stark's in the influence of disciplines on academic life.

A selection of studies explored challenges frequently encountered by faculty in creating and reforming curriculum. Disconnect among faculty groups created by lack of a defined framework and definition was cited in studies by Smith (2004), Stark and Lattuca (1997a), and Fraser and Bosanquet (2006). Fundamental factors attributed to an unpopular view of curriculum work included faculty who are grounded in the traditions of their disciplines who find it difficult to discuss disciplines outside of their specializations. Instead, they continue to focus on their teaching and away from student learning. In addition, Stark and Lattuca (1997a), in recommending their framework for an academic plan, urged a shift away from a popular concept of curriculum as a set of courses taken by a student. Others viewed the syllabus, content of a discipline, course schedule, and pedagogical techniques among elements attributed to

curriculum. Considered all together, a combination of challenges contributes to the difficult work of curriculum development.

Faculty as Teachers

Faculty are responsible for not only the creation and implementation of courses but also for the teaching and learning in classrooms. Traditionally, a single disciplinary specialization has been the foundation for faculty's institutional engagement, their work, and its rewards. Research on college-level teaching and learning became more common after World War II and over several decades moved toward examination of a broad range of variables. Modern research expanded into the study of processes and products of classroom teaching. According to McKeachie (1990) progress has been made in all areas reviewed from past studies. A number of learning variables cited in his study continue to attract the concerns of researchers: class size, lecture versus discussion, student-centered discussion, peer group learning, evaluation of teaching, technology, and the impact of cognitive psychology.

While initiatives designed to improve college teaching and learning continue to increase there is a growing awareness for a number of new and different teaching pedagogies and approaches to learning. Recommendations for adopting new pedagogies often accompany curriculum change; for example, integration of interdisciplinarity and in the reform of general education. Pedagogies and approaches to learning associated with interdisciplinary teaching and learning include inquiry-based learning (IL), problem-based learning (PBL), critical thinking (CT), and integrative learning (IDL). The following representative studies present perspectives on these methods and related issues to incorporating new pedagogies.

In a study that examined the introduction of inquiry-based learning, Justice, Rice, Dale, and Hudspeth (2009) suggested that a key to successful pedagogical innovation is in recognition

that challenges and resistance to change accompany introduction of new pedagogies. They found that among the many benefits of inquiry-based learning are improved student learning and performance in other courses. It also enhances faculty members' approaches to other teaching responsibilities and contributes to attracting and retaining students.

Major and Palmer (2006) conducted a study of a problem-based learning (PBL) initiative to transform faculty pedagogical knowledge. They made the point that P-12 research and pedagogical knowledge is not always applicable or transferable to higher education teaching and learning. Their findings suggested that faculty who develop their pedagogical content knowledge and describe their own development through a sequence of who/what/where/when questions transform their pedagogical knowledge. Their experiences and reflections form the basis for applications of PBL in classroom teaching and student learning.

According to Halx and Reybold (2005), critical thinking (CT) as a teaching pedagogy and a type of student learning is not well understood from the faculty perspective. While critical thinking (especially as an outcome of interdisciplinary learning) is increasingly adopted as a learning outcome and faculty support CT as part of teaching, they are rarely taught how to define it. Among the study's findings are that faculty perceive interdisciplinary learning as necessary for CT.

In their study of integrative education, Palmer and Zajonc (2010) observed that over a dozen years, integrative learning (IDL) and teaching has increased but with little evidence of understanding for the meanings of IDL, its goals, and methods. They credited a focus on understanding the world's complexity for the growth of interdisciplinary studies but cited teaching routines based on disciplines and the way things have always been done for lack of interest in IDL.

Numerous examples of studies have been written that examine teaching from the perspective of traditional preparation for college teaching based in discipline specialization through research activities, graduate school training, and adopting approaches observed through personal learning experiences. But an emerging area of research gaining attention examines what faculty do in their teaching, their planning strategies, their beliefs and assumptions about teaching, and how they think about teaching. Research that examined these perspectives includes studies by McAlpine, Weston, and Fairbank (2006), and Wingate (2007).

McAlpine et al (2006) examined two ways college instructors describe their teaching – the first, thinking about a course they are teaching, and second, thinking about specific classes in that course. The results of their study in which they asked each participant the same set of questions before teaching and again after teaching demonstrate that different kinds of thinking underlie and influence teaching actions. Their goal was to develop a language to help researchers examine the ways in which teacher thinking varies. Wingate (2007) discussed college teacher attitudes toward student learning, student learning needs, and definitions and understandings of university learning. As institution policies focus on student retention and student learning outcomes, Wingate recommended changing concepts about teaching through professional development that provides incentives for teacher commitment to student learning.

Professional Development for College Faculty

Professional development for college faculty has become important in addressing issues of teaching and learning. Little research has been done on professional development in higher education, but studies by Blanton and Stylianou (2009) and Stes, Coertjens, and Van Petegem (2010) examined two approaches: a community of practice framework and the effects of professional development on daily teaching practice. Blanton and Stylianou noted that few

empirical studies exist to guide the discipline-specific professional development of faculty in higher education. Using a community of practice lens to examine faculty engagement in professional development the researchers identified issues unique to discipline-specific professional development. For example, without a shared language of practice, veteran teachers found it difficult to enculturate new colleagues.

Stes et al (2010) examined the impact of professional development on daily teaching practices. They investigated whether there were differences in teaching approaches between teachers who participated in instructional development and those who did not. They concluded that there is some effect on teaching approach but that in the short term, while participants may demonstrate willingness to try a new approach, they had difficulty in precisely implementing the student-centered approach. Results of both studies indicated need for further research of professional development in higher education and its impact on teaching.

Summary

In summary, the extensive body of current research that examines issues of interdisciplinary integration that impact the work of faculty as curriculum developers and teachers revealed the following themes:

1. The historical context and development of interdisciplinarity in higher education.
2. Situating interdisciplinarity inside higher education's traditional framework of organization and policies; in particular, faculty participation and their contributions.
3. The role of faculty as discipline specialists, curriculum developers, and teachers (specifically, in undergraduate studies).

The historical context and development of interdisciplinarity in higher education developed along two trajectories. The first centered on defining interdisciplinarity. The concepts

and ideas of interdisciplinary studies that date back to the 1960s development of non-traditional areas of study became the foundation for an upsurge of scholarship devoted to refining a diversity of definitions and interpretations of interdisciplinarity. By the end of the 1970s, the results demonstrated a greater acceptance by higher education's institutions, increased professionalization of interdisciplinary research and teaching, publications of seminal texts, and the establishment of professional organizations.

The second trajectory is evidenced in the contributions of scholars whose work aided the emergence of interdisciplinarity in academia that fostered recognition for the value of interdisciplinary curriculum development, creation of interdisciplinary research, and models for teaching and learning. While scholars recognize the challenges associated with interdisciplinary work, they continue their efforts in the development of resources that promote interdisciplinarity, building support for teaching and learning, exploring its impact on curriculum design, and most recently, their work to establish interdisciplinary research and its evolving role in higher education.

In reference to the second theme – namely, situating interdisciplinarity inside higher education's traditional framework of organization and policies – two key trajectories are present in the literature here as well. They both involve faculty participation and their contributions – especially along the lines of, first, the academy's historic traditions; and second, the influence of disciplinary specializations. The first trajectory which focused on understanding the contexts in which interdisciplinarity occurs, led to a number of studies that examine the influence of academic traditions on faculty hiring practices, the contributions of faculty, departmentally-based organizational arrangements, and institutional policies. These studies, in turn, gave rise to a second main trajectory of literature which focuses on the influence of disciplinary specialization,

and revealed the extent to which it is integral to higher education's structures and influences the faculty's work. This theme in the literature, therefore, suggests that change and innovation introduced through interdisciplinarity integration produces a number of significant challenges; these include crossing disciplinary boundaries, overcoming misunderstandings about interdisciplinarity, faculty resistance to change, and threats to the promotion and tenure process.

The third theme - the role of faculty as discipline specialists, curriculum developers, and teachers (specifically, in undergraduate studies) - has developed along three main tracks: (1) the influences of academic culture; (2) curriculum development; and (3) teaching pedagogy. Through their professional preparations, higher education faculty not only become experts in specialized fields of study but they also implicitly accept and commit to a complex and tradition-bound academic culture. As a result, disciplinary specializations and academic traditions dominate the work of faculty and their academic responsibilities, including curriculum development and teaching. Overall, faculty expressed diverse views on what constitutes or defines curriculum. This may include a set of courses taken by a student, the course syllabus, disciplinary content, a course schedule, and teaching methods. In the process of planning for interdisciplinary integration, this may present a particularly salient challenge in curriculum development.

As teachers, higher education faculty presume autonomy in their classrooms for what is taught and how it is taught. The impact of interdisciplinary integration therefore also directly affects classroom autonomy as well as traditional faculty roles and their responsibilities. In addressing teaching-related concerns, the literature suggests that organizational cultures may need to change and recommends that faculty investigate new pedagogies and approaches for ID teaching. A recent body of scholarship has emerged that examines faculty perspectives on

teaching and attitudes about teaching. Though this body of research focuses on faculty perspectives, it remains limited in its breadth, particularly concerning what we know about the role and impact of faculty participation in the development and implementation of interdisciplinarity curricula.

Interestingly, this absence of discussion on faculty participation and roles in the literature is present at the same time when faculty development in higher education is a growing trend, one geared to assist faculty in developing new pedagogies and to guide them in examining their teaching. This study, then, surfaced within a context of a particular professional development meant to train higher education professors in the area of interdisciplinary teaching. It sought to gather and analyze information that would add to the body of research that currently exists, while also providing information on how faculty, as disciplinary specialists, navigate interdisciplinary curriculum development through creating and teaching an interdisciplinary course.

CHAPTER 3

RESEARCH METHODS

Introduction

This study examined the work of faculty as curriculum developers and teachers from the faculty's perspectives; specifically, as disciplinary specialists who develop and teach interdisciplinary courses in the undergraduate general education curriculum.

A Phenomenological Viewpoint

The idea for this study grew out of my own experiences developing and teaching interdisciplinary courses that included sole-responsibility for a course and a variety of collaborative teaching arrangements. From a personal perspective, these experiences inspired learning and professional growth as an educator. They also provided the occasion to observe colleagues challenged by constructing an interdisciplinary course and making connections between different disciplines. Trying to understand the differences in our experiences proved difficult and initial research efforts did not provide immediate help. But my interests continued regarding issues surrounding the development and teaching of interdisciplinary courses.

Eventually, opportunities to develop projects on interdisciplinary topics led to the development of this study. A comprehensive review of literature revealed a number of issues which included two familiar themes – challenges of interdisciplinary work and disconnect between disciplines. Reading the literature offered few insights into how faculty navigate interdisciplinarity within the traditional context of their roles as curriculum developers and teachers. From the phenomenological viewpoint, the best way

to understand how interdisciplinary work gets done is to listen to faculty who undertake interdisciplinary integration. Creswell (2009) identifies this as "a strategy of inquiry in which the research identifies the essence of human experiences about a phenomenon as described by participants" (p. 13).

A course project in program evaluation provided an opportunity to pilot a study of faculty working to create, prepare and teach an undergraduate interdisciplinary course. I implemented a qualitative approach which included participant observations of faculty involved in their professional development course as well as interviews of the faculty participants. Their answers to my questions provided examples of deep understanding for the significance of their training, their thinking about how they planned for interdisciplinary teaching, and the challenges of the work. From this initial project came the idea to design a study that would explore more in-depth how faculty navigate interdisciplinarity as described in their own words. While the experiences of each faculty member are unique, they are connected to one another through the phenomenon of interdisciplinary work. Based on my earlier experiences and connections made through the experience of interdisciplinary work, my background knowledge and understandings frame a particular viewpoint, one from which to design a study of faculty as interdisciplinary curriculum developers and teachers. A phenomenological approach requires that I keep in mind that as the study unfolds "the researcher sets aside or brackets her own experiences in order to understand those of the participants in the study" (Nieswiadomy, 1993 in Creswell, p. 13).

Research Questions

With both the literature and the study's phenomenological framework in mind then, this study will address the following key research questions:

1. How do faculty perceive their role integrating interdisciplinarity into Marshall University's undergraduate curriculum?
2. How have faculty worked through a new assignment to teach an interdisciplinary course - beginning with completion of the *FYS Institute* (professional development course), through teaching the course, and continued teaching in their disciplines?
3. How have faculty perceptions of interdisciplinarity at Marshall University been changed by involvement in activities related to FYS?
4. What has changed in the faculty's discipline-specific course preparation and teaching after their interdisciplinary and FYS experiences?

Research Design

This study used a mixed methods design that incorporates a phenomenological perspective and used an explanatory sequential strategy defined as "one in which the collection and analysis of quantitative data is followed by the collection and analysis of qualitative data" (Hesse-Biber, 2010, p. 105). The sequential design included two phases of data collection: the first involving a self-administered survey; the second involving interviews of participants. Using a mixed methods explanatory sequential strategy provides a framework for an interpretive approach in which neither form of data collection is prioritized but, according to Hesse-Biber, creates an iterative process

focused on the research questions that can lead to additional questions. A matrix (Appendix J) was developed to test validity of the survey and interview questions to measure what was intended in the research questions.

In this study, the population of FYS faculty represented a group of Marshall University faculty who have diverse disciplinary specialties, have varying years of teaching experience, and approach interdisciplinary work from different perspectives. They are, however, responsible for teaching the same course (FYS 100) and demonstrate student learning for a selected group of Marshall University's student learning outcomes (General Education, 2013). Using a mix of qualitative and quantitative data produced results that can be compared and contrasted across data sets as well as aligned with the literature to deepen understandings and incorporate the individual life experiences of the faculty in their work to integrate interdisciplinarity. Additional questions were expected to surface as the study evolved (within an emergent design as discussed below) as well as other questions that may lead to further research.

Phase One

The self-administered survey asked respondents for demographic information and their responses to a list of statements using a five-point Likert scale. A few open-ended questions allowed respondents to answer in their own words and asked for information that assisted in creating interview questions.

From a phenomenological perspective, the experiences of faculty teaching interdisciplinary studies are not widely examined in the literature. Therefore, the design of the study and choice of research strategies provided a framework for collecting, analyzing, and reporting on the multiple perspectives of faculty who develop and teach

the same interdisciplinary course (in this case, FYS 100). Because higher education faculty are primarily responsible for developing and teaching activities, their effort is singularly important to the institutions in which they work. Their points of view and experiences could be valuable to others in developing and teaching interdisciplinary courses and to institutional efforts to integrate interdisciplinary curriculum.

Phase Two

For Phase Two of the study, a nonrandom purposive approach to sampling was used in identifying interviewees. According to Hesse-Biber (2010), this approach works when the research problem calls for selecting cases that represent either sameness or diversity regarding a given problem. The selection of faculty for *Phase Two* of data collection reflected questionnaire responses from those who indicated experience teaching FYS and interest in being interviewed for the study. In addition, the selection of interviewees was prioritized based on data gathered in *Phase One* and reaching point of saturation in collecting data.

Population

The population for this study is Marshall University (MU) full-time faculty who were certified to teach the First-Year Seminar between Fall semester 2010 and Spring semester 2014. Faculty certified to teach FYS are identified by College Deans and Departmental Chairs, submit an *Intent to Teach* form, and complete the required professional development, *FYS Institute* (MU Center for Teaching and Learning, 2014). A directory of FYS faculty found on the Marshall University Center for Teaching & Learning website (MU Center for Teaching and Learning, 2014) listed 73 certified FYS faculty members.

An Emergent Design for Data Collection and Analysis

The design for this study's data collection and analysis followed an emergent approach defined by Campbell and Lassiter (2014) as "a view of research that necessitates both creative and practical responses to changes in research design as projects evolve" (p. 32). Although the sequential design for data collection suggests a two-stage linear process, it more closely resembles a circular process as in Morgan's (2008) description of emergent design in qualitative research. As data are collected and analyzed ongoing adjustments can be made to research procedures and questions. For example, in this study, the responses to the *FYS Faculty Survey* (Appendix A) gave direction in developing interview questions that were more focused in addressing the experiences of Marshall's FYS faculty. In addition, the Interview Questions (see Appendix B) suggested a direction for interviewing but had the potential for needing revisions as data collection and analysis progressed. Therefore, data collection and analysis were intertwined and as the study evolved, required regularly returning to review previous information and revise themes.

An important element in qualitative data collection is achieving saturation. In this study, a plan for 10 to 15 interviews suggested a reasonable number for reaching the point of saturation though that number had potential to increase if more information was needed to complete this study. Several factors affected these interview numbers: the number of FYS faculty who volunteered to be interviewed was small and the demographic make-up of the interviewees tended toward veteran faculty. While the ability to complete interviews without interruption and potential for faculty to choose to leave the study were possible issues affecting interview numbers, neither was an

influencing factor. Responding to these situations as well as other potential unforeseen circumstances required the flexibility of an emergent approach in gaining participation from FYS faculty. In response to the small number of responses expressing interest in being interviewed, additional attempts were made to contact faculty from across the university's colleges. Follow-up email messages (Appendix I) that invited faculty to be interviewed produced enough respondents to produce the desired saturation.

Additionally, as this study unfolded it was important that openness to new information and insights as well as unanticipated directions be maintained. Because the goal was to gather the perspectives of the faculty, following their lead in examining topics demonstrates the value and importance of their contributions to the study. This meant gaining their trust which required sensitivity to individual perspectives and positions. An emergent design provided flexibility in responding to these types of complexities. Although there were additional ways in which emergent design was applied in this study, its significance is in furthering the study's purposes to contribute new information, insights, and deeper understandings for the work of faculty as interdisciplinary curriculum developers and teachers.

Instrument Development

The survey instrument, a 36-item researcher-developed questionnaire (Appendix A) was developed after an extensive literature review indicated no survey instrument existed. Design of the self-reporting questionnaire was based on Fink's (2003) descriptive cross-sectional design and constructed of six sections: Course Development, Teaching, and Outcomes – followed by Background Information, Demographic Information and two Narrative questions. Sections A through C asked respondents to use a five-point scale

to evaluate agreement to statements related to developing, teaching, and reflecting upon their FYS course. Multiple-choice questions in Sections D and E asked for Background and Demographic information. The two open-ended questions near the questionnaire's end provided faculty opportunity to expand their answers that may suggest topics for developing interview questions. The survey concluded by asking respondents to indicate their interest in being interviewed for the study and to provide an email address at which they can be contacted. The purposes of the survey were to: (1) collect background and demographic information about the FYS faculty; (2) gather information that is appropriate to short answers; (3) find out the major concerns of the faculty and thus prompt interview questions; and (4) gather information from all FYS faculty including participants who may not want to be interviewed.

Data Collection

The self-administered questionnaire was formatted and administered using *Survey Monkey* software and sent to 73 FYS faculty through the MU email system. Certified FYS faculty and their email addresses were available on the Center for Teaching and Learning (CTL) website and were verified by the CTL Director. An electronic record of responses was kept and two follow-up emails were sent at two week intervals. Following IRB approval of this study, permission for use of the CTL listserv was obtained from the CTL Director.

In *Phase Two* of data collection, qualitative data was collected in face-to-face interviews, telephone interviews, and email responses. A sample of FYS faculty and stakeholders was interviewed face-to-face using an unstructured and open-ended interviewing format. Qualitative questions were developed based on review of the

literature (see Appendix B for a list of questions). Each interview took place in a location convenient for the respondent and favorable for audio recording (for example, in the respondent's office). Interviews lasted 30 to 60 minutes and follow-up requests for additional information included phoning or email. Participants signed a Consent to be Interviewed form and an Agreement to be Recorded prior to beginning the interview. Forms were kept in a secure and locked cabinet along with research notes and interview transcripts.

Between 10 and 15 interviews were planned for this study and although saturation of data may have required more or less as information was obtained and themes emerged, 12 interviews were determined to have achieved common themes. The in-person interviews were the primary method for collecting data and telephone interviews and email responses were used as follow-up methods. Each in-person interview was recorded, logged, and transcribed. Digital forms of scanned notes and email archives were kept in computer files. Interview logs and transcripts were stored in a secure and locked cabinet.

The purpose of faculty interviews was to: (1) gather thick and descriptive data that broadens survey responses; (2) recognize and listen to individual faculty voices; (3) provide opportunities for faculty to share and describe their depth of experiences; (4) consider faculty experiences and descriptions of their FYS teaching pedagogies, styles, and methods; and (5) engage an emergent design for data collection and analysis.

