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A qualitative examination of connections between learner-centered teaching and past significant learning experiences

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Abstract: Learner-centered teaching is a collection of instructional practices that shift the emphasis of courses from the instructors' goals and methods of delivery to the knowledge and skills that the students develop. This study examined potential commonalities between features of learner-centered teaching and the past significant learning experiences of current faculty. A phenomenological analysis of written essays revealed eight dominant themes: 1) Student responsibility for learning, 2) Learning through direct experience or example, 3) Responsive instructors, 4) Difficult activities that took time, 5) Connections to previous knowledge and experiences, 6) Direct research experience, 7) Challenging initial ideas and assumptions, and 8) Rich in content. These themes are discussed in terms of their connections to features of learner-centered teaching and potential implications for educators.

Keywords: Learner-centered teaching, significant learning experiences, faculty reflections, student learning, active learning.

Learner-centered teaching is a paradigm of challenge. It challenges students to become active agents in their learning. Students must face complex problems in order to acquire new knowledge and skills, while also developing new ways of thinking and acting. Learner-centered teaching challenges instructors to release some of their control over the class and what happens. They must care about more than just content; treat student errors as learning opportunities; and change their role from distributors of knowledge to facilitators of learning. Learner-centered teaching challenges both students and instructors (as well as administrative and discipline stakeholders) to carefully consider the kinds of professionals/people that graduates should be, and the optimal practices for achieving these desired outcomes (e.g., Weimer, 2002).

These challenges can be daunting to educators and students who are new to learner-centered teaching because they appear to be dramatically different from the methods of education that most individuals have experienced before (i.e., traditional, instructor-centered models). But, are they significantly different from all previous educational experiences or just certain common ones (such as lecture)? As Barr and Tagg (1993) stated, "… not all elements of the new paradigm are contrary to corresponding elements of the old: the new includes many elements of the old within its larger domain of possibilities" (p. 15). The primary objective of the present study was to examine commonalities and differences between features of learner-centered teaching and past learning experiences that individuals identified as particularly meaningful and valuable to their development (i.e., significant learning experiences). To do so, applied features of learner-centered teaching, defined as the characteristics that are directly experienced by educators and students (as opposed to the theoretical constructs behind them),

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were compared with themes derived from faculty reflections on their past significant learning experiences.

A. Applied Features of Learner-centered Teaching.

Learner-centered teaching includes a number of different methods (such as problem-based learning, service learning, and team learning) that are based on research in cognitive development and effective teaching practices. This literature review focuses on three applied features of learner-centered teaching: a constructive basis for learning, the acquisition of knowledge and skills that are purposeful and transferable, and instructor changes that occur when adopting learner-centered approaches.

Learner-centered teaching emphasizes knowledge and skills that are constructed by students, rather than directed by instructors. Based on the collective writings of educators and psychologists such as Bruner, Dewey, Piaget, and Vygotsky, constructivism posits that learning is created by individuals and groups as the result of their current knowledge/thoughts/beliefs interacting with new experiences (e.g., Hinchliffe, 2011; Richardson, 1997; Savery & Duffy, 1995). In other words, new knowledge and skills are created as learners attempt to make sense of incongruences between their current knowledge and new experiences. Constructivism does not presuppose that learning cannot occur from direct transmission (e.g., attending a lecture). Rather, it suggests that such learning is not as complex, meaningful, or enduring as knowledge that is constructed by the individual. As a result, learner-centered teaching emphasizes learning activities and experiences in which instructors facilitate, rather than dictate, students' construction of knowledge.

A second applied feature of learner-centered teaching is that the knowledge and skills that are acquired/constructed are purposeful, relevant, and transferable. The terms "surface" and "deep" describe different types of knowledge and skills, as well as the approaches that students and faculty take toward learning (e.g., Marton & Säljö, 1976; Rhem, 1995). Surface learning describes the acquisition and recall of facts from experiences. The knowledge achieved here is considered surface because there is little beyond identification and recall that students can do with it. Facts learned while watching Jeopardy or playing Trivial Pursuit are examples of surface knowledge. Deep learning also includes the acquisition of information, but emphasizes students' abilities to apply these ideas to new and varied contexts. Perkins (2008) described two types of deep learning/knowledge, performative and proactive. Performative knowledge addresses students' abilities to use their current knowledge (including surface learning) to solve complex and atypical problems. Proactive knowledge goes further by applying current knowledge in wholly novel contexts.