A few stakeholders were interviewed for their perspectives and additional background on the FYS program. Primarily, the Director of MU's Center for Teaching and Learning (CTL) and the FYS Coordinator were interviewed. The current CTL Director is responsible for developing and teaching the *FYS Institute* training and

continues to oversee the administration of FYS, which began with the initial proposal for creating the interdisciplinary course. The FYS Coordinator position was a recent addition to the administrative structure in a supportive role to MU's faculty and administration. The interview with the CTL Director was integral to the pilot study as were the perspectives of the FYS Coordinator that were reflected within the context of her responses as a faculty member.

Although additional institutional administrators were responsible for facilitating and interacting with the FYS program, they were not included in the schedule of interviews because they do not directly develop or teach an FYS course (e.g. Provost and Vice-President of Academic Affairs, Associate Provost, Deans, and Department Chairs). Additional data was collected from documents found on Marshall University's (MU) website and included information from the CTL, FYS Hub (online resources), MU course syllabi, and MU Academic Affairs.

Data Analysis

Although data collection for this study occurred in a sequential strategy, the goal of data analysis was to merge and integrate data as it related to the research questions and informed larger issues found in the literature. An interpretive perspective was used in which quantitative research supports qualitative methodology "as a means of both understanding the broader objective context and contextualizing people's experiences" (Hesse-Biber, 2010, p. 105). Data collected in the self-reporting surveys provided an overview of the FYS faculty and framed the qualitative phase of the study. Face-to-face interviews of a diverse and representative sample of faculty provided multiple perspectives about their experiences developing and teaching the FYS course. An

integrated approach to data analysis led to deeper understandings of how faculty navigated the process and their perceptions about the context in which they worked.

As noted above, demographic data collected in *Phase One* of the research strategy included information about FYS faculty, such as their backgrounds, their professional preparation, and teaching experiences. During the analysis, faculty responses related to disciplinary specialization, for example, provided connections among FYS faculty as well as into the wider context of the literature. In addition, responses prompted qualitative questions for interviews. Similar examples of data integration occurred across other data collected in the faculty questionnaires.

On another level, data collected in *Phase Two* of the research strategy also revealed themes not discussed in literature, unique themes or ideas that were particular to the context of MU's interdisciplinary curriculum. Elaborating the broader contexts and expansion of perspectives led to multiple readings of both quantitative and qualitative data, researcher note-taking, and identification of both particular and general themes.

An interpretive approach to analysis framed the integration of data collection strategies that required multiple readings of the data, alternating between quantitative and qualitative, careful note-taking and memoing, coding, and identification of themes. Each interview was transcribed and coded for emergent themes. Subsequent data was added following each interview until a saturation point produced a focused set of themes. Through convergence of data, the results produced deeper understandings of interdisciplinary work done by faculty, brought attention to an overlooked area of scholarship, and inspired more questions.

CHAPTER 4

PRESENTATION AND ANALYSIS OF FINDINGS

Introduction

The purpose of this mixed methods study was to examine perceptions of Marshall University's FYS faculty regarding the impact that integrating interdisciplinarity into the undergraduate curriculum has had on their work in curriculum development and teaching; specifically, as it relates to the navigation away from their discipline specializations, and through completion of professional development, creation of new courses (First-Year Seminar), and finally, teaching FYS. Findings in this chapter are organized around the following sections: (a) data collection and method of analysis; (b) characteristics of the respondents, (c) major findings for each of four themes that emerged during collection and analysis of data, (d) a summary of the findings, and (e) ancillary findings.

Data Collection and Method of Analysis

Phase One

Data collection and analysis for this study was completed in two phases. In Phase One, 27 out of a population of 73 FYS-certified faculty responded to the electronic survey *FYS Faculty Survey* (Appendix A). The 36-item survey was organized into six sections: FYS Course Development, Teaching FYS, Outcomes from Development and Teaching of FYS, Background Information, Demographic Information, and Narrative Questions. Responses were based on a 5-point Likert scale (Strongly Disagree, Disagree, Neither Agree nor Disagree, Agree and Strongly Agree) for items one through 26,

multiple choice responses were provided in items 27 through 34 and items 35 and 36 asked for narrative responses. At the conclusion of the survey, respondents were asked to indicate their interest in being interviewed for the study.

Descriptive statistical analysis of survey data was performed using SPSS 22 software. Survey items were grouped together under four main themes: Preparing to Teach FYS, Course Planning and Development, Teaching FYS, and Reflections and Outcomes. Initially, analysis of survey items was based on the mean and standard deviation as measures of central tendency. The results of calculating means across survey items produced a range of scores generally centered around 2.5 and 3.5 and the standard deviations clustered around the mean. When careful examination and efforts to present means and standard deviation did not result in a meaningful and logical presentation of results, further descriptive statistical analysis was completed based on frequency and mode. Therefore, reporting frequency and mode more accurately represents the views reflected in participants' survey responses. In addition, reporting the mode allowed for incorporation of themes in interview responses and, more importantly, provided greater synthesis between survey and interview data.

Phase Two

In Phase Two of data collection, interviews were conducted with a sample of 12 FYS faculty. Survey responses of two FYS faculty members expressed interest in being interviewed. In the design of the study, between 10 and 15 interviews were projected for potential data saturation. Additional faculty were contacted based on the list of FYS faculty provided by Marshall University's Center for Teaching and Learning, which also included information regarding the faculty's disciplinary specialties and college

affiliations. In an effort to insure a broad representation of faculty across disciplines and colleges, 18 faculty were contacted by email (Appendix F) and interviews for 10 respondents were arranged. Table 1 shows the frequency and distribution of FYS faculty study participants by college and academic unit.

Table 1- FYS Faculty Participants by College and Academic Unit

Colleges and Academic Units	Survey Responses n = 27	Interviews n = 12
College of Arts and Media	7	4
College of Business	0	0
College of Education and Professional Development	4	2
College of Health Professions	2	1
College of Information Technology and Engineering	1	0
College of Liberal Arts	7	3
College of Science	4	1
Regents BA Program	1	1
School of Pharmacy	1	0
University College	0	0

Headings for sections of the *FYS Faculty Survey* served as a framework for developing interview questions: FYS Course Development, Teaching FYS, Outcomes from Development and Teaching FYS and Background and Context. Each interview was recorded and then transcribed. An indexing strategy was used to analyze question responses for unifying themes and to examine congruency and frequency of faculty responses.

Characteristics of the Respondents

The population for this mixed methods study included Marshall University faculty who had taught the semester-long interdisciplinary *First-Year Seminar* at least once between the Fall 2010 and Spring 2014 semesters. Data responses from a population of

27 FYS faculty who completed the *FYS Faculty Survey* (Appendix A) and the answers to interview questions (Appendix B) from a sample of 12 FYS faculty have been analyzed and provide the basis for findings presented here.

Table Two presents demographic information for the population of participants (n=27) that describes their (a) years of experience teaching in higher education through AY 2013-2014, (b) their academic rank in AY 2013-2014, (c) the college in which they primarily teach, and (d) the year they completed the *FYS Institute.*

Nine faculty (33.3%) reported between six and ten years of higher education teaching experience. The remaining two thirds of the respondents are distributed across the remaining categories. Academic ranks parallel years of experience in that faculty at Associate and Full professor account for 68% of respondents and lower ranks are represented by the remaining 32% of the group.

A cross section of colleges in which the faculty primarily teach are represented with 55.5% of combined FYS faculty from the College of Arts and Media and the College of Liberal Arts. The College of Education and Professional Development and the College of Science each account for 14.8%.

Faculty who teach FYS are required to complete the *FYS Institute*, a professional development course taught by a staff member from Marshall University's Center for Teaching and Learning (CTL), prior to teaching the course. Thirteen of the respondents (50.0%) completed the *Institute* in 2010, two (7.7%) in 2011, seven (26.9%) in 2012, and in 2013, four faculty (15.4%) fulfilled requirements of the *FYS Institute.*

Table 2 - Demographics for Respondents to FYS Faculty Survey (n=27)

Teaching Experience Years of Higher Education	*Frequency*	*Percent*
1 to 5 Years	1	3.7
6 to 10 Years	9	33.3
11 to 15 Years	5	18.5
16 to 20 Years	3	11.1
21 to 25 Years	5	18.5
More than 25 Years	4	14.8

Academic Rank at the End of AY 2013-14 (n=25)	*Frequency*	*Percent*
Adjunct Faculty	1	4.0
Instructor	3	12.0
Assistant Professor	4	16.0
Associate Professor	12	48.0
Full Professor	5	20.0

College or Academic Unit in Which FYS Faculty Primarily Teach (n=27)	*Frequency*	*Percent*
College of Arts and Media	7	29.6
College of Education and Professional Development	4	14.8
College of Health Professions	2	7.4
College of Information Technology and Engineering	1	3.7
College of Liberal Arts	7	25.9
College of Science	4	14.8
Regents BA Program	1	3.7

Semester of FYS Institute Completion (n=26)	*Frequency*	*Percent*
Spring 2010	13	50.0
Spring 2011	2	7.7
Spring 2012	7	26.9
Spring 2013	4	15.4

Major Findings

Presentation of the study's major findings are organized around four themes: (1) Preparation for teaching FYS (including the *FYS Institute)*; (2) Planning and development of an FYS course; (3) Teaching an FYS course; and (4) Reflections and Outcomes from Teaching an FYS Course. A summary of the major findings followed by ancillary findings concludes the chapter.

Preparation for Teaching FYS

When developing a new course like the *First-Year Seminar*, faculty often engage in preparation activities such as researching resources, creating bibliographies, writing course objectives, outlining the course calendar, and designing student assignments. For faculty with higher education teaching experience focused in one discipline, preparation for teaching an interdisciplinary course suggests a need to consult resources in support of a new teaching assignment. When asked to describe the types of interdisciplinary resources they used in preparing their courses, however, five out of twelve faculty (41.7%) who were interviewed cited examples of books and sources identified for students to use in the course and three included research for multi-media sources in support of class activities (e.g., short videos, television clips, and National Public Radio (NPR) programming). Two faculty members (16.7%) consulted research literature from other disciplines and four (33.3%) conferred with university colleagues from other disciplines. Two faculty cited accessing the FYS Hub, a website developed to provide a central location for FYS-related resources that includes instructor-generated course materials meant for sharing with colleagues.

Faculty were asked to define and describe the interdisciplinary approach used in their courses. The following choices of interdisciplinary approaches were suggested: crossdisciplinary, multidisciplinary, transdisciplinary, and interdisciplinary. Two faculty (16.7%) specifically identified multidisciplinary and three (25.0%) used an interdisciplinary approach. Two faculty (16.7%) combined multidisciplinary and crossdisciplinary approaches while another faculty (8.3%) member combined multidisciplinary and transdisciplinary. Three faculty (25.0%) provided definitions for multidisciplinary as pulling from multiple disciplines and one added that there is not a lot of overlap or integration. For interdisciplinary, the approach was characterized as inviting others to teach, allows for more blending than multidisciplinary, and doing a project that required multiple disciplines. While one faculty did not define crossdisciplinary, another did not know its meaning, and a third defined it as crossing two things. Transdisciplinary was defined by one instructor as co-teaching while two did not provide definitions for the term.

As demonstrated in the above responses to an interview question asking faculty to define and describe their interdisciplinary approach, three faculty chose interdisciplinary. But results from the FYS Faculty Survey showed that interdisciplinary was chosen by 13 respondents (48.1%) when they were asked to choose the best interdisciplinary description for their FYS course. The remaining 14 responses were spread across the remaining three choices: eight faculty (29.6%) chose multidisciplinary, five (18.5%) indicated transdisciplinary, and one (3.7%) chose crossdisciplinary.

Nine faculty (75.0%, n=12) had backgrounds in interdisciplinarity prior to enrolling in the *FYS Institute.* Four (33.3%) described their primary disciplines as

interdisciplinary and four (33.3%) cited work experience outside of academia as interdisciplinary-related. Preparation for and teaching in public schools provided three faculty (25.0%) with interdisciplinary experiences valuable in their higher education course preparation and teaching. Two (16.7%) faculty members gained experience for teaching FYS through their work in higher education Honors programs. One (8.3%) faculty member cited her strong undergraduate liberal arts experiences as significant in preparing and teaching FYS. C. White (Interview, October 29, 2014), who stated that he had a background in interdisciplinarity, reflected on his academic preparation and experiences:

> I have an interdisciplinary background. My undergraduate degree is in Spanish education and I taught Spanish for a while in an alternative high school. I have taken students from Marshall University and California to Mexico, El Salvador, and Nicaragua a number of times. I feel experiential learning is important and I try to assimilate that into the class as much as possible. In my master's degree on Latin American studies, it was interdisciplinary and so I took political science, anthropology, economics, history, and various languages along with as much history as possible and the PhD was exclusively on history but all the while interdisciplinary.

B. Tarter (Interview, December 3, 2014), whose discipline is persuasion, was among the group of faculty who described their disciplines as interdisciplinary:

> I think my specific discipline has always been interdisciplinary and I have to say we steal from English, psychology, sociology, and they have stolen from us. I have always used multiple disciplines.

Previous teaching experiences in public education provided backgrounds for faculty like M. Allenger (Interview, December 19, 2014) who described her interdisciplinary background:

> I don't know that I had any particular training about how to bring a lot of different disciplines together except that when I started teaching school in 1992, it was all whole language. We did not consider not teaching science in reading, not

> teaching math with social studies - it was so interdisciplinary – so I never think anything different now.

Survey response data related to preparing to teach an FYS course is displayed in Table 3. As found in the interview responses, when faculty consulted resources (Mo=2) they focused on materials for student use in the course and survey results correlate in that they did not consult resources to specifically support their teaching. As shown in the table below, they indicated that their own experiences were not the primary support for their ID teaching (Mo=2) while they agreed that their graduate studies prepared them to teach an interdisciplinary course (Mo=4).

Table 3 - Preparing to Teach a FYS Course (n=27)

	Mode	Mean	Std. Dev.
I consult resources that specifically support my interdisciplinary teaching.	2	1.78	.847
My own experiences are the primary support for my interdisciplinary teaching.	2	2.70	1.03
I had to learn how to think like an interdisciplinarian to teach FYS.	5	3.70	1.13
My graduate studies prepared me to teach an interdisciplinary course.	4	3.26	1.45

Planning and Development of a FYS Course

Each faculty member enrolled in the professional development course *FYS Institute* designed a First-Year Seminar and course syllabus. As FYS evolved since its inception in 2010, course materials and requirements changed, but a framework of student learning outcomes continued to provide an organizational component around

which faculty planned their courses. While various elements changed, faculty were expected from the beginning to make their own choices of learning activities, textbooks, and other materials to support interdisciplinary teaching and learning in their classrooms. Faculty were asked in the interviews about the types of activities they included in their courses; their responses were diverse and demonstrated a wide variety of choices. Table 4 lists the types of activities identified by faculty, the number of faculty who include the activity in their course, and the percentage of respondents. The most frequently cited activities included ten faculty (83.3%, n=12) who assign readings in the FYS custom-designed textbook, *Critical Thinking in College* (Nosich, 2011) nine faculty (75.0%) who include a project, and supplemental readings were included by eight faculty (66.6%). The remainder of the list demonstrates the diversity of choices made by faculty in the design of First-Year Seminar courses.

Table 4 - Course Activities Developed in Support of Interdisciplinary Teaching and Learning (n=12)

Type of Activity	Number of Faculty Who Include Activity in Course	Percent
Assign readings in Custom-design Textbook	10	83.3
Project	9	75.0
Supplemental Readings	8	66.6
Out of Class Writing (ex. Book Reviews, Book Summaries)	6	50.0
Assignments That Challenge Student Assumptions	5	41.6
Information Search and Analyze for Relevance	5	41.6
Low Stakes Writing	4	33.3
Interviewing	4	33.3
Use Multi-Media (ex. Television, Movie Clips, Music, TED Talks, NPR News Programs)	4	33.3
Research	4	33.3
Different Activities for Honors Section	3	25.0
Role-Playing	3	25.0
Group Activity	3	25.0
Critical Thinking	3	25.0
Technology (ex. Internet, Blackboard)	2	16.6
Service Learning	2	16.6
FYS Hub (faculty share activities)	1	08.3

Readings, whether in the custom-designed textbook or from supplemental texts, comprised the majority of assignments in FYS courses. For many instructors, their choices were based on the text's interdisciplinary perspective or relationship to the course theme, how well the topics provided a basis for planning their courses, and as a framework for student assignments. Assignments included a mix of semester-long projects and a variety of shorter in-class and out-of-class activities. Projects were considered an important means for creating interdisciplinary learning in FYS courses as well as providing a structure for the course, an outline for integration of disciplines, engaged different types of learning, and addressed student learning outcomes. S. Frank (Personal Interview, October 27, 2014), whose course theme was civic engagement,

adopted the texts of Dr. Seuss and created assignments around the concept of comparing and contrasting social issues from the time of the author to the present day. During the semester, students examined his texts for themes of not only civic engagement, but also environmental issues, prejudice, and bigotry. Her overall goal was to integrate idea, language, and art and as a final project, students created books in the style of Seuss.

A. Goodman (Interview, December 3, 2014), J. St. Germain (Interview, November 14, 2014), and Allenger (2014) assigned the book *My Life as an Experiment* by A.J. Jacobs in their FYS courses. Although they chose the same text, their course designs and student assignments were different. Each instructor asked students to design experiments based on ideas from reading Jacobs' book. Goodman (2014) described how she integrated a semester-long project into her course:

> After we read the book, I tell the students they are going to do experiments. I break everything down into steps and they have seven assignments and each of them is a step in solving this problem of the experiment. I make them do the experiment using the scientific method. They each have to write a research question, they write a hypothesis, they identify their variables, and then they have to present it. The course is designed around the project.

In-class activities tended to be shorter and designed to be completed within one or two class meetings. These included testing student preparation of readings, small and large group discussions, and often as activities meant as interim steps that provided an organizational structure for students as they completed longer or final course projects. J. Saken (Interview, November 11, 2014), whose course theme was design, created in-class activities that helped students explore different aspects of design. His goal was to give students assignments that needed reworking multiple times because he felt that "they [students] don't wrestle with problems, try things, see that they don't work the first time and then they give up all too quickly." So he used a mix of activities and long-term

projects to develop FYS learning outcomes of problem-solving and critical thinking skills. In an assignment designed to teach typology, each student was given a card showing a drawing of a building and together with a box of blocks, were instructed to build what was depicted on the card. After all models were built, the students examined each other's buildings in an attempt to identify the types of building and their purposes. Not only did students explore aspects of typology, the experience also introduced them to an important design concept - form follows function.

Writing assignments were commonly used in FYS courses and included a range of low- and high-stakes requirements. St. Germain's (2014) approach to writing began with a more casual and low-stakes perspective that scaffolded through the semester toward high-stakes expectations. In an early course assignment intended to easily engage and get students to respond to each other, she designed a blog called the *Coma Song*. Students were instructed to imagine that they were laying in a coma. Then to make absolutely sure it was safe for someone in charge to flip the switch and they wanted to check by playing a song in your ears on a headset, "what is the song that could get you going?" Once students had posted their own entries, they were expected to respond to each other's coma songs. In one entry, a student wrote "if you can't raise me with *Bohemian Rhapsody*, then I am done."

Writing assignments were central to Tarter (2014), who designed her course around a CSI-type theme (CSI stands for Crime Scene Investigation, a popular television series). Similar to other FYS instructors, she built her course around a semester-long project that she described:

> The major project that the students do is that they actually write legal briefs for major crimes. I pick legal cases that are fairly controversial and that could be

> won either way. We are looking at Sam Shepherd, who was a doctor in Cleveland, and other cases that are older. The students are required to find a variety of things from news releases, media that occurred at the time, to books they might find, and they might look up the defendant's blog. There are all kinds of resources out there. The whole point of FYS is also critical thinking.

For their presentations, students developed arguments for both the prosecution and defense, presented a synopsis of the science, developed a list of witnesses, and wrote their arguments based on supporting research while also being able to anticipate the other side's arguments.

In designing her course, J. Sias (Interview, November 12, 2014) drew on her background in narrative journalism to use storytelling as an approach to exploring oral history and to provide critical thinking experiences. Similar to Tarter (2014), writing assignments were common in her course. Sias (2014) described students who were reluctant to speak in class but felt less intimidated when they had ideas written down to which they could refer:

> In addition to readings, I try to embed active learning in the classroom as much as possible. I do not see the First-Year Seminar as a lecture type classroom. It is meant to engage and involve students. There is a lot of group work, a lot of writing – although I would not call it high-stakes writing; probably more low-stakes writing, perhaps short thoughts on an index card.

When asked to describe the theme of her course, Sias (2014) went on to say:

> Storytelling has always been a strong interest of mine so I wanted to find a way to get at storytelling because I do think it is a part to critical thinking. On the face of it, some people might be a little dismissive and think not so, but reflective thinking, metacognitive thinking, allows one to examine how one learns and thinks about the world and where ideas and points of view emanate from and so I think one can examine those more deeply through storytelling.

Another FYS instructor also used oral history projects in his course. A. Gooding (Interview, November 14, 2014), whose course explores memory from different perspectives, designed an assignment that expected students to examine aspects of

everyday life through interviews with family members. Interviewing was also used by other FYS instructors as a basis for consulting primary sources for individual and group research projects and to encourage students to explore multiple perspectives.

Role playing was incorporated into a number of courses in a variety of ways. This engaged students in research of someone in a particular field of work that interested them or that supported development of their positions in an argument that may or may not be familiar to them. Ultimately, role playing required students to apply their knowledge and outcomes of their research in connection with real-life experiences. White (2014) used role playing as a strategy that challenged students to examine their perspectives on a number of issues. In various roles as government or policy analysts, students examined documents and engaged previous learning to interpret the documents to come up with a solution. Through the experience, students explored policy makers' mindsets about class, race, gender, sexuality, and geography as influential at the time policies were created.

As demonstrated in Table 2, 26 out of 27 survey responses indicated that FYS faculty members have more than five years of experience of teaching in higher education. Their experiences in curriculum development, course creation, teaching, and reflections, primarily based in disciplinary specialties, provided the framework for similar activities in the interdisciplinary work described by the sample of FYS faculty throughout their interview responses. In an attempt to understand the similarities and differences between planning a course in their discipline and their FYS course, faculty responses (n=12) reflected more differences than similarities. Four faculty (33.3%) noted that they used the same process in planning their FYS courses and three instructors (25.0%) used the same strategies for researching diverse materials to cover topics in the course. Primary

differences involved taking more time for planning (three faculty, 25.0%) and two (16.7%) reported that their FYS courses required more planning. This included planning a course outside of the familiarity of their discipline specializations gained through repetitiveness, where they were knowledge experts, knew course milestones, could predict student outcomes, and were more familiar with upper class students than freshmen. One instructor stated that having no common textbook and the necessity for every lesson to be newly created were major differences in planning for her FYS course (Tarter, 2014).

Faculty provided a diverse list of examples when asked to describe the ways in which they integrated their disciplines with other disciplines. Six of the FYS instructors (50.0%, n=12) felt that their disciplines had interdisciplinary connections and identified learning activities or strategies from their disciplinary teaching that aligned with their FYS courses. White used a different strategy in that he used sources from other disciplines and asked students to make the connections with history (his discipline) and other disciplines while Allenger (2014), whose primary discipline is education, made interdisciplinary connections through pedagogy and process instead of focusing on a product. White (2014), historian, described his strategy:

> I feel the sources I introduce are not by historians but by anthropologists, sociologists, and balance that by straight lectures based on history but then I use the Socratic Method to ask them to draw connections between history and other disciplines. So I bring in gender, race, class, and economics and literature references as much as possible.

In the analysis of the survey item regarding similarities or differences between planning FYS courses and other courses, faculty responses correlated with those provided in interviews. Table Five shows that there was not a significant difference (Mo=2, n=26)

between faculty who plan their courses in the same way from those who use different approaches. One aspect of planning FYS that was different from planning other courses as evident in survey responses was in the amount of time spent planning daily teaching. Survey responses indicated that faculty generally disagreed that they spent more time preparing content for their FYS courses (Mo=2). However, the combined interview responses of twelve faculty (Mo=4) agreed that more time was spent planning daily teaching. Sias (2014) agreed that "it does take a lot of investing and a lot of planning even after I have taught the class so many times, I am still learning." S. Gilpin (Interview, December 3, 2014) concurred when she stated that "because I was trying to mix it up and make it truly interdisciplinary, I did a lot of reading on unfamiliar things to prepare myself to present the appropriate background. It took *a lot* of time."

When asked to evaluate their success in integrating their discipline with other disciplines, faculty provided a diverse list of examples in which they made disciplinary connections. As seen in the table below, however, faculty responses demonstrate that they do not feel successful in their efforts at integration (Mo=2).

Table 5 - Course Planning and Development (n=26)

	Mode	Mean	Std. Dev.
I plan my FYS course in the same way that I plan other courses that I teach.	2	3.23	1.21
I spend more time preparing the content for my FYS course than I do in my other courses.	2	2.73	1.18
I spend more time planning my daily FYS teaching than I do in my other courses.	4	3.08	1.23
I feel successful integrating my discipline with other disciplines.	1	2.00	1.05

Teaching a FYS Course

Faculty were asked to identify teaching and learning methods they employed in their FYS courses and to describe the ways in which they were used. Examples of methods included Problem-based Learning (PBL), Inquiry-based Learning (IBL), and Interdisciplinary-based Learning (IDL). The choice of methods was based on indications of importance as found in the research literature, an increased emphasis on applying pedagogical theory, and also because PBL activities were modeled in the *FYS Institute.* Because four of the faculty (33.3%, n=12) expressed unfamiliarity with the acronyms and their definitions, their questions were answered with brief descriptions summarizing

perspectives found in the literature. Five faculty (41.7%) stated they used all three of the methods, two (16.7%) used a more IBL approach than PBL, three (25.0%) used PBL, one (8.3%) used a combination of PBL and IDL and another combined PBL and IBL.

In courses where PBL teaching and learning methods were used, three faculty (25.0%, n=12) consulted the *FYS Hub* for case-based learning activities. Other applications of PBL involved challenging students to analyze their beliefs and assumptions as well as read and interpret documents from the viewpoint of a policy analyst. Inquiry-based teaching and learning was applied in doing research for projects, conducting interviews, and holding debates. Examples of IDL included students defending their research as part of a class presentation, requiring students to examine multiple political perspectives surrounding an issue, and writing a Seuss-styled book that incorporated ideas, language and art. Allenger (2014) reported that "I approach teaching of FYS in a variety of styles because that variety allows students to try out new learning styles or even some they are not so good at."

Faculty were asked to identify the most difficult challenge in teaching FYS. Six themes emerged in faculty responses but one difficulty most frequently cited was teaching a course dominated by freshman students. Although there was an overall consensus recognizing that 18-year old students in their first year of college are transitioning from a high school setting, three faculty (25.0%, n=12) pointed out that students were not ready for college-level expectations including submission of assignments on time, completion of assignments that may not be personally interesting to students, attending class, and arriving to class on time. Saken (2014) observed that "It strikes me that I have to teach them so many things about being a student." In addition,

other concerns shared by faculty were for the unexpected need to develop classroom management strategies (perceived as an expectation in K – 12 classroom settings) in response to student immaturity, expressions of disrespect, and the increasing presence of students with exceptionalities. White (2014) stated that "the idea of classroom management was not something I thought I would have to use after leaving public school." Six faculty (50.0%) especially perceived a fundamental challenge in a lack of student initiative and the associated feeling that faculty needed to sell the course in order to gain student engagement and buy-in.

Additional challenges cited were related to course planning and in the case of three faculty (25.0%, n=12), the feeling that their contributions in creating FYS courses within a new undergraduate curriculum had gone unrecognized. Faculty who were trained in the first *FYS Institute* (i.e., Spring 2010) share in the challenges of ongoing changes and common course requirements as FYS has evolved since offering the course for the first time in the Fall of 2010. Seven of the faculty (58.35, n=12) interviewed for this study were trained in the initial *FYS Institute* and three (25.0%) of those who continue to teach FYS specifically cited challenges created by the impact of incorporating recurring changes in course requirements. Issues related to course planning included concerns over the large amounts of time required to plan a course that is out-of-discipline for them largely due to their unfamiliarity with other disciplines and feeling successful in teaching critical thinking outcomes. At least three faculty (25.0%) noted that differences between Fall Semester classes and Spring Semester classes affected their ability to teach the same course each semester. They cited many of the same factors above as more influential

depending on the semester (e.g., students in the fall shared their experiences with others yet to take the course).

FYS faculty cited a number of challenges in teaching a First-Year Seminar, responses to survey items are found in Table 6. Overall, results related to teaching a FYS course reflect that the faculty expressed strong feelings of success. When asked to consider their comfort level with teaching from an interdisciplinary perspective before teaching FYS, combined responses of 20 faculty (Mo=4, 74.0%) indicated that they felt comfortable teaching the interdisciplinary course. But 14 teachers (51.9%) indicated that they used new teaching methods. Their prior interdisciplinary experiences and knowledge may have contributed to 81.4% (Mo=4) of FYS instructors' abilities to answer student questions from an interdisciplinary perspective and 59.2% (Mo=4) felt successful teaching critical thinking in their FYS courses. Overall, 17 FYS faculty (M0=4, 70.3%) gained personal satisfaction from teaching an interdisciplinary course.

Table 6 - Teaching a FYS Course (n=27)

	N	Mode	Mean	Std. Dev.
I felt comfortable teaching from an interdisciplinary perspective before teaching FYS.	27	4	3.96	.898
Teaching FYS makes me rethink my teaching strategies.	27	4	3.48	1.15
In my FYS course, I use teaching methods that are new to me.	27	4	3.19	1.14
I am able to answer student questions from an interdisciplinary perspective.	27	4	3.96	.706
I feel successful teaching Critical Thinking in my FYS course.	27	4	3.74	.984
I get personal satisfaction from teaching an interdisciplinary course.	27	4	3.74	1.23

Reflections and Outcomes from Teaching an FYS Course

When FYS faculty were asked what they valued about interdisciplinary curriculum development and teaching, five (41.7%, n=12) expressed the appeal of engaging with students early in their college careers and associated concerns for guiding students in developing their interests. They valued working with young students, understanding their concerns, and finding out who they are because of the potential for better understanding of students in their major courses. White (2014), from his viewpoint as a history department faculty member, reflected on his work with FYS students:

> I should be encouraging students as much as possible to join the history program but at the same time, I find myself being more aware of encouraging students to follow other disciplines of interest and so I am thinking about several disciplines at once. Then, if a student is interested in science, I can spot that more clearly

> than before and then [suggest] the student speak with an engineer, biologist, or physicist. I think I can plug students into the fields for which they have a knack.

Sias (2014) shared a similar perspective and added the view of her experiences of engaging with young students:

> It's a challenge and an opportunity. We are dealing with first year students and sometimes we have to shepherd them along. Because they are making a transition from a high school setting. They may not be used to expectations for what kind of work is expected in a college or university setting. Now is the time to start shepherding them into some other expectations because in four short years from now they are going to be entering the professional world so we are dealing not just with academic issues but also issues related to maturing, being an adult and so coming to class, coming to class on time, and doing assignments that might not be all that exciting at all times. Research shows that you are going to be more successful if you go to class; and that starts with FYS. If we can develop that habit and that expectation, then are we not doing a service to the university and to them?

They also held the view that college students change majors, interests, and focus. Therefore, they need the FYS and ID experiences to help them make disciplinary connections and to align with real world experiences that need ID-style thinking. From his perspective, Gooding (2014) emphasized the importance of the liberal arts perspective found in an interdisciplinary studies course such as FYS:

> Considering that many freshmen will come in with either no major or come in with a clear idea of major and change it at the end or middle of the first semester, and some of them will jump through three or four majors, I think it is important that you give them a grounding at the start on the value of a college education; the value of having a liberal arts degree right off the bat. Because most of them will be switching career paths, switching direction after college, they need to be able to adapt to these situations.

They also felt that the real world professional preparation needs to be more flexible with multiple perspectives along with critical thinking skills. One of the faculty saw the significance of this as the need for developing more "MacGyvers" who can apply information and learning in the real world (T. Cartwright, Interview, December 8, 2014).

A second common value gained in teaching FYS was collaboration with other faculty. Four faculty (33.3%) specifically mentioned the discussion of ideas among colleagues, consulting faculty from other departments for their disciplinary knowledge and suggestions for topics, and sharing pedagogical perspectives. Frank (2014) viewed her FYS collaborations as

> a breath of fresh air; that I can go through service learning and a faculty development process and integrate with folks whose disciplines are different from mine but their thinking may not be and that is the beauty for me – it gives me permission to do that.

The greatest value of collaboration for St. Germain (2014) was in "the folks I get to work with [and] the airing of ideas. I like hearing how other people teach and meeting other good teachers – that's very rewarding." Additional valuable outcomes, according to Sias (2014), included membership in a "supportive community of people involved in and committed to interdisciplinary approaches." For Tarter (2014), the biggest value "is the lack of structure and the ability to explore so many different areas. And the ability to explore areas that would not naturally come into my discipline."

Another theme centered on significant professional development perspectives. Sias (2014) expressed appreciation for an emerging FYS learning community:

> I think we have made great strides in developing a sense of community among the FYS faculty. We have been having regular meetings and workshops but still there will be these happy accidents – what you call serendipity – sitting down with someone and listening to what they are doing in their class and I think 'gosh, that's amazing. I hadn't even thought about that.

From Saken's (2014) perspective, he saw the fun in teaching FYS:

> It's fun – it really is – when you can draw a lot of things together, when you can attack something from different viewpoints, when you have multiple approaches, when you can get them [students] to do things – that's fun. Sitting up there and lecturing, that's not fun.

Goodman (2014) has gained a better understanding of students' perspectives from different parts of the university community:

> The value is that I get to see what other disciplines are doing and I get a much better perspective on my own students because I am able to see where students are as freshmen. Because I teach [off-campus], I get this blend of eighteen year olds and non-traditional students. That gives me perspective on what is going on with students, what is going on the rest of the campus, what Marshall generally means to all students. It has given me a better idea of how to be a general educator than just in my specialized discipline.

Participants were asked how their ideas about interdisciplinary curriculum development and teaching changed after involvement with the FYS program. Six faculty (50.0%, n=12) identified ways their teaching changed and was influenced by FYS. Gilpin (2014) responded that overall she read about and experienced more interdisciplinary curriculum development and teaching through FYS. She noted further that:

> I have been more mindful of writing outcomes, thinking about objectives, and thinking about assessment since and I think it has improved my teaching in other ways too because you don't learn how to teach in graduate school. FYS really helped me think differently about how to set up a seminar course. That was good experience.

White (2014) reported that he gave himself a new class in learning how to be a better teacher and one result was development of a four-step process for engaging students in learning based on encouraging them to confront themselves to see if they can be more open minded and refer to legitimate resources instead of relying on emotional reactions. Similarly, other faculty felt their teaching improved and for Goodman (2014), that meant through thinking more abstractly:

> It has forced me to think more abstractly about what I teach because in FYS, it is not about ratings, and shares, and creating ad copy. It is this more global concept of 'how do I teach you to think?' That's really hard – because you are not teaching a subject, you are teaching skill." They also cited other improvements in their teaching such as increased comfort with getting students to challenge their

> assumptions, better classroom presentations, and the addition of the ability to teach critical thinking.

This was an important point for Allenger (2014): "now I see that I can use a lot of different disciplines to teach Critical Thinking, reasoning, and a lot of different skills."

While one group of faculty focused on improvements, two faculty (16.7%) referred to changes related to earlier perceptions about FYS. One instructor noted that teaching an FYS course was more difficult than expected and another felt it was more challenging to keep up with the content than expected. In summarizing her perspectives on changes brought by involvement in FYS, Allenger (2014) stated that "before FYS, I was only an education specialist. Now I am able to use different disciplines."

In an effort to understand the extent to which interdisciplinary work extends beyond developing and teaching an FYS course, respondents were asked how their experiences have affected their other teaching. Four faculty (33.3%) felt that it had not affected their teaching at all, mostly because they had been doing it for so long. Among those who did not perceive change in their other teaching was Saken (2014), who cited his past experiences in developing interdisciplinary curriculum:

> I have been doing this sort of thing for quite a while. I am teaching a CT [critical thinking] course in astronomy. I have developed curriculum from grade school up through the college level. I have developed flight science curricula for two different science camps and astronomy curriculum.

Gooding (2014) cited his teaching experiences in Integrated Sciences as influential in teaching FYS:

> I have brought the perspective from teaching my other course because before I was teaching a course called *Connections* which is about the impact of science and technology on society so that was already an interdisciplinary course; so I wouldn't say there has been much change.

From C. Ingersoll's (Interview, December 12, 2014) perspective, her interdisciplinary approach to teaching dates back to her undergraduate degree program:

> I think I was already doing interdisciplinary before I started teaching FYS. I am a product of true liberal arts education and I think the liberal arts college changed my life. I studied things that never in my wildest dreams wanted to or thought I would but there was something about that institution and the professors I worked with that told me 'take this, do this' and I did it. I did not argue. It opened my eyes. I took Dante seminars, James Joyce seminars – design students don't usually take those courses.

However, three themes emerged from the other respondents. Five stated (41.7%) that they were incorporating an interdisciplinary approach in other courses and employing FYS-designed related ideas in their classrooms. Frank (2014) credited the professional development course with two ideas that improved course development in her discipline - thinking deeply about the course and ongoing revision as part of the process. In her response, Sias (2014) noted that she looked for ways to incorporate FYS activities in her communications classes:

> I think it has made it [disciplinary teaching] more exciting and interesting because maybe things I have come across in planning for FYS would be useful in another class. It gets me to think about another method in another class; so it has invigorated my other teaching.

Gilpin (2014) expressed a similar perspective about interdisciplinary teaching:

> I love it and what I love most is how fresh it keeps me as a teacher because I am always learning something new. It's never the same semester twice. You know what it is like teaching with other faculty - you feel like you have been a student for a semester as well as a teacher at the same time.

Goodman (2014), who started teaching FYS in 2010, recounted how changes in the course from an emphasis on core domains to learning outcomes affected the design of her FYS course. With a shift toward a focus on critical thinking, her thinking as a teacher changed and when asked if this affected her other teaching, Goodman (2014) noted:

> It definitely has. This is hard. I have to think about this. I think FYS has changed me as a teacher because of having to think interdisciplinary. My focus is now what is truly critical thinking – how do we critically think about something, what is critical thinking, and how do we teach critical thinking.

Five (41.7%) noted involvement in FYS invigorated their teaching with new ideas by being less tied to content and becoming more aware of the need for keeping students engaged. In her classroom, Frank (2014) adopted a teaching approach less tied to course content and instead, brought a focus on the FYS learning outcome of ethical thinking to her communication sciences and disorders classroom.

> The scholarship of ethical thinking, which is driving my FYS courses, is now driving my disciplinary-specific teaching. The growth point has been that I open my classes up on a regular basis to thinking about bigger ethical issues in the discipline; not just how to do speech therapy [but also] what behaviors are important to change, how it impacts the individual, how it impacts the family, how it impacts the clinical relationship, and how it impacts our view of each other.

For Gilpin (2014), answering questions from FYS students that challenged her to define what the course was about or to define how learning was measured was intimidating. But her FYS experiences changed that. Developing strategies to keep students engaged in the FYS course, according to White (2014), also changed his approach in other classes:

> It stepped up pressure to be cognizant of how to keep students engaged. I have tried to develop my pedagogical skills and that is one thing the *Institute* did – a new injection of pedagogy. I had actually taken a seminar in undergrad on how to develop pedagogy for teaching languages and it still helps me but the *Institute* made me think even more. For FYS, I found myself consulting more sources on how to teach creatively and on speaking. The book *Talk Like TED* is all about the nine principles of all TED talk speakers and I feel that I would not have done that if I had not been teaching FYS. I have been able to carry that into my regular and FYS courses.

Four faculty (33.4%) who spent a lot of time researching materials and resources for their First-Year Seminars found the materials valuable in their other courses. When asked how teaching in her discipline had changed, St. Germain (2014) stated:

> I borrow from other areas to support topics more in my general costume class than I used to. I started using more video and internet in those classes [as well as] more interactive materials. Sometimes, it's just knowing who on campus is in a particular area, I can go to them and say 'I am doing this and I am doing that' or 'you had a great idea, what was that again?'

In describing the development of course materials for both FYS and journalism classes, Sias (2014) reflected on how an interdisciplinary approach moved over to her other courses:

> I am always looking for this tapestry of readings and materials and I try to think outside the box. It is not always the traditional textbook. It might be readings from a library database. It might be something I have seen on a blog that I feel is somewhat credible. It might be from a multimedia source, short videos, or audio tutorials and I think I do that in all my classes. I am thinking of my JMC 102 class, for instance, when we have been looking at how to conduct an interview. I found some really good *YouTube* videos from people who are considered leaders in the field, who do great interviews, and we practice them in class. So to some degree, I think I do take an interdisciplinary approach to my non-FYS classes.