The notions of surface and deep learning/knowledge are also reflected in Bloom's taxonomy (1956). Developed specifically to assist teachers/instructors with educational objectives, this taxonomy identified six levels of cognitive functioning. They are (in order from simple to complex) knowledge, comprehension, application, analysis, synthesis, and evaluation. The knowledge, comprehension, and application levels appear to be reflections of surface learning, while the remaining levels address deep learning. Although Bloom's taxonomy has been criticized and modified over the years (e.g., Marzano & Kendall, 2007), it endures within learner-centered teaching because it identifies multiple aspects of knowledge and their applications to student development.

Weimer (2002) provided a detailed description of a third applied feature of learner centered teaching; the changes that occur when an instructor moves from a traditional to learner-centered approach. These include changes to the balance of power, the function of content, the role of the teacher, the responsibility for learning, and the purpose and process of evaluation (see Table 1). These five changes reflect the dominant aspects of learner-centered teaching as experienced by educators and students, and as presented in the literature (although Weimer's terms are not used consistently across authors).

Table 1. Weimer's (2002) list of changes that occur between traditional, instructor-centered and learner-centered teaching models.

Change	**Traditional, Instructor-centered Models**	**Learner-centered Models**
The balance of power	Instructors design courses with no student input and are in charge of everything.	Instructors and students work together to design and implement the course.
The function of content	Content is the primary force driving the course because it provides the foundation upon which skills can be built.	Content is a tool to develop a knowledge base, new ways of thinking, and self-awareness of learning.
The role of the teacher	Knowledge and skills are directly passed from the teacher to the students.	Students develop knowledge and skills via discovery; indirectly from the teacher.
The responsibility for learning	Rules and regulations are developed by the instructor to direct student learning.	Course design accentuates student learning and students' roles in the process.
The purpose and process of evaluation	The measurement of student progress to date.	Assessment is directed at improving instruction and providing students additional learning opportunities.

The balance of power. In traditional, instructor-centered classrooms, all of the decisions about the course (including the course goals, learning experiences, assignments, assessments, and topics discussed) are developed and implemented by the instructor. In a learner-centered classroom, the design of the course is developed through collaboration between the instructor and students. Learner-centered instructors do not abdicate all of the decision making to their students. Rather, they include the students as colleagues within the development process. In shifting the balance of power, learner-centered instructors are attempting to increase student engagement (as students now become part of the process), and facilitate their path towards constructing their knowledge and becoming independent learners (see also Doyle, 2008).

The function of content. Content is one of the primary forces in traditional teaching. Because disciplines are consistently adding new content to their fields, instructor-centered courses are typically designed to cover as much content as possible. This restricts instructors from a) going into much depth about the content and how it can be used, and b) allowing students to explore and apply the content. As a result, their students focus on surface-level knowledge of the content, often memorizing the information and forgetting it shortly after the experience is over. In learner-centered teaching, content is only one aspect of courses. One example of this is Fink's (2008) taxonomy of significant learning. This taxonomy is built around six aspects of course design that would purportedly result in learning that is significant, lasting,

and valued later in life. In other words, deep learning. The categories within this taxonomy were: foundational knowledge (including content), application, integration, the human dimension, caring about one's own learning, and learning how to learn. Thus, content is not forgotten or ignored in learner-centered teaching. Rather, it is placed within a larger context by using content to motivate learning in the other categories and vice versa. For example, students within a learner-centered class might be given an application problem that is somewhat outside their current knowledge. After doing some initial work on the problem, they could then be directed toward a source of content (e.g., a book or article) as an aid to solving the problem. As a result, the students would not only be exposed to the content but learn it within a meaningful context. They also learn how to use informative sources to solve problems.

The role of the teacher. In the traditional classroom, the role of the instructor is that of the knowing professional who dispenses her/his knowledge directly to the students. This is shown through methods such as lectures that describe new and complicated topics, stories from their past relevant experiences, and summaries of the material that is most relevant to examinations. In learner-centered teaching, instructors provide the architecture for learning but do not directly state all of content to be learned. Instead, they design class activities that help students discover the important information. As a result, students learn more from the experience and each other than directly from the teacher. For example, rather than telling students about the speed of sound and having them solve equations on the topic, an instructor may have them measure and calculate the speed of sound for themselves using an oscilloscope and tape measure (Stoll, 2008). To paraphrase Alison King's (1993) often cited article title, adapting a learner-centered approach changes an instructor, "from sage on the stage to guide on the side."