Tarter (2014), who teaches persuasion classes, similarly uses FYS-related resources in her other teaching:

> I think a lot of the information I have found uses for in other classes. I think one of the exercises that started in FYS I have moved into my persuasion class.

A lot of the examples and research interests have allowed overlap into other classes. In Table 7, faculty responses to survey items related to reflections and outcomes from developing and teaching an FYS course similarly suggested that their interdisciplinary work transferred to other teaching and reflected that their interdisciplinary work in teaching FYS contributed to the university's interdisciplinary initiatives. The combined responses of 18 faculty (Mo=4, 66.7%, n=27) agreed that

teaching FYS made them rethink their teaching strategies and 12 (Mo=4, 44.4%, n=26) indicated that their ideas about teaching changed after their FYS experiences. The outcomes from FYS experiences, however, did not strongly influence faculty to use interdisciplinary strategies in their other courses. While nine faculty (33.3%) agreed that they used interdisciplinary strategies in their other courses, ten (37.0%) indicated that they did not, and eight (29.6%) neither agreed nor disagreed with the statement. The view that their interdisciplinary work in teaching FYS contributed to the university's interdisciplinary initiatives was held by 18 of the faculty (M0=4, 66.7%, n=27).

Responses of the faculty in the sample correlated with those in the population in that interviewees described in greater detail and gave examples of their reflections and outcomes from developing and teaching their FYS courses, while responses as displayed in Table 7 identified similarly specific outcomes from their interdisciplinary coursework.

Table 7 - Reflections and Outcomes from Developing and Teaching a FYS Course

	n	Mode	Mean	Std. Dev.
I value teaching an interdisciplinary course in the same way as teaching a course in my area of specialization.	27	5	3.89	1.21
I reflect more often on my FYS teaching compared to my other courses	27	3	3.04	1.09
My ideas about teaching changed after my FYS experiences.	26	4	3.19	1.16
Because of my FYS experiences, I use interdisciplinary teaching strategies in my other courses.	27	2	3.00	1.14
My interdisciplinary work in teaching FYS contributes to the university's interdisciplinary initiatives.	27	4	3.89	.847

Summary of Findings

Analysis of demographic data described participants in this study as experienced college teachers in both their discipline specializations and as First-Year Seminar instructors. Twenty-six faculty had more than five years of higher education teaching experience and a combined 68.0% (n=25) who held the rank of Associate and Full Professor. They taught in a wide variety of disciplinary specializations and represented a cross-section of the university's colleges.

Overall, analysis of Likert-scale data from the responses of FYS faculty (n=27) to survey items correlated with narrative-style interview data produced by a sample (n=12) of FYS faculty. Results from the faculty's evaluative responses provided specific information about their preparation, course development, teaching, and reflections on teaching a First-Year Seminar. Their narrative responses to interview questions provided

context and thicker descriptions of the faculty's perceptions about interdisciplinary curriculum development and teaching.

Faculty perceptions about their course preparation centered around four main themes that emerged from analysis of interview responses and correlated survey responses. Considering that teaching FYS required creating a new course outside of faculty's teaching specializations, faculty may be expected to consult interdisciplinary resources as they prepared to develop and teach the course. But faculty were more likely to focus on finding interdisciplinary materials supportive of student learning. This may be reflective of faculty who had interdisciplinary backgrounds that included graduate school preparationbefore enrolling in the *FYS Institute*. Another factor influential in the faculty's emphasis on materials directed at student learning may reflect expectations that FYS courses be organized around the diverse types of learning described in the university's five learning outcomes – Communication Fluency, Creative Thinking, Ethical and Civic Thinking, Information Literacy, Inquired Based Thinking, Integrative Thinking, Intercultural Thinking, Metacognitive Thinking, and Quantitative Thinking. Despite having backgrounds in interdisciplinarity, however, faculty perceived that they had to learn how to think like interdisciplinarians.

Analysis of faculty perceptions related to planning and development of an FYS course centered around the idea that faculty felt encouraged to think beyond familiar discipline-based course strategies to create learning activities. Faculty described a wide variety of strategies for engaging students through a diversity of course assignments; again, aimed at providing students with learning experiences that address the university's learning outcomes. Faculty were asked to identify similarities and differences between

planning and development of an interdisciplinary course compared to a course in their specialization. Increased planning and preparation time were cited as the main differences between the two preparations while the process of planning and development was similar.

Analysis of faculty perceptions about teaching a First-Year Seminar reflected overall feelings of success in teaching an interdisciplinary course and expressions of personal satisfaction. This included 59.2% of survey data that indicated faculty felt successful in teaching Critical Thinking, an unexpected outcome when interview responses related to preparation and planning FYS did not include references to Critical Thinking. The level of unfamiliarity expressed by faculty when describing teaching and learning methods was an unanticipated outcome considering that the professional development course incorporated PBL strategies and activities. A number of challenges surfaced as faculty discussed their course planning, development, and teaching most often linked to the large amounts of time faculty spent in various interdisciplinary-related activities. When faculty were asked to identify the most difficult challenge in teaching their courses, however, the most frequently cited concerns were related to a general lack of experience working with freshman students. Despite their substantial backgrounds in higher education, their previous classroom experiences did not provide points of reference for working with students unfamiliar with the college classroom environment.

Examination of faculty reflections on development and teaching FYS revealed that faculty valued their work as interdisciplinary curriculum developers and teachers. Despite the challenges cited above, instructors valued teaching FYS as much as teaching in their disciplines. They cited their personal development as teachers and their collaborations with faculty from other disciplines as important outcomes. The importance

of opportunities to explore new types of activities was represented by the wide variety of activities developed for First-Year Seminars and faculty initiatives to incorporate other disciplines. An unanticipated outcome was data supporting an overall faculty perspective that understands the broader context of interdisciplinarity at Marshall, and that their work contributes to the university's interdisciplinary studies initiatives.

Ancillary Findings

A narrative question at the conclusion of the *FYS Faculty Survey* asked respondents to complete the following statement: " I think like an interdisciplinarian when I . . ." Three themes emerged from among the 21 responses: (1) in both FYS and other academic work; (2) in FYS and related activities; and (3) engaged in activities outside the discipline. Nine (42.9%) responses reflected the perspective that they think like interdisciplinarians while engaged in the work they do both in the FYS program and in their other teaching. They generally do not divide their thinking between an interdisciplinary focus and their areas of specialization. In fact, this group characterized their disciplines as interdisciplinary and that their overall perspectives were predisposed toward a multidisciplinary perspective. Responses included: "I teach, work, think . . . theatre is by definition interdisciplinary at all levels"; "As a scientist and student of the world, I think like an interdisciplinarian every day"; "All the time"; and "Teach and perform music from different historical eras and regions. Unravel the code of music notation to create aural perceptions."

Seven teachers (33.3%) expressed thinking like an interdisciplinarian when engaged in FYS course-related work and similar activities in other courses. Responses included "engage in problem-solving, consider world events, and teach FYS." Another

response focused on course assignments: “assign students a research project aimed at challenging their assumptions about controversial current events” and “plan activities that rely upon subject matter from more than one discipline and help students learn how the disciplines interact and relate to one another.” For one faculty member, thinking like an interdisciplinarian means “I attempt to answer outcomes in FYS courses”. From the perspective of another instructor: “take off my hat as a speech-language pathologist and fully embrace my identity as a teacher/facilitator of Critical Thinking.”

A third theme centered around engagement in activities outside the faculty members’ discipline. Five instructors (23.8%) provided examples that included “attend lectures outside my area of expertise” and “pursue projects for funding for the university.” Responses from three First-Year Seminar teachers emphasized their use of interdisciplinary thinking in their teaching: “teach courses that are not discipline specific”; “seek out and/or recall influences from other disciplines that inform my work or prompt investigation outside my discipline for teaching resources”; and, “cross disciplinary boundaries, teaching a course using sociology, economics, political science, and maybe biology. These aren’t taught separately as in multidisciplinary, but integrated and I think that makes for a more dynamic and interesting course.” For another instructor, it was being “able to see the perspectives of multiple disciplines when considering a topic or idea.”

CHAPTER FIVE

CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

This chapter begins with a summary of purpose, followed by the presentation of conclusions, and then discussion and implications. It also includes recommendations for further research and offers some final thoughts.

Summary of Purpose

The purpose of this study was to examine perceptions of Marshall University's faculty regarding the impact that integrating interdisciplinarity into the undergraduate curriculum has had on their work in curriculum development and teaching; specifically, as it relates to the navigation away from their discipline specializations, and through completion of professional development, creation of new courses (First-Year Seminar), and finally teaching FYS. The following research questions guided the study:

1. How do faculty perceive their role integrating interdisciplinarity into Marshall University's undergraduate curriculum?
2. How have faculty worked through a new assignment to teach an interdisciplinary course - beginning with completion of the *FYS Institute* (professional development course), through teaching the course (First-Year Seminar), and continued teaching in their disciplines?
3. How have faculty perceptions of interdisciplinarity at Marshall University been changed by involvement in activities related to FYS?
4. What has changed in the faculty's discipline-specific course preparation and teaching after their interdisciplinary and FYS experiences?

Conclusions

Data collected as part of this study were sufficient to support the following conclusions as they addressed the research questions around which this study was organized. The following lines out each of the study's research questions and how the findings help to elaborate perceptions of Marshall University's faculty regarding the impact that integrating interdisciplinarity into the undergraduate curriculum has had on their work in curriculum development and teaching.

Research Question One

How do faculty perceive their role integrating interdisciplinarity into Marshall University's undergraduate curriculum?

Faculty who teach the First-Year Seminar understand that because the course "provides the foundation for further general education courses as well as study in the majors" (General Education, 2013), development of individual FYS courses will require them to include as many of the common student learning outcomes as possible that fit course topics and themes. While FYS courses contain shared elements, faculty are given freedom to develop readings, assignments, projects, and other learning activities. When FYS faculty were asked to describe examples of activities they designed in support of interdisciplinary teaching and learning, various types of projects were commonly chosen as the major assignment for students to which additional lower-stakes and smaller-scale assignments were added. An important focus of all of the activities was to engage students in interdisciplinary learning that explored problems or topics from multiple perspectives reflective of FYS Learning Outcomes: Inquiry Based Thinking, Intercultural

Thinking, Information Literacy, Metacognitive Thinking, Integrative Thinking, and Ethical and Civic Thinking (FYS Instructor Hub, 2015).

According to Saken (2014), a professor of astronomy, the design of his FYS course was based on his preference for inquiry-based and problem-based learning. From his perspective, kinesthetic (hands-on) activities provided students not only with a variety of experiences to explore the course topic of design but also to incorporate a number of FYS Learning Outcomes. His idea - to design a project that unfolded through a series of shorter assignments that would provide learning opportunities for students in more than one learning outcome - was a common course design feature adopted by FYS instructors. In one of his projects students designed a house, an assignment that begins with students selecting slips of paper from a hat on which are written locations from around the world. Based on the location, students designed and built a model of what would be considered a modest starting home for the region. In their exploration of design concepts, they were expected to research important contextual elements such as environmental and climate factors (e.g. average daily temperatures, rain or snow fall, humidity levels), types and availability of local building materials, and basic economic conditions for the region. Using both printed and digital resources, students gathered information about their locations that included images of the region, ideas for types of housing, and that, overall, helped them develop fundamental understandings of the region's culture. In working through the steps of their projects, students began by using previous knowledge and skills that over time expanded and developed as they worked to complete their models. Although there were a number of possible interdisciplinary-related learning outcomes from a project such as the one designed by Saken (2014), he focused on a specific set of

expectations. The focus was primarily on the learning process, which involved creating a strategy for a house design, identifying problems and finding solutions for them, and applying a synthesis of old and new knowledge.

Integrative thinking is threaded through many of the examples of FYS learning activities. Two faculty members – one from education and the other from journalism and mass communications – designed small group projects in which individual students analyze and evaluate sources on a topic from a specific disciplinary perspective. Goodman (2014), a professor of advertising and FYS instructor since its inception in 2010, was among the group of instructors who considered their disciplines as being characteristically interdisciplinary. Because her specialization focuses on the content or communication aspects of advertising rather than the marketing or design elements, Goodman (2014) is interested in the process of information gathering and has taught a course on the topic for over 10 years in the School of Journalism and Mass Communications. As she developed activities for her First-Year Seminar, she chose a number of projects from her course *Information Gathering and Research* that she felt aligned with FYS Learning Outcomes. As an example of integrative learning, she described the following activity:

> I pick up an in-depth article from the *New York Times*, something with charts, graphs, and other details. I divide the group by major disciplines. Students read the article and find all of the references to the discipline from which they are looking. Then I reconfigure the groups so they are mixed and each of the disciplines is represented in the groups. They look at the article again, talk about it, and share with each other how it addressed all of these disciplines.

Cartwright (2014), also a member of the inaugural group of FYS instructors and professor in the College of Education and Professional Development, primarily teaches science methods for pre-service elementary school teachers. She described herself as "a

big supporter of FYS" because of its focus on student learning outcomes that equip students to think and analyze from different perspectives. Cartwright (2014) is especially interested in providing opportunities for students to see connections across their undergraduate learning experiences (e.g. integrative thinking). In an effort to promote integrative thinking, she designed a small-group project in which students incorporated a technology application for presentation of their research projects:

> I had students research some interesting topics that they found and then create a web site and explicitly provide connections between their topic and the different types of thinking. They appreciated it and particularly when everyone presented their various perspectives on a similar topic they could see the connections between these issues and the way it would be thought about in art and the other types of thinking that are part of the course.

Other activities meant to engage students in active learning included the use of interviews. In one FYS course, Sias (2014), a Mass Communications and Journalism faculty member, used Studs Terkel's (1997) book *Working*, a collection of stories based on interviews of people who talked about how they felt about their jobs, as the framework for designing a storytelling project based on student interviews. Ever since she began teaching FYS in 2010, Sias (2014) has used interviewing assignments to incorporate her storytelling interest into her course because "it is a part of critical thinking." Not only do students demonstrate FYS learning outcomes through the process of interviewing, they interview people that they found interesting or involved in various types of work in which the students might one day be employed. From Sias' (2014) perspective, storytelling involves "reflective thinking and metacognitive thinking that allow one to examine how one learns and thinks about the world, and from where ideas and points of view emanate." For other faculty who assign similar projects, interviewing was key to student demonstrations of other FYS outcomes - developing their skills in asking questions,

evaluating sources, deciding relevance of information, and producing writings or presentations that tell stories.

When faculty were asked what they valued about interdisciplinary curriculum development and teaching at the university, their responses reflected the importance of connections made with other faculty and disciplines from across the campus. Their experiences are examples of how a group of interdisciplinary-minded faculty form a community within the university whose role is to lead interdisciplinary curriculum development and teaching. A common response among FYS faculty was in the value of faculty working together, across academic disciplines. As several faculty noted:

> It is a breath of fresh air for me to go through service learning and the faculty development process and integrate with folks whose disciplines are different from mine. (Frank, 2014)

> The folks I get to work with. Working with other faculty. The airing of ideas. I like hearing how other people teach. Meeting other good teachers. (St. Germain, 2014)

> I think the biggest value is the lack of structure and the ability to explore so many different areas. And the ability to explore areas that would not naturally come into the discipline. (Tarter, 2014)

Other faculty cite the importance of the work done with FYS students who are typically freshman and new to the university as well as opportunities to mentor students. From White's (2014) perspective, he related his own experiences with those of first-year college students in his FYS course:

> I joined the Marines after a year of college and that was in part because I did not have a mentor on campus or I felt lost on campus my first year. Since then, I have talked with others, Marines and professors who went to school for a year, dropped out and came back.

White (2014) went on to say:

> I feel there is a real need for that [mentoring] and I became more aware of how students might fall through the cracks so I really pride myself in getting to a lot of students and retaining a lot students and to help them along, to plug them into counseling services, encouraging them to come back to my office and emailing before making the decision to drop out.

Gooding (2014), who directs the Regents Baccalaureate Program, works primarily with nontraditional, and mostly adult, students and although students in his FYS class were enrolled as traditional undergraduates, he saw common characteristics between the two groups. Even though students may begin a college on a traditional path, they may be undecided or unclear about their goals after graduation. Gooding (2014) views courses like FYS as valuable in giving students "a grounding at the start on the value of a college education" as life-long preparation:

> The way students can be expected to move through careers and various work places, the less rigid they are, and their expectations are, the more adaptable they become the more successful, the more fulfilled they'll be; So to teach someplace that really embraces interdisciplinary learning is important.

Perspectives similar to those of Gooding (2014) were shared by Allenger (2014), Gilpin (2014), and Cartwright (2014); in particular, the real-life focus of interdisciplinary learning in FYS as valuable to students and ultimately, their success through their college careers. Allenger (2014), who teaches reading foundations and assessment in the College of Education and Professional Development, pointed out that students in her FYS course as well as those in her other classes frequently come from isolated backgrounds where their experiences were limited. She viewed the FYS experiences especially valuable for them:

> I think I value it because it is real life. I think many of our students come from a very isolated population so they think everybody thinks like this [i.e., like them] and so I think a multidisciplinary approach allows them to experience a much broader range.

Collaboration with faculty from other disciplines was particularly valuable to a number of FYS faculty. Frank (2014), Gooding (2014), and St. Germain (2014) noted the importance in sharing of ideas, awareness of varying pedagogical perspectives, opportunities to meet similarly-minded colleagues, and, especially, the availability of colleagues with whom they could consult for disciplinary knowledge and topics. The overall importance of a community of interdisciplinary faculty was summed up by Sias (2014):

> I think it is supported. We have a Center for Teaching and Learning. You have lots of support by way of workshops, one-on-one hands-on trainings, readings; plus there is a community of people going through this as well so I have lots of fellow and sister faculty members who I can borrow from or pick their brains and share ideas. So I feel like there is a supportive community of people involved in and committed to interdisciplinary approaches.

Overall, First-Year Seminar faculty perceived their role as integral to a university-wide initiative to establish interdisciplinarity as fundamental to the undergraduate students' experiences at Marshall University. Their work as curriculum developers and teachers created a cornerstone course in Core I of the general education component within the undergraduate curriculum that is required of all students. The work of the faculty was significant and especially notable in that they maintained their departmental affiliations and disciplinary specializations while developing and teaching an interdisciplinary studies course. From this perspective, two patterns emerged from the conclusions.

A pattern that emerged from the study with implications for the faculty's role in integrating interdisciplinarity was the emphasis given by FYS faculty on course design, and more specifically, learning activities and assignments. While faculty could be expected to do the same with their disciplinary courses, FYS faculty spent more time

researching and designing different types of projects focused on active learning that also had potential for high engagement of students in their classes. While faculty prepared their disciplinary and interdisciplinary courses separately and attempted to maintain reasonable workloads, implications suggest that concepts of interdisciplinary teaching and learning will blend into disciplinary teaching across many of the university's academic departments.

A second important pattern highlighted the FYS faculty's focus on incorporating the university's learning outcomes. Because processes instead of products were stressed in FYS classes, students were expected to engage in critical thinking and problem solving (e.g. the core modes of thinking in FYS). According to the faculty, using this approach connected students to real-life experiences and other valuable learning but it also created unforeseen challenges in working with students who were new to the university environment. In efforts to improve student learning outcomes, FYS instructors focused on strategies to provide students with opportunities to develop and expand their knowledge and skills. A possible consequence of providing opportunities for students to explore a topic from multiple perspectives, understand how to make connections across their learning experiences, and to be mentored by the faculty has implications for attaining one of the goals of interdisciplinarity in the general education core - increasing student chances for academic success in upper division coursework within their degree programs.

Research Question Two

How have faculty worked through a new assignment to teach an interdisciplinary course – beginning with completion of the FYS Institute (professional development course), through teaching the course, and continued teaching in the disciplines?

Participation in the *FYS Institute*, a professional development course provided by the Center for Teaching and Learning, is required of all faculty who teach the First-Year Seminar. During the period examined in this study, the semester-long course met weekly face-to-face. As the course evolved from its beginning in 2010, topics covered in the class meetings were updated to cover changes to FYS learning outcomes. Participant Observations during the Fall 2013 *Institute* confirmed that the core requirements – identifying the individual course theme, a course design, and writing of the syllabus – continued as the focus of the class meetings. A series of learning activities based on a scenario (problem) were incorporated each week to provide faculty with experiences in Problem-based Learning (PBL) and strategies were presented for using the method in FYS courses. To assist faculty in designing their courses, the faculty group was introduced to a draft of new FYS learning outcomes early in the semester and by the end of the course were given the final version. As the semester unfolded, it was observed that additional changes from previous course frameworks were incorporated into the instruction and expectations for including common course requirements on the part of individual instructors were communicated (including the use of a custom-designed textbook on Critical Thinking). In addition, resources supportive of FYS teaching and learning were consolidated into a module in the university's online Learning Management System (*Blackboard*). The *FYS Instructor Hub* (2015) is a repository for

course design resources and a variety of FYS-related materials created by and meant for sharing by FYS instructors. Topics listed in the Table of Contents include Required Materials/Policies, Optional Course Materials, Discussion Board, Multimedia, Syllabus Templates, Program Administration, and *Blackboard* Tutorials.

Faculty were asked to describe their backgrounds in interdisciplinarity prior to enrolling in the professional development course. The majority of interviewees responded in one of two ways. Either they had some experiences based on using a multidisciplinary perspective or their primary disciplinary specializations could be characterized as having an interdisciplinary perspective. No participant in the study had training or were specialists in interdisciplinary curriculum or teaching. Faculty described a variety of experiences that included graduate coursework, work outside of higher education, and public school teaching. An example of prior interdisciplinary experiences was described by Sias (2014) when she reflected that

> as a librarian for many years, I had to be interdisciplinary because one day I might be working with an English class and the next day it might be working with a biology class to find scholarly research on a particular issue related to their studies in biology. I had to be able to move and switch across disciplines especially in disciplines that were not familiar to me. As a librarian, you had to be able to function in an interdisciplinary fashion.

Gilpin (2014) was among the group of faculty who described their disciplines as having a multidisciplinary perspective. Having earned a doctorate in rhetoric, she described her viewpoint as "very much in favor of looking at texts and languages and the way we create meaning." As a faculty member in communications studies and an instructor in the Honors College, Gilpin had experience teaching from an interdisciplinary perspective. But until asked to reflect on her experiences, she and other similarly minded faculty had not considered that their teaching approaches were either

disciplinary or interdisciplinary. As Gilpin (2014) described her perspective, she expressed a common thread shared by others with similar backgrounds when she stated:

> In upper division courses, rhetoric is interdisciplinary by nature so I had some experience without thinking of myself as an interdisciplinary teacher. I was probably practicing it more than I was conscious of; certainly more than I was naming it as interdisciplinary.

Although the data from the survey item showed faculty agreed with the statement "I had to learn how to think like an interdisciplinarian to teach FYS" (Mo=5, n=27), a common theme that emerged from interview responses further characterized faculty disciplinary specializations as reflecting an interdisciplinary perspective. In her response, Goodman (2014) stated that:

> because I teach advertising, everything I do is interdisciplinary. Before I taught FYS, I taught the course *Information Gathering and Research,* in which we teach journalism students how to find information and to write stories. In some ways, my FYS course grew out of that preparation. So, for me, interdisciplinary is normal.

The interdisciplinary backgrounds described by FYS faculty may provide reasoning for why faculty without interdisciplinary specializations indicated that they did not research resources in support of their FYS teaching and may account for why they feel their other teaching was not affected. Generally, they do not hold the perspective that their approaches to disciplinary and interdisciplinary teaching are distinctly different. Considering this viewpoint, it may influence what they value about ID curriculum development and teaching as well as account for their gravitation toward teaching a First-Year Seminar.

While FYS faculty were given a set of common course requirements, they were encouraged to develop unique course themes, select their own course materials, and create learning activities. FYS Faculty interviewed for the study responded to a question

that asked them to describe the types of interdisciplinary resources they used in preparing their courses. They described a wide variety of multimedia, print, and digital sources, most of which were consulted for adoption as course materials for students and reflective of course themes. Reasoning behind their choices often reflected emphasis on the potential of the resource to be attractive to students and as a tool for spurring interest in the course. Resources identified exclusively for faculty use were consulted to provide knowledge about topics in unfamiliar disciplines and frequently selected to support common course learning outcomes.

Examples of books selected by an instructor and aimed at students were *Spark: The Revolutionary New Science of Exercise and the Brain* (Ratey, J.J., and Hagerman, E., 2013) selected not only to expose students to recent research on exercise and psychological development but also to encourage them to exercise. In the same course, the book *Born to Run: A Hidden Tribe, Superathletes, and the Greatest Race the World Has Never Seen* (McDougall, 2011), chosen for its theme centered around "challenging students' mindsets about their bodies, as people who inhabit the modern world and their ideas of modernity versus traditionalism" (White, 2014). Other instructors who also focused on choosing supplemental readings expected to challenge student assumptions and broaden their perspectives selected titles such as *Working: People Talk about What They Do All Day and How They Feel about What They Do* by Studs Terkel, A.J. Jacobs' (2010), *My Life as an Experiment,* and Dweck's (2007) *Mindset.* Another instructor chose the book *Whatever It Takes: Geoffrey Canada's Quest to Change Harlem and America* (Tough, 2009) in support of her course theme *Success*. She wanted students in

her FYS class to read about other students who may have similar backgrounds but were able to rise above difficult social conditions through their educational experiences.

Three influential factors emerged as integral to the work of faculty as they prepared and taught a new interdisciplinary course assignment: (1) completion of the professional development course; (2) their interdisciplinary backgrounds and diverse interdisciplinary experiences; and, (3) the considerable research done to identify interdisciplinary resources in support of student learning.

The goal of the *FYS Institute* was for each participant to plan a First-Year Seminar and write the course syllabus. All course designs were based on two common elements - course description and student learning outcomes – but teaching and learning in the course were unique to each instructor. Modules in the PD course included The Institute, Learning Issues, PBL Completion, Course Planning, and Course Coherence. From its first year (2010) through Spring Semester 2014, the course goals and modules remained the same but as the *Institute* evolved, topics changed in response to faculty input and evolving university policies. Because the experiences of teaching FYS were similar to those of any faculty member teaching a new course, courses were updated after reflecting on each semester's work. Goodman (2014), who was among the first group of FYS instructors, remembered the PD focused on PBL (Problem-based Learning) and at the time, Core Learning Domains. While PBL has remained, other changes affected teaching and learning expectations across various sections of FYS. For example, the course framework of disciplinary-based Core Learning Domains was replaced by University Learning Outcomes, based on developing Critical Thinking (General Education, 2013). As other changes were adopted, they were incorporated in succeeding PD courses.

Faculty enrolled in the *Institute* designed their courses on the most current revisions and returning faculty were notified of course changes through email, during FYS faculty meetings, and on the FYS Hub.

The amount of change became an important aspect of the FYS faculty's experiences - it occurred yearly and impacted their work in developing and teaching the course. Experienced teachers in higher education know that the final version of a course evolves after multiple times teaching and revising its content. From the FYS faculty's perspective, change introduced over the course of semesters combined with factors highlighted in Chapter Four's findings, contributed to a number of concerns that emerged, including, the larger amounts of time required to research and plan daily teaching and increased common course expectations that reduced flexibility in course content. Goodman (2014) summed up how changes affected her teaching:

> For a while, we had the university-wide reading assignment. That had to be integrated into the class. There was a lot of time in the initial training picking out a textbook that would be the university-wide reading. That's gone. The domains were very important in the beginning and I divided my class up so that we could cover each of them. The domains will be gone by the next rendition of my syllabus. I think they are going to take that out of the collective textbook they are using [Critical Thinking in College]. So that is a lot of changing that I have gone through over time in terms of evolving to where I am with the course.

As indicated earlier, the interdisciplinary backgrounds and experiences of all FYS instructors were diverse and as demonstrated in their responses, essential to the faculty's interdisciplinary work. The responses revealed no faculty with interdisciplinary degrees or specializations and only one faculty member who had participated in professional development to teach an interdisciplinary course. Frank (2014), whose appointment at Marshall University was in communication sciences and disorders, held an earlier position at the University of Akron where she was engaged in a similar IDS program. The

perception that their disciplines were interdisciplinary oriented or that they thought like interdisciplinarians, was shared by a number of the FYS teachers. Gilpin (2014), Sias (2014), Saken (2014), and Tarter (2014), for example, described their disciplinary specializations as interdisciplinary. White (2014) credited his academic preparation in multiple disciplines as fundamental to his interdisciplinary perspective. Teaching experiences contributed to the classroom approaches of St. Germain (2014) and Allenger (2014) – St. Germain was an instructor for several semesters in a team-taught Honors seminar and Allenger's earlier teaching experience was in K-12 schools. Overall, the faculty relied on prior interdisciplinary work to inform and support their seminar course development and teaching.

An aspect of developing and teaching an ID course emphasized by faculty was the amount of research done to identify and locate resources in support of student learning. Their selection of texts, as demonstrated above, focused on interdisciplinary themes or topics presented from multiple perspectives. An important criterion for choosing a text was its potential for motivating and engaging student interests. According to White (2014), he found *Spark: The Revolutionary New Science of Exercise and the Brain* (Ratey, J.J. & Hagerman, E., 2013) selected to be interdisciplinary, engaging, and as a result of further research found a TED Talk by the same authors. Sias (2014), who also used multimedia to stimulate student interest in her course theme of Storytelling, described how she integrated relevant and current audio and video clips into her course:

> I also regularly use multimedia in my classroom. It might be a TED Talk on an interdisciplinary subject. I am a big user and a big fan of *This American Life*. There may be portions or in some cases full episodes and other storytelling podcasts and programs like that; NPR programs – if I hear something on *All Things Considered* and I think it relates, I will share that with them. So, I try to find relevant, up-to-date [clips] – of course, I don't know if they are into NPR and

> whether it is up-to-date. But it is to me. Sometimes I have also used a few clips from *Saturday Night Live* because we are looking at satire and spoofing some big issues.

One of the attractions of teaching FYS, as described by faculty, was in the freedom to broaden their searches beyond their disciplines to explore course materials and readings. Gilpin (2014) was among this group and shared her perspective:

> I really loved the freedom that I had to pick anything to support course goals. I was happy that I did not have to limit myself to the disciplinary canon to teach - [such as] something in a popular magazine, something on the web, or an advertisement.

Meeting course goals and university learning outcomes was a primary criterion for choosing course materials for faculty like St. Germain (2014), who described her strategy for choosing resources:

> I look at film and books from outside my discipline - also television shows – that would provide a broad spectrum enough to hit all the outcomes. I am not targeting any specific discipline per se but I am looking for a more broad approach.

Considering the above factors, it is worth observing that faculty did not focus on acquiring the language of interdisciplinarity nor terminology commonly used in research literature on interdisciplinarity. Responses to questions asking faculty to define and describe the interdisciplinary approach in their course (i.e., crossdisciplinary, multidisciplinary, transdisciplinary, and interdisciplinary) generally demonstrated lack of familiarity with the terminology. Similar responses were given when they were asked to describe a choice of teaching and learning methods (i.e., PBL, IBL, and IDL).

Experienced higher education faculty have likely developed and taught a new course in their disciplines. As a result, over the course of several semesters of trying new ideas and repeating those that worked, faculty could be expected to rely on the most successful strategies, frameworks, methods and materials. The result was a collection of

dependable resources and often in support of more than one course in their specializations. The implications for FYS faculty who participated in this study demonstrate that past teaching experiences in their disciplines combined with a considerable amount of similar interdisciplinary work were not only important in their new teaching assignments but also essential to meeting the university's expectations for teaching and learning in First-Year Seminars. Once the requirements of the PD course were met, FYS faculty were more likely to focus on facilitating and supporting student learning in their classes while spending less time researching and developing knowledge of topics such as the history of interdisciplinarity, its pedagogies, its epistemology and ontology, or current developments in the IDS field.

Research Question Three

How have faculty perceptions of interdisciplinarity at Marshall University been changed by involvement in activities related to the FYS?

The study's participants generally perceive interdisciplinarity at Marshall University as important to undergraduate education because of the potential for important student learning outcomes that demonstrate abilities to think critically and problem solve. Overall, faculty responses indicated that they felt their interdisciplinary work contributed to the university's interdisciplinary initiatives and that they gained personal satisfaction from teaching an interdisciplinary course.

As a result of their direct participation in FYS, however, their assumptions about developing and teaching FYS changed. Years of higher education teaching experience and confidence in their interdisciplinary backgrounds influenced their initial expectations for creating and teaching First-Year Seminars. They approached the course from the

perspective of the value they placed on their own ID experiences, as a unique opportunity for student learning, and for the potential positive impact on undergraduate education. From this perspective, a number of faculty felt caught off guard by the unexpected challenges. As one faculty member, Allenger (2014), explained, "I think I did not realize how challenging it would be to teach it. I thought that it sounded fun and engaging to students, to myself". In a similar vein, Cartwright (2014) noted that "It's not as easy as I thought it would be."

Others had not anticipated the challenges of working with freshmen after years of experience teaching upper division students in their disciplines. St. Germain (2014) stated that "freshmen are changing hugely. They are harder to engage. They are harder to keep on task. They are harder to get to work." As a result, she changed her approach in the classroom and teaching style in an effort to engage students. Gilpin (2014) observed that "getting students at that age with a modest preparation for college to engage seriously with what we were doing was the hardest thing." Gooding (2014), in summing up his perspective, stated, "How to be patient with first semester freshmen can be a stretch sometimes. That's probably the most difficult thing".

For FYS instructors who signed on early in the development of the interdisciplinary course, the evolution of change has altered their earlier perceptions of FYS. Initially, White (2014) was attracted to teaching FYS because he perceived greater autonomy in teaching, an initial intention in encouraging students to become part of the Marshall community, and a focus on student retention. Saken (2014) shared a similar perspective and added concerns over the increased emphasis on common course and university requirements.

Although FYS faculty bring interdisciplinary backgrounds and perspectives to developing and teaching their courses, a number of faculty observed that their perspectives about classroom approaches and thinking about teaching changed from their involvement in FYS activities. For example, by taking on a First-Year Seminar, they researched and read in multiple disciplines while recognizing their limitations as the expert in each one. For Allenger (2014), this became an opportunity for students and instructor to make contributions to the course and created more engagement.

> Before I taught FYS, I thought I was only an education specialist, that's the only thing I am good at because that is what I know, that is what I studied, that I like reading about, talking about; but now I see that I can use a lot of different disciplines to teach critical thinking, reasoning, and a lot of different skills.

Change in faculty perceptions of interdisciplinarity at Marshall was characterized by a pattern of responses in which faculty referenced the dominance of a disciplinary lens in developing and teaching their FYS courses. The ease and predictability of teaching in their disciplines that on the one hand provided background and experience to support interdisciplinary studies teaching did not readily translate to development and teaching of a new course. While they felt challenged in their ID work, FYS faculty researched solutions and resources that could help them in their work. This included increased knowledge in multiple disciplines, improved pedagogical skills, and greater focus on elements of course framework such as course objectives, learning outcomes, and assessment. A few faculty reflected that teaching an interdisciplinary course like First-Year Seminar was more difficult than they initially thought it would be for them.

While several faculty worked to address the challenges of their ID work, others confronted the unanticipated expectations of new university students (predominantly freshmen) in their classes. They prepared their FYS courses using the combined

resources of their backgrounds and a common course framework provided in the PD course but found themselves making changes as the semester unfolded. Instead of working with upper class students in major courses who generally understood the purpose and need for the course, FYS instructors worked with students who did not have a clear idea of the purpose or need for the interdisciplinary course. For faculty focused on interdisciplinary teaching and learning, classroom management issues became an unanticipated and influential factor related to their FYS classroom experiences.

The implications for faculty perceptions of interdisciplinarity at Marshall as found in the study have potential to impact future recruitment of and faculty interest in teaching FYS. From this perspective, it is important to consider the context in which FYS has evolved. At the time of this study, the course had been taught for a total of six semesters and over that time, had been updated each semester with varying levels of change. Essentially, the faculty who participated in this study were instrumental in establishing FYS as one interdisciplinary course in the university's new undergraduate core curriculum.

The approach taken to establish interdisciplinary studies within the framework of the undergraduate curriculum followed a traditional approach in which there are no "trial runs" of a course. To determine the viability of a course, it is taught, reflected upon, changed where needed, and retaught. The process is repeated and may continue indefinitely. Using this same approach with First-Year Seminar courses is complicated by additional factors related to faculty teaching out of their disciplines, a course framework with increasing common course requirements, and a mounting perception that inexperienced college students may be unprepared for engaging in an integrated studies

course. First-Year Seminar faculty, aware of the level of institutional change introduced by recent integration of FYS into undergraduate studies, may perceive change as an inevitable part of involvement in FYS and accept the challenges they encounter. Future sustainability and continued development of interdisciplinarity at Marshall University, however, is dependent on involvement of the faculty in their critical role of curriculum developers and teachers. How they continue to perceive their experiences as FYS faculty may have implications for their continued involvement.

Research Question Four

What has changed in the faculty's discipline-specific course preparation and teaching after their interdisciplinary and FYS experiences?

Based on findings in this study, it is not surprising to find that FYS experiences did not strongly influence faculty to adopt interdisciplinary strategies or approaches in their discipline-specific courses. Overall, FYS teachers have backgrounds in interdisciplinarity and have years of experience teaching in higher education that support their work in curriculum development and teaching. For this group of faculty, teaching a First-Year Seminar was considered part of their scheduled teaching loads. Ultimately, they responded to institutional requests for faculty to participate in a university-wide initiative for developing interdisciplinary courses. Expectations were for faculty to complete the *FYS Institute* where they developed their courses and then to teach them alongside their discipline-specific courses. Participant responses to both survey and interview questions revealed a general perspective that faculty did not consciously separate nor approach their interdisciplinary and disciplinary teaching from different

perspectives. For example, Tarter (2014) described how information crossed over to other courses:

> I think a lot of the information I have found uses for in other classes. One of the exercises that started in FYS moved into my persuasion class. So a lot of the examples and research interests have allowed overlap into other classes.

To do so would have added to a work load they already perceived as heavy and time-intensive. Therefore, they may employ a more holistic approach to developing and teaching their FYS courses and *vice versa* that may allow them to fulfill demands for course preparation and teaching without engaging in dramatic changes.

A number of faculty, however, provided examples of how their FYS experiences changed or added to their disciplinary teaching. White (2014) and Frank (2014), in thinking more deeply about their teaching, adopted the Socrates-inspired concept of "teaching with your mouth shut." While Frank (2014) consulted the text *Talk Like TED* (Gallo, 2015) for ideas on teaching and speaking, White (2014) noted that his philosophy of teaching evolved and changed as a result of consulting the works of Freire and Chomsky, whose writings inspired him to think in unconventional ways. Frank (2014) also shared that she adopted a strategy from her FYS planning that focuses less on content and more on a conceptual framework that introduces fewer new concepts, creates connections to previous learning, and focuses on overarching understandings to get at new learning.

Some faculty viewed their FYS experiences more from the perspective of improving or enhancing what they do in their other courses and less from a change perspective.

> I think it has made it more exciting and interesting because maybe things I have come across in planning for FYS would be useful in another class. It gets me to

> think about another method in another class. So it's invigorated my other teaching (Sias, 2014).
>
> I love it and what I love the most is how fresh it keeps me as a teacher because I am always learning something new. I have been more mindful of writing outcomes and thinking about objectives, thinking about assessment. Since then, I think it has improved my teaching in other ways too because you don't learn to teach in graduate school. FYS helped me think differently about how to set up a seminar course. That was a good experience. (Gilpin, 2014)

Patterns developed around three themes in faculty responses relative to changes in their discipline-specific course preparation and teaching that resulted from their interdisciplinary and FYS experiences: (1) ID approaches and activities were integrated into disciplinary courses; (2) teaching was informed by new pedagogical ideas; and, (3) FYS resources and course materials became valuable in other courses. While a number of faculty included at least one or more of these themes in their responses, a smaller group of faculty shared the perspective that their disciplinary teaching had not been affected by their interdisciplinary work. They were likely to have described their disciplinary work as having interdisciplinary characteristics.

Implications for the outcomes from the change introduced into disciplinary courses indicated potential for spreading interdisciplinary concepts and approaches across university-wide teaching, updating pedagogical methodology, and increased diversity of resources and materials used by students in their courses.

Thinking Like an Interdisciplinarian

A narrative question at the conclusion of the *FYS Faculty Survey* asked respondents to complete the following statement: *I think like an interdisciplinarian when I . . .*

Responses reflected the perspective that FYS instructors think like interdisciplinarians in three interdisciplinary-related ways: (1) while engaged in the work they do both in the FYS program and in their other teaching; (2) when they are engaged in FYS course-related work and similar activities in other courses; and (3) while engaged in engagement in activities outside the faculty members' discipline. Respondents did not divide their thinking between an interdisciplinary focus and their areas of specialization. In fact, many characterized their disciplines as interdisciplinary and that their overall perspectives were predisposed toward a multiple discipline perspective: "I teach, work, think . . . theatre is by definition interdisciplinary at all levels:" "As a scientist and student of the world, I think like an interdisciplinarian every day;" "all the time:" and, for one respondent, his interdisciplinary perspective dates to an earlier time in high school:

> . . . do just about anything. I find it difficult to only think from the perspective of only one discipline for at all moments multiple disciplines affect individuals, societies, and the world as a whole. As early as high school, I had the benefit of interdisciplinary education, for my history teachers didn't believe history was only a record of governmental and military actions but was the sum total of all human experiences over time.