The responsibility for learning. Weimer (2002) points out that in response to students who are often ill prepared for college education, many faculty have developed strict rules and guidelines. Course syllabi are typically the place where such regulations are listed, and a good illustration of how learner-centered classrooms emphasize the responsibility differently. The majority of syllabi focus on information about the instructor, descriptions of the course and its objectives, the topics to be addressed, and grading policy (Doolittle & Siudzinski; 2010; Eberly, Newton, & Wiggins, 2001; Garavalia, Hummel, Wiley, & Huitt; 1999). Instead of focusing on rules and regulations, the syllabi from learning-centered courses are designed as a "spring-board for the course experience" (Eberly et al., p.68). These syllabi establish the class environment as stimulating and collaborative, emphasize what will be done to facilitate student learning and who is responsible for the actions that take place, and are developed with student input (e.g., Bain, 2004; O'Brien, Millis, & Cohen, 2008). By doing so, learner-centered syllabi demonstrate from the start of a course that the primary responsibility for learning belongs to the students and that the faculty member is there to facilitate the process.

The purpose and process of evaluation. The changes discussed thus far have emphasized the instructor and students. Weimer's (2002) final change focuses on the purpose and process of evaluation. Evaluation is a critical part of the teaching process because it identifies if learning has taken place and, if so, what types of learning occurred. The primary purpose of evaluation in traditional classrooms is as a measure of achievement to date. It is typically summative; in that once the evaluation task has been completed there are no opportunities to show further learning (except, perhaps, from a cumulative evaluation at the end of the course). Evaluations in learner-centered classrooms are both formative and summative (e.g., Black & Wiliam, 2009; Fink, 2003; Rushton, 2005; Yorke, 2003). Formative evaluations differ from summative ones because their purposes are a) to assess current knowledge and skills in order to improving learning, while b)

providing additional opportunities for student learning. Feedback is an important part of formative evaluation. It extends beyond the identification of correct and incorrect responses to address the lines of thought that lead to errors and promote learning. As Bain (2004) stated, "the primary goal [of this type of assessment] is to help students learn to think about their own thinking so they can use the standards of the discipline or profession to recognize shortcomings and correct their reasoning as they go (p. 160)."

B. Significant Learning Experiences and the Present Study.

In his 2003 book on designing college courses, L. Dee Fink emphasized *Creating Significant Learning Experiences*. He described significant learning experiences as an engaged, high-energy process that results in meaningful and lasting change that has value in students' lives. Although Fink included detailed instructions for creating learner-centered courses aimed at providing significant learning experiences, he did not report any data on whether or not such lasting experiences occurred. He is not alone. Although the scholarship of teaching and learning literature includes a large number of qualitative, quantitative, mixed-methods, survey, and experiential research in support of learner-centered teaching (e.g., Black, 1993; Hake, 1998; Lambert & McCombs, 1997; Prince, 2004; Weimer, 2006), very little research exists on the long-term effects of learner-centered teaching (i.e., years after the learning experience). Despite this, significant learning experiences do occur, as evidenced by instructors and students who can easily recall past learning experiences that were engaging and lead to meaningful and lasting change.

The primary research objective of the present study is to determine if there are commonalities between features of learner-centered teaching and past significant learning experiences. If so, what are they and what differences exist? This is a retrospective, exploratory study. No a priori predictions were made as to which features of learner-centered teaching would connect with individuals' past significant learning experiences and which would not.

I. Method.

The method of investigation was that of phenomenological research, specifically psychological phenomenology (e.g., Creswell, 1998). This form of qualitative research examines the experiences of multiple people in regards to a particular event or phenomenon (Creswell, 2011; Miles & Huberman, 1994; Moustakas, 1994). In this investigation, the individuals were twenty-four faculty members and administrators in the discipline of communication sciences and disorders. The events/phenomena were their past significant learning experiences. In general, the procedures of phenomenology involve identifying the phenomenon and individuals who have experienced it, collecting data from the individuals about their experience, identifying individual idea statements and grouping them into codes and themes, and reflecting on the meanings of the experience.

A. Participants.

Demographic information was available, via self-report, for 22 of the 24 participants. The participants included 16 faculty members, eight administrators, and two clinical instructors/supervisors (participants were allowed to select more than one category). They were

from 15 different states in the United States and one was from New Zealand. Their college-level teaching experiences ranged from 2 to 40 years (median = 15) and their typical teaching load within a 9-month school year was from 0 to 10 courses (median = 4). The programs that they worked in graduated an estimated 6 to 400 undergraduate (median = 30) and 12 to 65 master's students (median = 20) per year. Information on the gender or ages of the participants was not collected (feminine pronouns will be used below when referring to specific participants).