Respondents in interviews also described their discipline as interdisciplinary. Tarter (2014), who teaches persuasion and legal communications, described how she sees interdisciplinarity in her teaching as creating bridges between disciplines:

> I developed one of the first legal communications courses in the nation which was kind of a bridge to law from communications. When we look at persuasion, again you are looking at everything from propaganda to politics to advertising. So I think my specific discipline has always been interdisciplinary and I have to say we steal from English, psychology, sociology, and they have stolen from us.

Saken (2014), a professor of astronomy, described in his interview how astronomy is interdisciplinary:

> The thing to remember is that astronomy is an interdisciplinary science by its very nature. It draws on physics, math, fluid dynamics, thermodynamics, and chemistry. Now we are talking about including astrobiology, and geology. There is hardly a field of science except for psychology although that is starting to be noticed; that too has an effect on what we see. So any good astronomer has to draw upon many disciplines and that is what I am used to doing.

The types of activities in which they engaged included problem solving, assigning a project to students meant to challenge their assumptions about current events, answer outcomes for FYS, plan learning activities that relied on more than one discipline and help students understand how the disciplines interact, and embrace an identity of teacher and facilitator of Critical Thinking.

Examples of activities outside faculty disciplines included attendance at lectures outside their area of expertise, pursuit of projects for funding of the university, teaching courses that are not discipline specific, and crossing disciplinary boundaries where integration of multiple disciplines are integrated; in addition, research for teaching resources outside their disciplines that inform their work and teach courses that are not discipline specific.

Faculty, in their interview responses, discussed ways in which they go beyond their disciplines to broaden their interdisciplinary perspectives. Four faculty use the internet to research topics, find course materials, identify websites, and locate readings for students in their classes. As described earlier, Sias (2014) searches for multimedia presentations that will interest students and frequently chooses programming heard on *National Public Radio.* Tarter (2014) referred to opportunities to explore other disciplines as something she values about teaching FYS. “I think the biggest value is the lack of structure and the ability to explore so many different areas; and the ability to explore areas that would not naturally come into the discipline.”

The most frequent activity in which FYS faculty engaged was the extent to which they researched and evaluated texts for reading assignments. As described above, books covered a wide variety of interdisciplinary topics. Cartwright (2014), who teaches science education, chose *Success* as her course theme and selected a text that approached it from a perspective that was likely to connect with students:

> The book is *Mindset: A New Psychology of Success* by Carol Dweck [which is] about fixed and growth mindset. We think we are naturally good at some things so we are willing to take risks, we are willing to try things versus – 'my mom isn't good at math so I am not good at math' – so I avoid it. So, I thought about that [*Success*] as a course theme because I think students need exposure to these ideas – what they think they are good at and they think they are not good at – can be moldable and changeable.

Gooding (2014), a communications studies professor and Director of the Regents Bachelor of Arts Program, was initially appointed to teach speaking and writing courses in the integrated science and technology program. He consulted online resources such as the *New York Times* and *TED Talks* to provide students with resources on current events. But in support of his course theme *Memory*, he selected a book by Daniel Schacter, the author of several books on memory:

> The theme for my FYS is memory and memory from a number of different perspectives – collective memory, cultural memory, and also the psychological perspective. I try to blend other perspectives of personal memory – how people remember things and why they remember things the way they do.

Discussion and Implications

This study examined faculty perceptions regarding their interdisciplinary curriculum development and teaching. Participants in the study held a unique position at Marshall University in that their primary responsibilities were first connected to their disciplinary specializations to which was added interdisciplinary teaching; specifically,

development and teaching of a First-Year Seminar course. The introduction of FYS in 2010 to the undergraduate general education course offerings coincided with a comprehensive reform of the undergraduate curriculum. One of the goals of the new plan was to include interdisciplinary coursework meant to underlie students' learning through completion of their degree programs. Although FYS was not the only new interdisciplinary-based course developed by faculty, it is unique in that faculty were expected to adopt a fully interdisciplinary perspective. While other interdisciplinary courses were designed based on faculty disciplinary specialties, FYS faculty were charged with developing courses in which multiple disciplines were equally represented. Also listed among the learning outcomes to be included in course design were critical thinking and problem-solving.

For higher education faculty, developing courses creates curriculum and generally, faculty teach the courses they created. Historically, the basis for creating courses has been the faculty's research and disciplinary specialization and usually as part of a cohesive program of study. Ultimately, courses fit into schemes that provide student learning in various fields of study and teaching provides transmittal of knowledge by faculty. The literature describes the long-standing traditions in higher education and their effects on faculty in their work as curriculum developers and teachers. These traditions characterize institutional policies that influence their work and that frame the organizational structures in which the faculty operate. These as well as broader issues connected to the historical development of ID and the role of faculty as disciplinary specialists have been examined by researchers. But few studies have described the faculty's perspective regarding the practicalities of their everyday work creating and

teaching interdisciplinary courses and what it means to do this inside higher education's traditional culture.

The study's research questions provided an overarching framework for the study from which the main themes developed – preparing, developing, teaching, and reflecting on an interdisciplinary studies course (i.e., the First-Year Seminar). These themes, around which the survey and interviews were organized, provided an outline of familiar topics that commonly characterize the everyday work of faculty. Within the context of the university, curriculum development and teaching are central to the mission of the institution and to this, FYS faculty provided significant contributions to Marshall's interdisciplinary initiatives. Therefore, overall findings for this study have implications for further interdisciplinary studies curriculum development and teaching not only at Marshall but also in other higher education institutions. While a number of the findings align with research presented in the literature review, the study contributes to scholarship specifically lacking in faculty perspectives about interdisciplinary curriculum development and teaching.

While interdisciplinarity within the broader context of the undergraduate curriculum has evolved, the work of faculty developing and teaching interdisciplinary courses such as the First-Year Seminar provided an example of creating interdisciplinarity through curriculum development and teaching. In her comprehensive guide for creating interdisciplinary campus cultures, Klein (2010) recommended that institutions begin interdisciplinary initiatives by identifying the level of interdisciplinarity on their campuses. Based on this criteria, Marshall's integration of interdisciplinary studies falls under Level II as "integrative cores and courses in general education and in

honors" (pg. 56). The significance of linking FYS to this criteria is in the idea that as a cornerstone in the core curriculum, interdisciplinarity became an important aspect of undergraduate education. Two factors contributed to creation of a significant part of these interdisciplinary initiatives – the enlistment of tenured faculty and their work in creating FYS courses. As a result, an institutional goal to establish interdisciplinary studies as part of the core curriculum was realized. Newell (2010) has reflected on this point, suggesting that "only interdisciplinary studies can integrate what insights the various disciplines have to offer into the most comprehensive understanding currently possible of any particular complex problem" (p. 367). He further observed that because general education's learning outcomes are central to all students' undergraduate experiences, knowledge and skills gained through interdisciplinary learning become valued by educators.

Significant issues related to situating interdisciplinarity inside higher education found in studies by Klein (2010) and Lattuca (2001) were among the findings in this study. They included: (1) Faculty were grounded in their disciplinary identities; (2) Faculty generally resistant to change were committed to the *status quo*; (3) Familiarity felt in disciplinarity was absent in ID teaching; (4) Faculty were attracted to the freedom and flexibility of IDS; (5) FYS planning resulted in multiple variations of the same course; and (6) Greater challenges were associated with ID teaching than in the discipline. Most importantly, faculty scholarship and teaching were based in their disciplinary specialties. Interdisciplinary teaching was added to FYS faculty teaching loads while they maintained their departmental affiliations and disciplinary identities. Depending on the faculty's perspective, some found it challenging to integrate their

disciplines with other disciplines while others brought an interdisciplinary perspective to their FYS work. Findings in the study describe a general approach taken by a number of faculty in response to the challenges of lacking interdisciplinary teaching expertise reflective of those expressed by Callanan (2004): "When I found myself engaging with this topic, one about which I received no formal training, I was forced to rely on my instincts as an intellectual rather than my knowledge as an expert" (p. 388).

Lattuca (2001) found that unfamiliarity and misunderstandings about interdisciplinary inquiry affected value placed on interdisciplinary scholarship and created disconnect with disciplines. On the one hand, colleagues in the disciplines demonstrated little value for the interdisciplinary work of fellow scholars. But, for a number of FYS faculty, they found support and encouragement in the community of interdisciplinary scholars created by the group of FYS instructors. Despite findings that demonstrate overall feelings of success by FYS teachers, yearly turnover in the group of faculty reflected larger issues found in the literature as affecting interdisciplinary teaching. Similar factors were cited in studies by Rich (2006) and Tagg (2012), which found that faculty commitment to maintaining the *status quo* is the primary motivation in resisting change. They perceive that any modifications in the structure of their work have potential for undermining achievements and rewards accrued towards promotion and tenure as well as recognition for contributions to the institution and value for their work. Faculty interpret any erosion of their institutional role as a loss and develop an aversion to change.

While parallel issues relating to interdisciplinary curriculum development and teaching found in the literature were among the findings in this study, new concerns were

expressed by FYS faculty directly related to their everyday interdisciplinary work. A major factor in their work was the challenge of keeping a balance between disciplinary and interdisciplinary teaching. Fundamentally, Marshall's FYS faculty experienced ID in a similar context as found in a study by Holley (2009b), who pointed out that absent from a fundamental understanding of interdisciplinarity were characteristics associated with the disciplines – an identifiable field of study, a body of knowledge, a community of scholars bound together by shared norms, values, and beliefs, and a specialized system of language and symbols. The importance of this was central to understanding the perspective from which faculty developed and taught their FYS courses. Because development of interdisciplinary courses was dependent on drawing faculty from across the colleges, they came from a wide variety of disciplines. In addition, they were experienced teachers with years of involvement in higher education.

Because of the faculty's overall depth of experience, they had backgrounds in curriculum development and teaching courses in their disciplines. The combination of past experiences and completion of the professional development course provided the basis for FYS instructors in designing and teaching their courses. They were encouraged to choose their own course topics, themes, learning activities, plus teaching and learning approaches in support of the university's student learning outcomes, critical thinking, and general education core. While the amount of freedom afforded them in developing and teaching FYS was attractive and inspired a number of the instructors, others desired more explicit guidance and expectations and for the longest serving FYS teachers, they felt a need for more frequent updates. The outcomes of a more flexible approach used in FYS teaching produced implications for ongoing development of course-based

interdisciplinary studies. For faculty trained as disciplinary specialists, they were given opportunities to develop interests beyond their own disciplines, they developed diverse examples of FYS courses supportive of the general education, and established the role of FYS in the core curriculum.

From the faculty perspective, unique challenges arose as a result of their FYS activities. Because the faculty were expected to engage perspectives from multiple disciplines from outside their areas of expertise, they spent more time in their FYS courses than in their other teaching to research information on new topics, to identify and review course resources, and to acquire greater knowledge in unfamiliar disciplines. Planning an FYS course also took more time. The familiar templates used in designing their discipline-based courses served as outlines but required them to make numerous adaptations unique to interdisciplinary courses. Stark (2000) found that teachers vary their course planning in differing disciplines. Therefore, the implication is that because faculty from varying disciplines have different approaches to course planning, their methods for planning interdisciplinary courses do not begin in the same way. The results produce multiple variations of the same course. From the perspectives of DeZure (2010) and Haynes (2002), they stress that there is no single method of interdisciplinary teaching: "Interdisciplinary teaching and learning," writes DeZure, "requires a host of powerful pedagogies to inspire and enable teachers and students to grapple effectively with the complexity of problems we face in the twenty-first century" (p. 384).

Another challenge was not enough time to do the work of developing and teaching a First-Year Seminar. This included creating ideas for engaging students, planning daily class activities, designing projects, evaluating student work, and record

keeping. The differences in the pace and flow of a regularly taught class in the discipline compared to those in an interdisciplinary course created uncertainties in the faculty's abilities, for example, to predict length of time needed for students to complete tasks or anticipate course outcomes. In addition, FYS required a shift from content-based teaching to a focus on process. For example, the diversity of learning activities, more project-based assignments, less lecturing, and a more student-centered approach in the classroom all contribute to change and new expectations.

Because of the demands put on faculty time and additional work associated with interdisciplinary studies courses, there are implications for considering faculty course loads when one or more FYS courses are included in their teaching schedules. Consideration may need to be directed at evaluating whether teaching a FYS is equal to teaching a course in a faculty member's discipline. While course design and planning are outcomes of the professional development course, the added amount of time required to prepare for teaching and student learning extends beyond the semester-long *FYS Institute.* Implications from the study suggest defining what constitutes reasonable expectations for FYS teaching, establishing load equivalencies that consider added time for interdisciplinary work, and creating faculty lines devoted to interdisciplinary teaching.

An important issue from a number of FYS faculty was the unexpected challenges of working with students who were new to the college experience. These students were primarily freshman who had recently transitioned from high school to college. In addition, FYS classes included small numbers of older students who began their university studies with a wide range of life experiences. For experienced higher education faculty whose teaching had most recently focused on upper division students in their

major courses, inexperienced students introduced unexpected demands on faculty to develop new classroom management strategies, to rethink expectations for students' study skills and learning abilities, and to provide orientation to the culture of higher education.

Summary of Findings and Implications

The previous sections have focused on elaborating the specific research questions that framed this study. In summary:

- FYS faculty at the time of the study were veteran teachers primarily from upper ranks of the university faculty and represented seven out of eight colleges and one undergraduate program.
- First-Year Seminar faculty perceived their role as integral to a university-wide initiative to establish interdisciplinarity as fundamental to the undergraduate students' experiences at Marshall University through their work as curriculum developers and teachers in which they created a cornerstone course in Core I of the general education component and maintained their departmental affiliations and disciplinary specializations while developing and teaching an interdisciplinary studies course.
- When FYS faculty designed their courses, they focused on learning activities and assignments that emphasized interdisciplinarity and that covered the university learning outcomes. They spent a greater amount of time researching and designing different types of projects focused on active learning that also had potential for high engagement of students in their classes.

- Processes instead of products were stressed in FYS classes in which students were expected to engage in critical thinking and problem solving (e.g. the core modes of thinking in FYS). From the faculty's perceptions, using this approach connected students to real-life experiences and other valuable learning, but it also created unforeseen challenges in working with students who were new to the university environment. In efforts to improve student learning outcomes, FYS instructors focused on strategies to provide students with opportunities to develop and expand their prior knowledge and skills.
- Completion of a professional development course, the *FYS Institute*, provided faculty with a basic set of course tools - a course template, common course expectations, and examples of strategies for Problem-Based Learning (PBL), and access to the online FYS resource *FYS Hub*. In addition, yearly updates and changes to the First-Year Seminar were incorporated into each semester's *Institute* for each new group of faculty. Experienced FYS instructors received the information through electronic notifications.
- The interdisciplinary backgrounds of the study's participants prior to completing the PD course became important to the faculty's interdisciplinary curriculum development and teaching. They described their backgrounds as based on former experiences using a multidisciplinary perspective or they characterized their disciplines as being interdisciplinary. No participant in the study had training or was a specialist in interdisciplinary curriculum or teaching.
- FYS faculty were more likely to consult a wide variety of multimedia, print, and digital resources for adoption as course materials that reflected course themes and

supported student learning. They were less likely to consult ID resources for their own use but did conduct searches to gain knowledge of unfamiliar disciplinary related course topics.

- The faculty perceived interdisciplinary teaching as opportunities to stretch the focus of their teaching beyond their disciplines and explore interdisciplinary course materials and readings. While they valued their work in identifying resources for potential to interest and engage students, FYS faculty reported that their efforts required an unusually large amount of time.
- Participants described unexpected challenges after teaching at least one semester of FYS that changed their initial perceptions of the course that included a greater difficulty in teaching FYS than had been anticipated, teaching primarily freshman required new classroom strategies, and the need for increased knowledge in unfamiliar disciplines.
- While some faculty described FYS-inspired changes in their disciplinary teaching, others reported no changes had occurred. Changes included integration of ID approaches and activities, new pedagogical ideas, and ID resources and course materials.

With the study's findings in mind, it bears suggesting that interdisciplinary studies at Marshall University exhibited characteristics that were both unique to the context of the institution and similar to many ID initiatives and programs described in a review of research on interdisciplinarity in higher education. Establishing ID based on existing institutional resources made the program unique primarily because it was based on the interests and expertise of faculty who did the work of developing and teaching a course

essential to the core curriculum – the First-Year Seminar. While perspectives of the faculty presented in this study highlighted issues related to their ID work at Marshall, larger concerns also impacted development of interdisciplinarity that situate the university's initiatives in a broader context.

Overall findings in this study have implications for the work of faculty as curriculum developers and teachers. Historically, this has been the primary role of higher education faculty and it has taken place inside traditional disciplinary structures. Integration of interdisciplinary studies, however, creates a ripple effect of changes that eventually impact the everyday work of the faculty. Therefore, the perspectives of faculty are important to consider in the overall scheme of interdisciplinary initiatives. At Marshall, this has meant integration of interdisciplinary studies into the undergraduate curriculum where it anchors the core curriculum.

Significant work by the faculty contributed to general education reform through creating FYS courses. As course-based ID development, the interdisciplinary course has become a model for a common course First-Year Seminar based on learning outcomes that support student success across their degree programs. Once faculty created a basic syllabus framework, they were free to develop course content, topics and themes, learning activities, and student projects. As a result, integration of interdisciplinary studies into a traditional higher education culture was driven by the work of faculty as curriculum developers and teachers; in particular, the work of faculty drawn to ID teaching and learning. Therefore, the perspectives of faculty who have developed and taught an interdisciplinary course (i.e., FYS) are important contributions to the literature on interdisciplinarity.

As the literature review revealed, scholarship on interdisciplinary studies follows along three broad themes: (1) the historical context and development of interdisciplinarity; (2) its place inside higher education's organizational structures; and (3), the role of faculty as discipline specialists, curriculum developers, and teachers. While the research examined a number of important issues related to interdisciplinary studies integration in higher education, studies did not address interdisciplinary studies integration from the faculty perspective; specifically, in their daily work to develop and teach interdisciplinary courses. This study, therefore, is pertinent to three key areas of the literature: (1) perspectives of disciplinary specialists who develop and teach a new course in support of the institution's interdisciplinary initiatives; (2) how faculty, as disciplinary specialists, navigate organizational change brought by interdisciplinary teaching; and, (3) faculty perspectives on adopting new teaching pedagogies and approaches to learning in support of critical thinking and integrative learning.

Historically, not all interdisciplinary learning occurred with the framework of degree programs. The development of area studies, cluster courses, or specialized courses provided the foundation for interdisciplinary teaching and learning in many institutions. According to Holley (2009b), ID often developed outside the framework of a program in an effort to create cohesive undergraduate curriculum with emphasis on integrative thinking and elements of interdisciplinarity.

A similar effort examined in this study, was the *First-Year Seminar*, an ID course created to anchor a new undergraduate general education curriculum. Existing university resources and the work of its faculty to develop and teach multiple sections of FYS supported the institution's interdisciplinary initiative. The perspectives of the faculty

provide insight into their daily responsibilities as curriculum developers and teachers; most importantly, the contributions of disciplinary specialists engaged in interdisciplinary integration which may be of interest to others developing IDS in general education.

A second theme in the literature explored the role of academic traditions and organizational change. As noted in a number of studies, resistance to change can be a barrier to ID integration. In this study, change in the undergraduate curriculum did not require institutional reorganization. Essentially, FYS became the cornerstone of the undergraduate curriculum and was one of two new courses added to the core. While the organization and its culture was less affected by interdisciplinary integration, FYS instructors managed significant amounts of change in their daily work. Perspectives of FYS faculty, therefore, may contribute to a better understanding of how they navigated changes in their teaching assignments while contributing to the larger context of ID at Marshall University.

The role of faculty as discipline specialists, curriculum developers, and teachers was examined in this study, specifically in their interdisciplinary work. The literature revealed that discipline-specific specializations provide the basis for design of the undergraduate curriculum. In research on faculty as curriculum developers, faculty were grounded in their disciplines and found it difficult to discuss disciplines outside their specializations. Findings in this study similarly found that participants were challenged to integrate their disciplines with other disciplines and spent time researching other disciplines. The perspectives of participants in this study may be of interest to others in higher education regarding the development and teaching of interdisciplinary courses regarding the strategies and methods they used in their interdisciplinary work.