B. Data Collection.

All of the participants were self-selected attendees at a presentation during the 2010 Council on Academic Programs in Communication Sciences and Disorders Annual Convention titled *Everything I need to Know About Teaching I Learned From Speech-Language Therapy* (Brackenbury & Shaughnessy, 2010). The stated goals of this session were to 1) introduce attendees to aspects of learner-centered teaching, 2) model and demonstrate learner-centered teaching, and 3) entice attendees to learn more about and increase their use of learner-centered teaching. The session began by stating these goals and providing background information about the presenters. The attendees were then briefly introduced to the idea that many aspects of learner-centered teaching are rooted in past experiences (although no specific features of learner-centered teaching had yet been addressed).

Next, the attendees were directed to take ten minutes and write an essay about a significant learning experience from their own college education. They were given sheets of paper and instructed to:

> Identify an experience through which you really learned the heck out of something (either a class, an experience within a class, or a clinic/research event). What was it? How did this experience improve you (knowledge, skills, insight, caring, ability to learn…)? What did the instructor do to facilitate your learning? Why does this experience stand out over all of the others?

The session then focused on five features of client-centered therapy. After each feature was introduced, the attendees were instructed to write about if/how the feature related to the significant learning experience (see Brackenbury, 2011). The session concluded with one of the presenters sharing her results from engaging in this same process, a description of how the method of the presentation demonstrated aspects of learner-centered teaching, and suggested references for further learning. Of the approximately 80 people who attended the session, 24 turned in a signed consent form and written essay.

C. Analysis.

The data analysis followed procedures for psychological phenomenology as outlined by Creswell (1998, 2011). It began with the author and two graduate research assistants identifying their own thoughts, experiences, and biases on the subject of learner-centered teaching and past significant learning experiences. The purpose of this was for each member of the research team to identify and limit the potential effects of their own bias on the analysis and interpretation (i.e., bracketing). The author was the developer and principal investigator of the study. He was one of the co-authors of the conference presentation where the data were collected. At the time of the data collection, he had been a certified speech-language pathologist for 19 years and taught at the university level for nine years. He had used client-based therapy throughout his clinical work and

had transitioned his teaching from the traditional model to learning-centered approximately four years earlier. He was well read on learner-centered teaching, but did not directly use either the general literature on the scholarship of teaching and learning or the references cited above during the analysis process. At the outset of the study, he had suspected that there were some connections between past significant learning experiences and aspects of learner-centered teaching (based on his own college experiences), and was curious to examine which features did and did not relate. The two graduate students were first-year master's students in communication sciences and disorders. They had both experienced aspects of learner-centered teaching during their undergraduate educations, but were not familiar with its literature. They were given the handout from the conference session and discussed it with the author once, before the analysis process. They reported that they could envision connections between past significant learning experiences and learner-centered teaching, but were unsure what those connections might be.

In the second step of the analysis, the author and research assistants inputted the participants' responses into a spreadsheet. The responses were typed in their original form, with adjustments made only for spelling and minor grammatical errors. Questions about responses that were illegible or difficult to understand were resolved through discussion between the research team members. Once all of the responses were entered, the author read through the entire spreadsheet and double-checked it with the written essays to make sure that all of the entries were accurate and comprehensible.

Next, each participant's essay was separated into individual ideas, which were then sorted into codes and themes. Each member of the research team, working separately, divided the responses into individual ideas and placed each idea in its own spreadsheet cell (i.e. horizontalization of the data). Every idea was then considered for the potential code it represented and copied into another spreadsheet, organized by theme. Thus, the themes were derived from the data themselves and not any previously articulated decisions. Once completed, each member of the research team shared their codes and themes (along with the idea statements within them) with the other members of the team. A dialogue process was then used to reach consensus on the final set of themes.

As with other forms of research, phenomenological investigations are concerned with the credibility and transferability of their findings. Of particular concern are the potential negative influences of bias from the examiners and the degree to which the information presented represents the actual experiences of the participants (Creswell, 2011; Maxwell, 2005; Miles & Huberman, 1994). Credibility and transferability were established in a number of ways, including the above outlined procedures of bracketing, horizontalization, and triangulation during the code/theme development. In addition, having the participants write their own descriptions minimized potential interferences between their thoughts and reflections and the data analyzed. The median length of the participants' descriptions of their significant learning experiences was 169 words (with a range of 59 to 459). Thus, the 10 minutes they were given to write appears to have been sufficient for the participants to reflect and describe their experiences. Because they held onto their original essays throughout the presentation, the participants were able to make revisions at any time during the session (although they were not instructed to do so). Visual inspection of the written essays and the flow of ideas within them suggest that few such changes were made.