The findings in this study also contribute to research that examined the growing awareness of new teaching pedagogies and approaches to learning. Participant responses generally reflected unfamiliarity with new pedagogies and approaches to learning described in the literature. Similarly, for example, Halx and Reybold (2005) found faculty perceive interdisciplinary learning necessary for critical thinking but it is not well understood from their perspective. In another study, Palmer and Zajonc (2010), cited that teaching routines based on disciplines and the way things have always been done for lack of interest in integrative learning. Because critical thinking and integrative thinking are core elements of FYS learning outcomes, the faculty's perspectives on how they included these core elements in their courses may be of interest to others looking to adopt new approaches to learning.

Finally, this study contributes to an emerging area of research that examines what faculty do in their teaching, their planning strategies, their beliefs and assumptions about teaching, and how they think about teaching. While numerous studies examined teaching from the perspective of traditional preparation for college teaching based in discipline specialization and through research activities, graduate school training, and adopting approaches observed through personal learning experiences, this study examined the perspectives of faculty who work outside their disciplines to develop curriculum and teach interdisciplinary courses. The findings in this study may be of value to higher education faculty interested in the interdisciplinary perspectives of FYS faculty and what they do in their teaching, their planning strategies, their beliefs and assumptions about teaching, and how they think about teaching an interdisciplinary course.

Recommendations for Further Research

This study was limited to the perspectives of faculty who taught the interdisciplinary course FYS at Marshall University. Although many of the findings in the study align with the broader context of ID in higher education, the initiatives at Marshall present interdisciplinary integration unique to the institution. Further study is recommended that would examine other course-based ID programs designed specifically as part of general education reform that includes core curriculum concepts. The idea at Marshall to create campus-wide interdisciplinarity through its general education requirements is not represented in the literature but presents a model for undergraduate curriculum reform through ID initiatives.

This study focused on the practice of interdisciplinarity related to Marshall University's initiatives to integrate interdisciplinary studies into the undergraduate core curriculum. While the body of literature on interdisciplinarity is extensive, faculty responses indicated unfamiliarity with the scholarship of interdisciplinarity. Based on participant responses to questions about faculty knowledge of interdisciplinarity, understanding its various forms (e.g. interdisciplinary, multidisciplinary, cross disciplinary, and transdisciplinary), and pedagogies associated with interdisciplinarity (e.g. inquiry-based, problem-based, integrative) further research is recommended that examines faculty perceptions about the significance of their knowledge about the field of interdisciplinarity and how this may inform their interdisciplinary work.

Professional development was key to establishing ID and was required of faculty who taught FYS. Research into professional development in higher education produced few studies compared with P-12 education. As Major and Palmer (2006) noted in their

study, professional development for school educators does not easily translate into higher education. This is especially important to consider if P-12 pedagogies and curricular concepts gain greater importance for higher education faculty.

Factors that emerged from the final narrative question on the faculty survey bear consideration for further research. An important aspect of FYS is critical thinking. This was not purposely overlooked in the study, but instead the extent to which faculty included critical thinking in their courses was allowed to emerge within their responses. Based on a number of narrative question responses that related to critical thinking together with participant interview responses, teaching and evaluating critical thinking is a major concern of FYS faculty. A study that examines critical thinking as it related to ID teaching and learning would be an important contribution to the literature on teaching and learning pedagogies.

A second factor that emerged from faculty responses needing further research related to perceptions that FYS is generally not valued by students and others in the university community. Because FYS faculty expressed their value for their interdisciplinary work, there is concern that the view is not held across the institution. The basis for concern stems from perceptions that at the level of importance the university has given to FYS and the amount of institutional resources committed to the initiative, they expect expressions of an equal value in return.

Final Thoughts

Integration of interdisciplinary teaching and learning in higher education has depended on the everyday work of faculty, many of whom have been disciplinary specialists. To better understand how they have navigated interdisciplinarity, this study

examined the perspectives of faculty whose contributions made it possible for interdisciplinary integration in Marshall University's undergraduate curriculum. While the faculty described a mix of successes and challenges, an unexpected perspective emerged that underscored the attraction of interdisciplinary work. Gilpin (2014) expressed the viewpoint well when she stated:

> I would underscore . . . about how enervating, how invigorating, life sustaining [ID] teaching is because you always get to be what drew you to this to begin with, and that was to be a student. You like to learn new things and you are not just teaching the same thing over and over again but approaching familiar territory with new perspectives, with new eyes. I think it's great.

Thinking and teaching like an interdisciplinarian is difficult, challenging, and at the same time, rewarding work. From the perspective of those who are not like minded, curriculum development and teaching is everyday work. But for those with an interdisciplinarian's perspective, the work feeds their desire to keep learning and in turn share what they have gained. The core of this idea is even more significant and has potential impact for higher education faculties faced with increasing change that challenges the traditions of their institutions' cultures and presents an important argument for considering the faculty point of view.

REFERENCES

American Association of Colleges and Universities (2009). *Trends and emerging practices in general education: Based on a survey among members of The Association of American Colleges and Universities.* Washington, D.C.: Hart Research Associates. Retrieved from: http://www.aacu.org/membership/documents/2009MemberSurvey_Part2.pdf

Association for Interdisciplinary Studies. (2014). Citations taken from http://wwwp.oakland.edu/ais/

Augsburg, T. (2005). *Becoming interdisciplinary: An introduction to interdisciplinary studies.* Dubuque, IA: Kendall Hunt Publishing.

Augsburg, T. (2006). Uncertain paths for interdisciplinary programs and their faculties: Critical stakes to claim. *Issues in Integrative Studies, 24,* 150-158.

Augsburg, T., & Henry, S. (2009). *The politics of interdisciplinary studies: Essays on transformations in American undergraduate programs.* Jefferson, NC: McFarland.

Bailes, S. (2002). Interdisciplinary curriculum design and instructional innovation: Notes on the social science program at San Francisco State University. In Haynes, C. (2002). *Innovations in interdisciplinary teaching.* Westport, CT: Oryx Press.

Baldridge National Quality Program. (2014). *Education Criteria for Performance Excellence.* National Institute for Standards and Technology. Retrieved from http://www.nist.gov/baldrige/index.cfm

Barnett, R., & Coate, K. (2004). *Engaging the curriculum in higher education*. Berkshire, Great Britain: McGraw-Hill Education.

Bastedo, M.N. (1999). Curriculum in higher education: The historical roots of contemporary issues. In P.G. Altbach, R.B. Birdahl, & P.J. Gumport (Eds.), *American higher education in the twenty-first century.* Baltimore, MD: The Johns Hopkins University Press.

Benjamin, R. (2007). Recreating the Faculty Role in University Governance. In J. C. Burke (Ed.), *Fixing the Fragmented University: Decentralization with Direction.* New York, NY: John Wiley & Sons.

Blanton, M.L., & Stylianou, D. (2009). Interpreting a community of practice perspective in discipline-specific professional development in higher education. *Innovative Higher Education*, *34*, 79-92.

Brint, S., Turk-Bicakci, L., Proctor, K., & Murphy, S.P. (2009). Expanding the social frame of knowledge: Interdisciplinary degree-granting fields in American colleges and universities. *The Review of Higher Education, 32*(2), 155-183.

Callanan, L. (2004). Defining expertise in the interdisciplinary classroom. *Pedagogy, 4*(3), 385-399.

Campbell, E., & Lassiter, L.E. (2015). *Doing ethnography today: Theories, methods, exercises.* Hoboken, NJ: John Wiley & Sons.

Core foundations ad hoc committee recommendation. (2013). Retrieved from http://www.marshall.edu/senate/CFAHC/SR-08-09-36R%20CFAHC.pdf

Cornwell, G.H., & Stoddard, E.W. (2001).Toward an interdisciplinary epistemology: Faculty culture and institutional change. In B.L. Smith. & J. McCann (Ed.). *Reinventing ourselves: Interdisciplinary education, collaborative learning and experimentation in higher education*. Bolton, MA: Anker Publishing.

Creswell, J.W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches.* Thousand Oaks, CA: Sage Publications.

DeZure, D. (2010). Interdisciplinary pedagogies in higher education. In R. Frodeman, J.T. Klein, C. Mitcham, & J.B. Holbrook (Eds.) *The Oxford handbook of interdisciplinarity.* New York, NY: Oxford University Press.

Dwek, C. (2007). *Mindset: The New Psychology of Success*. New York, NY: Ballantine Books.

Edwards, A.F. (1996). *Interdisciplinary undergraduate programs: A directory (2e).* Acton, MA: Copley Publishing.

Ellis, R.J. (2009). "Problems may cut across the borders": Why we cannot do without interdisciplinarity. In B. Chandrahoman & S. Fallows (Eds.) *Interdisciplinary learning and teaching in higher education: Theory and practice.* New York: Routledge.

Fink, A. (2003). *How to design survey studies*.Thousand Oaks, CA: Sage Publications.

Fiscella, J., Jacobsen, C.R., Klein, J.T., Seabury, M.B., Field, M., & Stowe, D. (2003). *Interdisciplinary studies in general education guidelines.* Oxford, OH: Association for Integrative Studies. http://wwwp.oakland.edu/ais/

Fiscella, J., & Kimmel, S. (1999). *Interdisciplinary education: A guide to resources.* New York, NY: The College Board.

Fraser, S.P., & Bosanquet, A.M. (2006). The curriculum? That's just a unit outline, isn't it? *Studies in Higher Education, 31*(3), 269-284.

Frodeman, R., Klein, J.T., Mitcham, C., & Holbrook, J.B. (Eds.) (2010). *The Oxford handbook of interdisciplinarity.* New York, NY: Oxford University Press.

Furst-Bowe, J.A., & Bauer, R.A. (2007). Application of the Baldridge Model for Innovation in higher education. *New Directions for Higher Education, 137*, 5-14.

FYS Hub (2015). Marshall University. Retrieved from http://www.marshall.edu/fys/first-year-seminar/faculty/

Gaff, J. (1995). Trends and innovations in general education reform. In C.F. Conrad & J.B. Haworth (Eds.). *Revisioning curriculum in higher education.* Needham Heights, MA: Simon & Schuster Custom Publishing.

Gaff, J. (1999). *General education: The changing agenda.* Washington, D.C.: Association of American Colleges and Universities.

Gallo, C. (2015). *Talk Like TED: The 9 Public-Speaking Secrets of the World's Top Minds.* New York, NY: St .Martin's Griffin.

General education: Critical thinking (Core I) courses info. (2013b). Retrieved from http://www.marshall.edu/gened/core-i-courses/

General education: Introducing the core curriculum. (2013a). Retrieved from http://www.marshall.edu/gened/introducing-the-core-curriculum/

Hart, J., & Mars, M. (2009). Joint appointment and the professoriate: Two houses but no home? *Innovative Higher Education, 34*(1), 19-32.

Hachtmann, F. (2010). The process of general education reform from a faculty perspective: A grounded theory approach. *The Journal of General Education, 61*(1), 16-38.

Halx, M.D., & Reybold, L.E. (2005). A pedagogy of force: Faculty perspectives of critical thinking capacity in undergraduate students. *The Journal of General Education, 54*(4), 293-315.

Haynes, C. (ed.) (2002). Laying a foundation for interdisciplinary teaching in *Innovations in interdisciplinary teaching.* Westport, CT: Oryx Press.

Henry, S. (2005). Disciplinary hegemony meets interdisciplinary ascendency: Can interdisciplinary/integrative studies survive, and if so, how? *Issues in Integrative Studies, 23*, 1-37.

Hesse-Biber, S.N. (2010). *Mixed methods research: Merging theory with practice.* New York, NY: The Guilford Press.

Holley, K. (2009a). Interdisciplinary strategies as transformative change in higher education. *Innovative Higher Education, 34*(5), 331-344.

Holley, K. (2009b). Understanding interdisciplinary challenges and opportunities. *ASHE Higher Education Report*, *35*(2), 11-30. Retrieved from EBSCO.

Holley, K. (2012). Disciplines, interdisciplinarity, and the culture of higher education. *Conference on Interdisciplinary Teaching and Learning*, 13-16.

Hursh, B., Haas, P., & Moore, M. (1983). An interdisciplinary model to implement general education. *Issues in Integrative Studies, 8*, 133-150.

Jacobs, A.J. (2010). *My Life as an Experiment: One Man's Humble Quest to Improve Himself by Living as a Woman, Becoming George Washington, Telling No Lies, and Other Radical Tests*. New York, NY: Simon & Schuster.

Justice, C., Rice, J., Dale, R., & Hudspeth, B. (2009). Inquiry-based learning in higher education: Administrators' perspectives on integrating inquiry pedagogy into curriculum. *Higher Education, 58,* 841-855.

Klein, J.T. (2010). *Creating interdisciplinary campuses cultures: A model for strength and sustainability.* San Francisco, CA: Jossey-Bass.

Klein, J.T. (1996). *Crossing boundaries: Knowledge, disciplinarities, and interdisciplinarities.* Charlottesville: University Press of Virginia

.

Klein, J.T. (1985). The interdisciplinary concept: Past, present, and future. In L. Levin, & I. Lind (Eds.) *Interdisciplinarity revisited: Re-assessing the concept in the light of institutional experience.* Stockholm: Organization for Economic Cooperation and Development, Swedish Board of Universities and Colleges.

Klein, J.T. (2001). The interdisciplinary variable: Then and now. In B.L. Smith & J. McCann (Eds.). (2001). *Reinventing ourselves: Interdisciplinary education, collaborative learning and experimentation in higher education*. Bolton, MA: Anker Publishing.

Klein, J.T. (1990). *Interdisciplinarity: History, theory, and practice.* Detroit, MI: Wayne State University Press.

Klein, J.T. (1999). *Mapping interdisciplinary studies: The academy in transition.* Washington, DC: Association of American Colleges and Universities.

Klein, J.T. (2006, Mar/Apr). Resources for interdisciplinary studies. *Change*, 52-58.

Klein, J.T. (2013). The state of the field: Institutionalization of interdisciplinarity. *Issues in Interdisciplinary Studies, 31*, 66-74.

Klein, J.T., & Newell, W.H. (1996). Advancing interdisciplinary studies. In W.H. Newell (Ed.) (1998). *Interdisciplinarity: Essays from the literature.* New York, NY: College Entrance Examination Board, 3-22.

Klein, J.T., & Newell, W.H. (2002). Strategies for using interdisciplinary resources across K-16. *Issues in Integrative Studies, 20*, 139-160.

Klein, J., & Newell, W. (1998). Advancing Interdisciplinary Studies. In W. Newell (Ed.). *Interdisciplinarity: Essays from the literature*. New York, NY: College Board.

Kliewer, J.R. (2001). The innovative colleges and universities of the 1960's and 1970's: Lessons from six alternative institutions. In B.L. Smith & J. McCann (Eds.) *Reinventing ourselves: Interdisciplinary education, collaborative learning and experimentation in higher education*. Bolton, MA: Anker Publishing.

Knight, D.B., Lattuca, L.R., Kimball, E.W., & Reason, R.D. (2012). Understanding interdisciplinarity: Curricular and organizational features of undergraduate interdisciplinary programs. *Innovative Higher Education, 38*, 143-158.

Kockelmans, J. (ed.) (1979). *Interdisciplinarity and higher education.* University Park, Pennsylvania State University Press.

Lattuca, L. (2001). *Creating interdisciplinarity: Interdisciplinary research and teaching among college and university faculty.* Nashville, TN: Vanderbilt University Press.

Major, C.H., & Palmer, B. (2006). Reshaping teaching and learning: The transformation of faculty pedagogical content knowledge. *Higher Education, 51*, 619-647.

McAlpine, L., Weston, C., Berthiaume, D., & Fairbank-Roch, G. (2006). How do instructors explain their thinking when planning and teaching. *Higher Education, 51*(1), 125-155.

McDougall, C. (2011). *Born To Run - A hidden tribe, superathletes, and the greatest race the world has never seen.* New York, NY: Random House.

McKeachie, W.J. (1990). Research on college teaching: The historical background. *Journal of Educational Psychology, 82*(2), 189-200.

McNeal, A.P., & Weaver, F.S. (2001). Interdisciplinary education at Hampshire College: Bringing people together around ideas in Smith, B.L. & McCann, J. (Ed.). (2001). *Reinventing ourselves: Interdisciplinary education, collaborative learning and experimentation in higher education*. Bolton, MA: Anker Publishing.

Miller, C.A. (2010). Policy challenges and university reform in R. Frodeman, J.T. Klein, C. Mitcham & J.B. Holbrook (Eds.) *The Oxford handbook of interdisciplinarity.* New York, NY: Oxford University Press.

Morgan, D. (2008). Emergent design. In *The Sage Encyclopedia of Qualitative Research Methods.* Thousand Oaks, CA: Sage Publications, Inc.

Nelson-Laird, T.F., & Garver, A. (2010). The effect of teaching general education courses on deep approach to learning: How disciplinary context matters. *Research in Higher Education, 51(3),* 248-265.

Nelson, C.E., & Robinson, J.M. (2006). The scholarship of teaching and learning and change in higher education. In *The realities of change in higher education.* New York, NY: Routledge

Newell, W.H. (1986). *Interdisciplinary undergraduate programs: A directory.* Oxford, OH: Association for Integrative Studies.

Newell, W.H. (1992). Academic disciplines and undergraduate interdisciplinary education: Lessons from the School of Interdisciplinary Studies at Miami University, Ohio. *European Journal of Education*, *27*(3), 211-23.

Newell, W.H. (1994). Designing interdisciplinary courses in Klein, J.T., & Doty, W.G. (1994). *Interdisciplinary studies today*, San Francisco: Jossey-Bass Publishers.

Newell, W.H. (1998). *Interdisciplinarity: Essays from the literature.* New York: College Entrance Examination Board.

Newell, W.H. (2001). A theory of interdisciplinary studies. *Issues in Integrative Studies, 19,* 1-25.

Newell, W.H. (2010). Undergraduate general education in Frodeman, R., Klein, J.T., Mitcham, C., & Holbrook, J.B. (eds.) (2010). *The Oxford handbook of interdisciplinarity.* New York: Oxford University Press.

Newell, W.H. (2013). The state of the field: Interdisciplinary theory. *Issues in Interdisciplinary Studies, 31,* 22-43.

Newell, W.H., & Green, W.J. (1982). Defining and teaching interdisciplinary studies in Newell, W.H. (ed.) (1998). *Interdisciplinarity: Essays from the literature.* New York: College Entrance Examination Board.

Newell, W.H., & Klein, J.T. (1996). Interdisciplinary studies into the twenty-first century. *The Journal of General Education, 45*(1), 152-169.

Nosich, G.M., Diestler, S., & Facione, P. (2011). *Critical Thinking in College.* Huntington, WV: Marshall University.

Office of Economic Cooperation and Development. (1972). *Interdisciplinarity: Problems of teaching and research in universities.* Washington, D.C.

Palmer, P., & Zajonc, A. (2010). *The heart of higher education.* San Francisco: Jossey-Bass.

Pfirman, S., & Martin, P.S. (2010). Facilitating interdisciplinary scholars in R. Frodeman, J.T. Klein, C. Mitcham & J.B. Holbrook (Eds.) *The Oxford handbook of interdisciplinarity.* New York: Oxford University Press.

Professional Development (2014). Marshall University Center for Teaching and Learning. Retrieved from http://www.marshall.edu/catl/facultydevelopment/ProgramsAndEvents/CoreCurriculum.aspx

Ratey, J.J., & Hagerman, E. (2013). *Spark: The Revolutionary New Science of Exercise and the Brain.* New York: Little, Brown.

Repko, A.F. (2008). *Interdisciplinary research: Theory and process.* Thousand Oaks, CA: Sage Publications.

Repko, A.F. (2009). Transforming an experimental innovation into a sustainable academic program at the University of Texas-Arlington. In T. Augsburg & S. Henry *The politics of interdisciplinary studies: Essays on transformations in American undergraduate programs.* Jefferson, NC: McFarland.

Repko, A.F., Newell, W.H., & Szostak, R. (2012). *Case studies in interdisciplinary research.* Thousand Oaks, CA: Sage Publications, Inc.

Repko, A.F., & Szostak, R. (2014). *Introduction to interdisciplinary studies.* Thousand Oaks, CA: Sage Publications, Inc.

Rich, D. (2006). Academic leadership and the structuring of higher education. *New Directions for Higher Education, 134*, 37-48.

Slaughter, S. (1997). Class, race and the construction of post-secondary curricula in the United States: Social movement, professionalization and political economic theories of curricular change. *Journal of Curriculum Studies, 29*(1), 1-30.

Smith, B.L., & McCann, J. (Eds.) (2001). *Reinventing ourselves: Interdisciplinary education, collaborative learning and experimentation in higher education*. Bolton, MA: Anker Publishing.

Smith, P. (2004). Curricular transformation. *Change, 36*(1), 28-35.

Stark, J.S. (2000). Planning introductory college courses: Content, context, and form. *Instructional Science, 28*, 413-438.

Stark, J.S., & Lattuca, L.R. (1997a). Defining curriculum: An academic plan in Lattuca, L., Haworth, J.G., & Conrad, C.F. (2005). *College and university curriculum: Developing and cultivating programs of study that enhance student learning.* Boston: Pearson Custom Publishing.

Stark, J.S., & Lattuca, L.R. (1997b). Recurring debates about the college curriculum in Lattuca, L., Haworth, J.G., & Conrad, C.F. (2005). *College and university curriculum: Developing and cultivating programs of study that enhance student learning.* Boston: Pearson Custom Publishing.

Stes, A., Coertjens, L., & Van Petegem, P. (2010). Instructional development for teachers in higher education: Impact on teaching approach. *Higher Education, 60,* 187-204.

Stone, T., Bollar, K., & Harbor, J. (2009). Launching interdisciplinary programs as college signature areas: An example. *Innovations in Higher Education, 34*(5), 321-329.

Tagg, J. (2012). Why does the faculty resist change? *Change, 44*(1), 6-15.

Terkel, S. (1997). *Working: People Talk About What They Do All Day and How They Feel About What They Do.* New York: New Press.

Tough, P. (2009). *Whatever It Takes: Geoffrey Canada's Quest to Change Harlem and America.* New York: Mariner Books.

Wingate, U. (2007). A framework for transition: Supporting 'Learning to Learn' in higher education. *Higher Education Quarterly, 61*(3), 391-405.

APPENDICES

Appendix A: FYS Faculty Survey

The purpose of this survey is to gather data from FYS faculty about their experiences in developing and teaching the *First-Year Seminar*. It is divided into sections that ask for FYS related information – **(A) Course Development, (B) Teaching,** and **(C) Outcomes** –followed by **(D) Background and Demographic Information** and **(E)** two **Narrative** questions. The *FYS Faculty Survey* will take approximately 10 – 12 minutes to complete. At the end, you will be asked about your interest to be interviewed for this study. Thank you for your time and willingness to share your experiences!

A. FYS Course Development

1. I know about and consult resources that specifically support my interdisciplinary teaching.

- o Strongly disagree
- o Disagree
- o Agree
- o Strongly agree
- o No opinion

2. I primarily depend on my own experiences to support my interdisciplinary teaching.

- o Strongly disagree
- o Disagree
- o Agree
- o Strongly agree
- o No opinion

3. I had to learn how to think like an interdisciplinarian to plan and teach FYS.

- o Strongly disagree
- o Disagree
- o Agree
- o Strongly agree
- o No opinion

4. I plan my FYS course in the same way that I plan other courses that I teach.

- o Strongly disagree
- o Disagree
- o Agree
- o Strongly agree
- o No opinion

5. I spend more time preparing the content for my FYS course than I do in my other courses.

- o Strongly disagree
- o Disagree

- Agree
- Strongly agree
- No opinion

6. I spend more time thinking through and planning my daily FYS teaching than I do in my other courses.

- Strongly disagree
- Disagree
- Agree
- Strongly agree
- No opinion

7. I am successful integrating my discipline with other disciplines.

- Strongly disagree
- Disagree
- Agree
- Strongly agree
- No opinion

B. Teaching FYS

8. I felt comfortable teaching from an interdisciplinary perspective before teaching FYS.

- Strongly disagree
- Disagree
- Agree
- Strongly agree
- No opinion

9. I feel that teaching an interdisciplinary course holds the same value for me as teaching a course in my area of specialization.

- Strongly disagree
- Disagree
- Agree
- Strongly agree
- No opinion

10. Teaching FYS makes me rethink my teaching strategies.

- Strongly disagree
- Disagree
- Agree
- Strongly agree
- No opinion

11. In my FYS course, I use teaching methods that are new to me.

- Strongly disagree
- Disagree
- Agree
- Strongly agree
- No opinion

12. I am able to answer student questions from an interdisciplinary perspective.

- Strongly disagree
- Disagree
- Agree
- Strongly agree
- No opinion

13. I am successful in teaching Critical Thinking in my FYS course.

- Strongly disagree
- Disagree
- Agree
- Strongly agree
- No opinion

14. I often make changes to my daily teaching plan while I am teaching.

- Strongly disagree
- Disagree
- Agree
- Strongly agree
- No opinion

C. Outcomes from Development and Teaching of FYS

15. I reflect more often on my FYS teaching compared to my other courses.

- Strongly disagree
- Disagree
- Agree
- Strongly agree
- No opinion

16. I feel that teaching an interdisciplinary course enhances my growth as an educator just as much as teaching a course in my specialization.

- Strongly disagree
- Disagree
- Agree

- Strongly agree
- No opinion

17. My ideas about teaching changed after my FYS experiences.

- Strongly disagree
- Disagree
- Agree
- Strongly agree
- No opinion

18. I get personal satisfaction from teaching an interdisciplinary course.

- Strongly disagree
- Disagree
- Agree
- Strongly agree
- No opinion

19. Because of my FYS experiences, I use interdisciplinary teaching strategies in my other courses.

- Strongly disagree
- Disagree
- Agree
- Strongly agree
- No opinion

20. My interdisciplinary work in developing and teaching FYS contributes to the university's interdisciplinary initiatives.

- Strongly disagree
- Disagree
- Agree
- Strongly agree
- No opinion

D. Background and Demographic Information

21. My graduate studies prepared me to teach an interdisciplinary course.

- Strongly disagree
- Disagree
- Agree
- Strongly agree
- No opinion

22. Incentives have influenced my decision to teach FYS.

- Strongly disagree
- Disagree
- Agree
- Strongly agree
- No opinion

23. Teaching an interdisciplinary course enhances my ability to earn promotion.

- Strongly disagree
- Disagree
- Agree
- Strongly agree
- No opinion

24. My interdisciplinary work is valued by my colleagues.

- Strongly disagree
- Disagree
- Agree
- Strongly agree
- No opinion

25. My interdisciplinary work is valued by my Department Chair.

- Strongly disagree
- Disagree
- Agree
- Strongly agree
- No opinion

26. My interdisciplinary work is valued by the university administration.

- Strongly disagree
- Disagree
- Agree
- Strongly agree
- No opinion

27. I completed the *FYS Institute* in ____.

- Spring 2010
- Spring 2011
- Summer 2010
- Spring 2012
- Spring 2013
- Fall 2013

28. The best interdisciplinary description for my FYS course is ____.

- Crossdisciplinary
- Multidisciplinary
- Transdisciplinary
- Interdisciplinary
- Not sure

29. When I teach FYS, it is counted as _____.

- Regular teaching load
- Teaching overload
- Release time

30. At the end of the academic year 2013-2014, I had taught in higher education for _____.

- 1 to 5 years
- 6 to 10 years
- 11 to 15 years
- 16 to 20 years
- 20 to 25 years
- More than 25 years

31. My academic rank at the end of the academic year 2013-2014 was ____.

- Adjunct faculty
- Instructor
- Assistant Professor
- Associate Professor
- Full Professor

32. I teach primarily in the _____.

- College of Business
- College of Education and Professional Development
- College of Arts and Media
- College of Health Professions
- College of Information Technology and Engineering
- College of Liberal Arts
- College of Science
- University College
- School of Pharmacy

33. My primary teaching specialization is _____.

34. My secondary teaching specialization (other than FYS) is _____.

E. Narrative Questions

35. Please complete the following statement:

I think like an interdisciplinarian when I

36. Please add comments or briefly discuss a topic you feel is relevant to this study that has not been covered in this survey.

Study Participation

The goal of this study is to gain better understandings of interdisciplinary teaching from the perspectives of the faculty. Your insights about teaching FYS, therefore, are important and valuable contributions to this research. If you wish to be interviewed for the study, please send an email to Kay Lawson at this address: lawsonk@marshall.edu.

Thank you for taking time to complete this survey!

Appendix B: Interview Questions

The following is a list interview questions that align with my study's *Research Questions* and items on the *FYS Faculty Survey.* Within my emergent study design, they form the basis of interview questions that will be used during Phase Two of data collection. Results from the *FYS Faculty Survey* could indicate need to amend these questions or for additional questions.

FYS Course Development

1. Please describe the types of interdisciplinary resources you use in preparing your course.

2. Compared to planning your other courses, what is the same in the process of planning your FYS course? What is different?

3. What types of activities do you include in your course in support of interdisciplinary teaching and learning perspectives? (ex. student assignments, textbook readings, supplemental readings, in-class activities, projects, writing activities, student presentations, technology integration)

Teaching FYS

4. Please describe the ways in which you integrate your discipline with other disciplines.

5. Based on your choice of teaching and learning methods, please describe the ways in which you use them (E.g. Problem-based Learning (PBL), Inquiry-based Learning (IBL), Interdisciplinary-based Learning (IDL).

6. What is the most difficult challenge in teaching FYS?

Outcomes from Development and Teaching of FYS

7. Please describe how developing and teaching an interdisciplinary course has affected your other teaching.

8. What do you value about interdisciplinary curriculum development and teaching at Marshall University?

9. How have your ideas about interdisciplinary curriculum development and teaching changed since your involvement with the FYS program?

Background and Context

10. How do you define and describe the interdisciplinary approach in your FYS course? (e.g. crossdisciplinary, multidisciplinary, transdisciplinary, interdisciplinary)

11. Please describe your background in interdisciplinarity prior to completing the *FYS Institute* and teaching FYS.

Closing the Interview

12. Is there anything regarding your interdisciplinary work that you would like to add before we conclude this interview?

Appendix C: Institutional Review Board Approval

Office of Research Integrity
Institutional Review Board
401 11th St., Suite 1300
Huntington, WV 25701

FWA 00002704

IRB1 #00002205
IRB2 #00003206

October 8, 2014

Eric Lassiter, PhD
Graduate Humanities Program

RE: IRBNet ID# 552127-1
At: Marshall University Institutional Review Board #2 (Social/Behavioral)

Dear Dr. Lassiter:

Protocol Title:	[552127-1] Interdisciplinary Studies Integration from the Faculty Point of View	
Expiration Date:	October 8, 2015	
Site Location:	MUGC	
Submission Type:	New Project	APPROVED
Review Type:	Exempt Review	

In accordance with 45CFR46.101(b)(2), the above study and informed consent were granted Exempted approval today by the Marshall University Institutional Review Board #2 (Social/Behavioral) Designee for the period of 12 months. The approval will expire October 8, 2015. A continuing review request for this study must be submitted no later than 30 days prior to the expiration date.

This study is for student Kay Lawson.

If you have any questions, please contact the Marshall University Institutional Review Board #2 (Social/ Behavioral) Coordinator Bruce Day, ThD, CIP at 304-696-4303 or day50@marshall.edu. Please include your study title and reference number in all correspondence with this office.

Appendix D: Online Anonymous Survey Consent

Marshall University IRB

Approved on:	10/08/14
Expires on:	10/08/15
Study number:	552127

Dear FYS Faculty,

You are invited to participate in a research project entitled *Interdisciplinary Studies Integration from the Faculty Point of View* designed to examine the perspectives of Marshall University First-Year Seminar Faculty about their experiences developing and teaching FYS. The study is being conducted by Luke Eric Lassiter and Kay Lawson from Marshall University and has been approved by the Marshall University Institutional Review Board (IRB). This research is being conducted as part of dissertation requirements for Kay Lawson.

This survey is comprised primarily of Likert-scale response items and will take approximately 15 minutes to complete. Your answers are anonymous and will not be connected to you in any way. There are no known risks involved with this study. Participation is completely voluntary and there will be no penalty or loss of benefits if you choose to not participate in this research study or to withdraw. You may choose to not answer any question by simply leaving it blank. At the end of the survey you will be asked to indicate your interest in being interviewed as part of the study. To express your availability, please send an email to Kay Lawson at lawsonk@marshall.edu. Once you complete the survey you can delete your browsing history for added anonymity. Completing the online survey indicates your consent for use of the answers you supply. This survey is completely voluntary and you may decline to participate. If you have any questions about the study or would like a summary of the results, you may contact Dr. Eric Lassiter at 304-746-1923 or lassiter@marshall.edu, or Kay Lawson at 304-633-6721 or lawsonk@marshall.edu

If you have any questions concerning your rights as a research participant you may contact the Marshall University Office of Research Integrity at (304) 696-4303.

By completing this survey you are also confirming that you are 18 years of age or older.

Please print this page for your records.

If you choose to participate in the study you will find the survey at [SurveyMonkeySurveyURL]. Please complete it by [DATE].

Sincerely,

Kay Lawson

CoIinvestigator

Appendix E: Informed Consent to Participate in a Research Study

Interdisciplinary Studies from the Faculty Point of View

Luke Eric Lassiter, PhD, Dissertation Advisor and Principal Investigator
Kay D. Lawson, Doctoral Candidate and Co-Investigator

MARSHALL UNIVERSITY

Introduction
You are invited to be in a research study. Research studies are designed to gain scientific knowledge that may help other people in the future. You may or may not have receive any benefit from being part of the study. Your participation is voluntary. Please take time to make your decision, and ask your research investigator or research staff to explain any words or information that you do not understand.

Why is this study being done?
The purpose of this study is to explore faculty perspectives about developing and teaching an interdisciplinary course.

How many people will take part in the study?
About 75 people will take part in this study. A total of 80 subjects are the most that would be able to enter the study. Only Marshall University faculty who teach the First-Year Seminar(FYS) will be invited to answer the survey. Between 10 and 15 in-person interviews will be conducted with FYS faculty who volunteer to be interviewed. Additional interviews could include stakeholders associated with FYS (ex. FYS Coordinator, Director of the Center for Teaching and Learning)

What is involved in the research study?
All FYS faculty will be invited to participate by answering the *FYS Faculty Survey*, an online anonymous survey that will take about 15 minutes to answer. Interviews of FYS faulty volunteers will be conducted in a place of their choosing. The 30- to 45-minute interviews will be recorded for later transcription. A limited number of follow-up interviews may be needed.

Participant's Initials _____

Marshall University IRB
Approved on: 10/08/14
Expires on: 10/08/15
Study number: 552127

How long will you be in the study?
You will be in the study for about one hour. You can decide to stop participating at any time. If you decide to stop participating in the study we encourage you to talk to the study investigator or study staff as soon as possible. The study investigator may stop you from taking part in this study at any time if he/she believes it is in your best interest; if you do not follow the study rules; or if the study is stopped.

What are the risks of the study?
There may be risks:

- There is a potential for a breach in confidentiality.

It is possible you would be identified as a result of information provided in the study. If you so choose, you will be provided opportunity to read and approve transcripts of your interview. There may be other side effects that we cannot predict. You should tell the researchers if any of these risks bother or worry you.

Are there benefits to taking part in the study?
If you agree to take part in this study, there may or may not be direct benefit to you. We hope the information learned from this study will benefit other people in the future. The benefits of participating in this study may be:

- Contributions to others interested in teaching interdisciplinary courses.

What about confidentiality?
We will do our best to make sure that your personal information is kept confidential. However, we cannot guarantee absolute confidentiality. Federal law says we must keep your study records private. Nevertheless, under unforeseen and rare circumstances, we may be required by law to University IRB, Office of Research Integrity (ORI) and the federal Office of Human Research Protection (OHRP). This is to make sure that we are protecting your rights and your safety.

What are the costs of taking part in this study?
There are no costs to you for taking part in this study. All the study costs, including any studytests, supplies, and procedures related directly to the study, will be paid for by the study.

Participant's Initials _____

What are your rights as a research study participant?
Taking part in this study is voluntary. You may choose not to take part or you may leave the study at any time. Refusing to participate or leaving the study will not result in any penalty or loss of benefits to which you are entitled. If you decide to stop participating in the study we encourage you to talk to the investigators or study staff first.

Who do you call if you have questions or problems?
For questions about the study or in the event of a research-related injury, contact the study investigator, Dr. Eric Lassiter at 304-746-1923 or Kay Lawson at 304-633-6721. You should also call the investigator if you have a concern or complaint about the research.

For questions about your rights as a research participant, contact the Marshall University IRB#2
Chairman, Dr. Stephen Cooper or ORI at 304-696-4303. You may also call this number if:

- You have concerns or complaints about the research
- The research staff cannot be reached.
- You want to talk to someone other than the research staff.
-

You will be given a signed and dated copy of this consent form.

SIGNATURES

Subject Name (Printed)

_____ _____
Subject Signature Dat

Person Obtaining Consent (Printed)

_____ _____
Person Obtaining Consent Signature Date

Appendix F: Email Invitation

Greetings:

My name is Kay Lawson and I am a doctoral student at Marshall University conducting a research study. I am writing to ask for your help in a study that will examine the perspectives of Marshall University First-Year Seminar Faculty. You will receive an online survey that will ask you for information regarding your experiences in developing and teaching FYS. Your insights will be very important to the success of this study.

Your answers will be confidential and not connected to you in any way. The survey is completely voluntary and you may decline to participate. If you have any questions concerning your rights as a research participant you may contact the Marshall University Office of Research Integrity at (304) 696-4303. Please answer all questions as honestly and accurately as possible. Please complete the online survey by [DATE]. The survey will take approximately 15 minutes to complete. Go to the following website to complete the *FYS Faculty Survey.* [Survey Monkey URL]

If you have technical problems with the survey, please contact me at lawsonk@marshall.edu. Completing the online survey indicates your consent for use of the answers you supply.

If you have any questions about the study or would like a summary of the results, you may contact Dr. Eric Lassiter at 304-746-1923 or lassiter@marshall.edu, or me at 304-633-6721 or lawsonk@marshall.edu

Please accept my gratitude in advance for your cooperation and timely participation in this research study.

Kay L.

Appendix G: Survey Follow-up Email

Greetings:

A few weeks ago, you received the email below regarding completion of a survey for the study *Interdisciplinary Studies from the Faculty Perspective*. If you have yet to complete the *FYS Faculty Survey* I encourage you to click on the link provided. Your perspectives on developing and teaching an FYS course are important and valuable to the study.

Thank you for supporting this work. I am most appreciative of your time and interest!

Kay Lawson

MUGC Doctoral Student

Appendix H: Second Survey Follow-up Email

Greetings:

A few weeks ago, you received the email below regarding completion of a survey for the study *Interdisciplinary Studies from the Faculty Perspective*. If you have yet to complete the *FYS Faculty Survey* I encourage you to click on the link provided. Your perspectives on developing and teaching an FYS course are important and valuable to the study.

Thank you for supporting this work. I am most appreciative of your time and interest!

Kay Lawson

MUGC Doctoral Student

Appendix I: Follow-up Email Invitation to be Interviewed

Dear _____,

You recently received a request to complete the *FYS Faculty Survey* and if you have responded I would like to thank you for taking the time to share your perspectives. As part of the dissertation study *Interdisciplinary Studies from the Faculty Perspective*, I am interested in interviewing a diverse group of Marshall's FYS faculty that includes those who currently teach as well as others who have not continued teaching the course. In addition, the perspectives of faculty from a variety of disciplines are important to my study.

Would you consider being interviewed about your experiences developing and teaching an FYS Seminar? An interview takes between 30 and 45 minutes at a place and time convenient for you.

I hope to hear from you soon.

Sincerely,

Kay Lawson, Doctoral Candidate

Appendix J: Research Question Matrix

	Survey Items				Interview Questions			
Research Questions	Prep	Plan	Teach	Reflect	Prep	Plan	Teach	Reflect
1. How do faculty perceive their role integrating interdisciplinarity into Marshall University's undergraduate curriculum?	22, 23, 24	7	8	9, 20		3		8
2. How have faculty worked through a new assignment to teach an interdisciplinary course – beginning with their recruitment to teach FYS, followed by completion of the *FYS Institute* (professional development course), through teaching the course, and continued teaching in their disciplines?	1,2, 3, 21	4	11, 12		1, 10, 11		5	
3. How have faculty perceptions of interdisciplinarity at Marshall University been changed by involvement in activities related to the FYS?				16,17 18,19 25,26			6	9
4. What has changed in the faculty's discipline-specific course preparation and teaching after their interdisciplinary and FYS experiences?		5,6,	10, 13, 14	15		2	4	7