II. Results.

The participants wrote about a number of different types of significant learning experiences. Some presented aspects of design for an entire course. These included courses that were based on direct "hands on" experiences, discussions, factual information, research experiences, research evidence, self-direction, service experiences, and student accountability. Other participants focused on specific activities within a class, such as case presentations, clinical experiences, designing their own final examination, and interpersonal interactions. Research was a third topic that was addressed. Participants also wrote about their master's thesis, doctoral dissertation, and research projects that were part of other courses. The other experiences described included direct clinical work, a workshop attended after graduating, and studying with other students.

The research team identified eight themes within the participants' descriptions of their past significant learning experiences. Table 2 presents a summary list of the themes, along with a sample statement for each one. Each theme is described in detail below. In both the table and text, the themes are presented in order from those with the greatest number of supporting idea statements to those with the fewest idea statements. It is important to note that the number of supporting idea statements is not considered a measure of a theme's importance. Themes with many idea statements may, for example, reflect common, cursory thoughts; while themes with few idea statements may reflect concepts that are innovative and deep.

A. Theme I: Student Responsibility for Learning.

The participants included many statements that identified themselves as active agents in their learning. These occurred in a variety of activities, including identifying a researcher and following their "question trail" back in the literature, self advising, creating case studies, designing and conducting research, developing a final assessment activity, and teaching their fellow students. Their descriptions of these activities included action words such as "back-track/reanalyze," "choose," "connect," "control," "create," "develop," "dig," "discover", "engage," "experience," "identify," and "learn."

Although this theme focuses on students' responsibility for their own learning, instructors were reported to have had important roles in this process. One participant stated, "My professor did very little, yet her "minimal" teaching was significant in my learning. She allowed me to be in control of my own learning. She was supportive and strived as a guide." Another said,

> He [the instructor] required each of us to be the expert at one reading/book each; to write a short summary for him, present the summary to the class and prepare discussion topics… He simultaneously honored our experience and assumed that we would be responsible.

In addition to describing their role in the learning process, some of the participants also made statements regarding the importance of these experiences. For example, one participant reported, "This advising method helped me to become independent and in time [lead me] to what I desired out of my schooling and how I wished to change." Another wrote, "I felt empowered like I could make a difference in the world. I didn't feel like a student. I felt like a professional and I acted like a professional." A third wrote, "As a student, I did "more" than what I thought my professor expected. Hence, I expect more of my students. When given the opportunity to construct their own knowledge they always go above and beyond my expectations."

Table 2. The 8 themes identified from the participants' reflections on their past significant learning experiences and sample statements of them.

Theme	Sample Statement
I. Student Responsibility for Learning.	My professor did very little, yet her "minimal" teaching was significant in my learning. She allowed me to be in control of my own learning. She was supportive and strived as a guide.
II. Learning through direct experience or example.	This activity gave me hands-on experience with preschool children. It required me to apply my classroom-based knowledge of child language development to preschoolers. It improved my knowledge of the course content and my skills of directing activities with children.
III. Responsive Instructors.	The instructor provided guidance, engaged in conversation allowing me to openly share what I had learned (or thought I learned), and asked thoughtful questions to further my understanding and learning.
IV. Difficult activities that took time.	It was frustrating in a way because there were no "right" or simple answers and there were numerous ways to get to the conclusion.
V. Connections to previous knowledge and experiences.	I learned to figure out relationships of existing knowledge to what I was doing and figure out how it fit or did not fit into my research.
VI. Direct research experience.	Reading the literature and interpreting the data in novel ways piqued my interest and enhanced my confidence for research.
VII. Challenging initial ideas and assumptions.	The learning style by Dr. V was confrontational, debating each premise, sometimes caused frustration, but by the end of each class, we had the satisfaction of knowing that we had learned something meaningful, or we needed to dig a little deeper to find the answer.
VIII. Rich in Content.	I was in this course (which really could've been an Intro to speech-language-pathology course) where I couldn't just BS my way through. There were facts, for the first time, not just opinions (even learned opinions). There were answers, not just suppositions and points of view, and I was enamored in it.

B. Theme II: Learning Through Direct Experience or Example.

The participants described a number of experiences in which they were directly involved in a professional setting. These included clinical rotations, hands-on experiences with preschoolers, a treatment workshop, a brain dissection lab, a conference workshop, research, volunteering at a homeless shelter, and taking a class as an adult. These experiences were described as "focused," "hands-on," "intense," "meaningful," and offering an "invaluable perspective."

Numerous lessons were reported from these experiences. Some related to clinical management and improving understanding of course materials, such as "I learned two things that day, appreciation of client motivation and never give a kid something you have to take back without warning him first" and "It improved my knowledge of the course content and my skills of directing activities with children." Other experiences increased the participants' understanding of communication disorders, "[The instructor] taught us that day, better than anything we read in our text, what a fluency disorder can do to the person who has it." Along with increased clinical understanding, one participant wrote about how the experience changed her self-image.

> I loved constructing this assignment. I could be creative. I could do "more" than complete an assignment. I could make a difference by volunteering my time. I felt really good about myself as a learner, but more importantly as a human being. I felt connected to something larger than myself.

C. Theme III: Responsive Instructors.

As reported above, some of the comments made regarding student responsibility for learning included remarks about the instructor. Along with these were a number of other comments directed specifically at the instructor and his/her actions. Specific instructor activities that were mentioned included case studies, lectures, Socratic dialogue, stating and challenging assumptions, student created assignments/assessments, and two-minute quizzes. Across activities, the instructors were described as "accessible, encouraging, and responsive" and "reflective, even-handed, non-judgmental, but always organized, logical, goal-directed, serious and building momentum toward deep understanding and knowledge." They "provided guidance, engaged in conversation allowing me to openly share what I had learned (or thought I learned), and asked thoughtful questions to further my understanding and learning." The abilities to reason with students and make "great connections" were also listed. One participant described her instructor and his impact on the experience as,

> He was able to assess our learning based on our ability to apply and make sense of the abstract concepts within the framework of our institution. Feedback was seldom about right and wrong. Grades were irrelevant. It was about untangling concepts and we could keep trying until we had our own aha moment.

D. Theme IV: Difficult Activities That Took Time.

High levels of difficulty and significant amounts of time on task were described throughout the participants' significant learning experiences. Course features that were identified along with this theme included "a very large, very intimidating text," "extensive reading," and presentations that were scrutinized "until the presenter could justify the reason why that approach had, or had not, been successful." One participant summarized her experience by saying that the class "was like taking a trip through unknown and mysterious territories."

Along with descriptions of difficulty, some of the participants also commented on the amount of time they spent on the research. For example, one participant stated, "I spent hundreds of hours analyzing this data set. When I started I had never looked at a spectrogram. By the end I could almost identify the word just by looking at the screen." Another participant said, "I worked harder on this project than any other assignment in my undergraduate career. Yet, it was the most enjoyable project I completed across my studies." Finally, one participant described the benefits of having spent time on the task, while also expressing concerns about not having had as much time as she wanted: "[I] felt I could absorb anything that I read, if I could only dedicate the time to do it."

E. Theme V: Connections to Previous Knowledge and Experiences.

One of the common benefits described was being able to see connections between ideas and information within the experience and prior knowledge. Some of the connections were reported within a course, as shown by the statement "… each class period he would ask for us to relate about our previous cases." Other connections were made between clinical and classroom experiences, such as "It required me to apply my classroom-based knowledge of child language development to preschoolers." Still others, connected research and prior experiences, "I learned

to figure out relationships of existing knowledge to what I was doing and figure out how it fit or did not fit into my research."

F. Theme VI: Direct Research Experience.

As shown by the quotes in the previous themes, research was a common activity within the significant learning experiences. Three types of research were discussed. The first was research within a class; which included creating literature reviews of prior research, developing and refuting points of view based on the literature, and designing and implementing small experiments. The other two types of research experiences discussed were master's theses and doctoral dissertations. In both of these experiences the participants talked about developing research questions, analyzing data, having to "back-track and re-analyze data files when I learned something new." The stated benefits of these research experiences included increased understanding of the connection between research questions and methodology, increased abilities to absorb new information, and enhancing confidence for doing more research.

Some of the faculty members discussed how their instructor / research advisors facilitated their learning. For example, one faculty described an instructor who

> provided guidance, engaged in conversation allowing me to openly share what I had learned (or thought I learned), & asked thoughtful questions to further my understanding & learning. This experience stands out because I was actively engaged in my own learning.

Another faculty stated, "My mentor would ask probing questions and continually bring new research articles into the mix. After I became accustomed to this process, it was natural to enter into conversation with my mentor about my observations in the data set."

G. Theme VII: Challenging Initial Ideas and Assumptions.

Some of the significant learning experiences described contexts in which the participants' initial ideas and assumptions were directly challenged. One case reported on an instructor who

> was confrontational, debating each premise, sometimes causing frustration, but by the end of each class, we had the satisfaction of knowing that we had learned something meaningful, or we needed to dig a little deeper to find the answer. This approach probably would not be tolerated by students of today, but it rewarded good thinking and case building/management skills.

In another experience, the instructor would spend the first half of the class laying out a body of research that lead to a logical conclusion.

> After the break, he went through some same and new research that systematically pulled the rug out from under our beliefs…The process pulled us in. We reasoned along with the instructor. [It] remains the prime example of logical reason and learning in my background.

H. Theme VIII: Rich in Content.

Most of the comments that were made about content were related to developing connections between content and aspects of learning (see Themes V and VII). Two of the participants discussed content richness as central features of their significant learning experiences. In one

case, the participant had previously been a high achieving English literature major who perceived that field to be over-reliant on opinions. Her description of her first course in communication sciences and disorders included the following.

> There were facts, for the first time not just opinions (even learned opinions). There were answers, not just suppositions and points of view, and I was enamored in it…Ever since that experience, I crave content myself and I try to make sure there is a great amount of content in all the classes I teach.

The other participant who directly wrote about content was unhappy with a discussion-based course because the bulk of the knowledge did not come from the instructor, there was not as much content as she was expecting, and she felt that she needed more structure. She summarized her comments by saying,

> Now I think that course was probably problematic because as a service learner I needed more structure to help me grapple with how to handle content as well as more would-be content to handle. Content-to-handle was probably there in the class but seemed less clear to me because I expected it to come in a particular format; a detailed set of readings [or] a textbook. In fact on reflection, this sense of having rules for how to handle content and ideas about where to find that content are enduring concern for me as a teacher and for my students. What I learned the heck out of was about my own learning.

III. Discussion.

This investigation examined potential connections between features of learner-centered teaching and past significant learning experiences. Current university faculty members and administrators in the discipline of communication sciences and disorders wrote short essays about a past college-level experience where they "really learned the heck out of something." The participants wrote about a variety of experiences, from individual classroom assignments, to whole courses, to research and clinical experiences.

A phenomenological analysis revealed eight recurring themes within these experiences: Student Responsibility for Learning, Learning Through Direct Experience or Examples, Responsive Instructors, Difficult Activities That Took Time, Connections to Previous Knowledge and Experiences, Direct Research Experiences, Challenging Initial Ideas and Assumptions, and Rich in Content.

A. Comparisons with Applied Features of Learner-centered Teaching.

The primary research questions addressed in this study were: Are there commonalities between features of learner-centered teaching and past significant learning experiences? And, if so, what are they and what differences exist? These questions can now be answered by comparing the eight themes found in this study with the applied features of learner-centered outlined earlier.

There appear to be many direct connections between the applied methods of learner-centered teaching and the eight themes identified in this study. For example, the constructivist nature of learner-centered teaching promotes learning that is created by individuals and groups, as the result of their current knowledge/thoughts/beliefs interacting with new experiences. This intersection was demonstrated by the participants through the themes of Connections to Previous Knowledge and Experiences, and Challenging Initial Ideas and Assumptions. The themes of

Student Responsibility for Learning and Learning Through Direct Experience or Examples may also be reflective of constructivism, by allowing the participants to have had some ownership of their development and providing direct professional experiences.

Learner-centered teaching's goal of deep, performative, and proactive knowledge also appears to connect with the significant learning experiences. The participants' comments suggested that the many complexities that come with difficult activities, especially those that provide direct professional experiences and examples (such as research), prompted them to deeply consider the content and how it could be applied to a variety of problems. Likewise, the challenges to their initial ideas and assumptions made them "dig a little deeper to find the answer."

Weimer's (2002) list of changes that occur when an instructor moves from a traditional to learner-centered approach provided another framework for comparison. The themes identified in this study appear to directly reflect almost all of these changes. For example, learner-centered teaching changes the balance of power from the teacher only to a shared responsibility among the teacher and students. The theme of student responsibility for learning addressed this through comments about how the participants were allowed to develop and/or select specific assignments and assessments, research topics, and advising. The participants reported that having some say in their classroom experience was empowering. It allowed them to think and do more, and helped them to feel what it is like to be a professional. Likewise, statements within the themes of Responsive Instructors and learning through direct experience described faculty who included student input as part of the design of the educational experiences.

The function of content also appeared to have a direct connection with the significant learning experiences, although there were important differences within comments made regarding content. Most of these statements supported learner-centered teaching's use of content as a tool for developing the students' knowledge, skills, and self-awareness. These centered around the experiences enlightening prior content knowledge, causing reconsideration of prior content knowledge, and/or requiring the acquisition of new content knowledge. Similar sentiments were also expressed in the themes of connections to previous knowledge and experiences, and challenging initial ideas and assumptions. In other words, the participants showed an appreciation for deep learning, through the application of content to new and varied situations. Two participants wrote specifically about experiences in which they had wanted more content. Even in these cases, their comments were directed towards content that was relevant and would have helped them learn more, as opposed to wanting more content in order to learn more facts.

The role of the instructor in learner-centered teaching is to facilitate the students' development of knowledge and skills. Comments within the theme of Responsive Instructors demonstrated this feature. The participants, for example, described teachers who "provided guidance", allowed open sharing of student learning, and focused on student conceptual development.

Along with changing the balance of power, learner-centered teaching creates a greater sense of student responsibility for learning. Although observed across many of the themes, this feature was demonstrated the most prominently within Student Responsibility for Learning. The participants described themselves as being actively involved in their experiences. They described their learning as intentional and purposeful. They saw this as helping them to go beyond what they would have before and to become independent learners.

Weimer's (2002) fifth change with learner-centered teaching, the purpose and process of evaluation, was the feature of her list that was not evident as a theme. Only two participants made direct comments about the purpose and process of evaluation. One reported that she was given the freedom in a course on manual communication (e.g., sign language and communication boards) to design her own final exam experience. The other described her instructor's contribution to her learning by stating that, "Feedback, was seldom about right and wrong. Grades were irrelevant. It was about untangling concepts and we could keep trying until we had our own aha moment." It is unclear why more of the participants did not comment on the evaluation components of their experiences. It may be that the evaluation part of their experience was a) not important to them because they were focused on their own learning, b) typical of other courses, c) unmemorable, or d) simply not a part of the experience that they thought to include in their descriptions (as their instructions did not identify specific aspects of the features to write about).

Taken together, the themes identified in this study support a connection between applied features of learner-centered teaching and past significant learning experiences. These connections, however, should be considered as preliminary for a number of reasons. First, the data were based on the participants' recollections of events that occurred multiple years in the past (in some cases decades later). Their memories may have been influenced by their other experiences that have occurred since then, including encounters with scholarly teaching. Second, the participants had self-selected to attend the conference session on teaching and learning. Although features of learner-centered teaching had not yet been addressed in the session, these may have been faculty who were primed to think in this direction. Third, because all of the participants were within the same discipline, they may have been prone to think in terms of learner-centered teaching. This is not likely to be the case, however, because learner-centered teaching is not the dominant teaching method being used in the discipline (Brackenbury, Folkins, & Ginsberg, 2011) and the discipline's research on it is developing, but not substantial. In addition, potential connections between client-centered therapy and learner-centered teaching had not been previously discussed (either within the published literature or previous conference presentations), suggesting that the participants were not highly predisposed to make these associations. Finally, the author and research assistants were all predisposed, to varying degrees, to consider connections between past significant learning experiences and learner-centered teaching. Given the procedures taken to address issues of credibility and transferability, however, these potential confounders do not appear to have had a significant negative influence on the results of this study.

B. Implications and Conclusions.

The results of this study demonstrate that features of learner-centered teaching can be directly connected with past significant learning experiences. The connections identified between learner-centered teaching and the significant learning experiences suggest that these principles of learning have been around for a long time. Although these connections are not entirely surprising, as the cognitive underpinnings of learner-centered teaching have been around for numerous decades, they suggest that learner-centered teaching can result in learning that lasts for many years after the experience. However, not all applied features of learner-centered teaching were connected to past significant learning experiences (most notable the purpose and of

evaluation). Further research into learner-centered teaching and past significant learning experiences should help to specify these commonalities and differences.

The observed connections between learner-centered teaching and past significant learning experiences may prove to be helpful for faculty who are new to this type of teaching. Rather than considering learner-centered teaching as a new, challenging way of educating students, their first steps towards being more learner-centered could be to consider their own past significant learning experiences. They could then identify the aspects that made these experiences so powerful and then look within the scholarship of teaching and learning literature to find evidence of connected features. It would also provide a familiar platform from which they can build learner-centered teaching into their own instruction. Additionally, the types of activities and instructors that the faculty described in their experiences could be used to inspire teachers to develop similar experiences and teaching personas.

A similar case can be made for using the data and results from this study to assist students who are new to learner-centered teaching. Many students have difficultly when they first encounter learner-centered teaching, especially if they had not experienced it before the college level (e.g., Doyle, 2008). It may be beneficial for learner-centered instructors to have their students do the same reflection that the participants in this study completed. Discussing the students' experiences and connecting features of them with the methods of the course may help facilitate their understanding of why the class was designed differently than their previous courses.

The results of this study suggest that applied principles of learner-centered teaching can be connected to significant learning experiences. Although there are no guarantees that the learner-centered experiences that faculty provide will be later identified by their students as significant, educators can use the idea of creating significant learning experiences as a guiding principle within and across their courses. The connections demonstrated here suggest that learner-centered teaching can provide both a framework and specific methods for doing so.

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