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# A National Study of Theories and Their Importance for Faculty Development for Online Teaching

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## Abstract

This article presents the results of a national study of 39 higher education institutions that collected information about their practices for faculty development for online teaching and particularly the content and training activities used during 2011-2012. An instrument of 26 items was developed based on a review of literature on faculty development for online teaching and analyzed in Meyer (2014). The study found that 72% (n=29) organizations used learning style theory as a basis for their training activities, followed by 69% that used adult learning (Merriam, 2001) and self-directed learning (Knowles, 1975), 64% that used Kolb's (1984) experiential learning model, 59% that used Knowles' (1975) andragogy theories, and 54% that used various instructional design models. Models of good practice were strongly favored (79%) over research on online learning (31%) or theories of learning (23%) in faculty training. Pedagogies of online learning were most important to 92% of the respondents, while research about online learning was most important to only 23% of those who completed the survey. Differences based on Carnegie classification were also found.

## Introduction

What can we learn from the literature on faculty development that can improve our efforts to help faculty learn how to teach online? This question guided a review and analysis of the research literature on faculty development for online teaching (Meyer, 2014) which focused, in part, on the theories implied or applied to the design of faculty development efforts or included as content in the training that faculty experienced. While the use of theories for this purpose was not universal in the literature, perhaps asking faculty developers directly which theories formed the foundation of their faculty development efforts would elicit more instances as well as more (and perhaps more diverse) theories. This study asks a national sample of faculty developers at public higher education institutions to identify which theories guided their faculty development offerings and their relative importance to other theories or training content.

## Review of the Literature

### Why Is Theory Important?

Theory has a critical role in both quantitative and qualitative research (Creswell, 2004). In quantitative research, theory is used deductively as a way to conceptualize a study, derive testable hypotheses, and confirm (or disconfirm) the validity of the theory in the current case under study. In qualitative research, theory is used more inductively, after data are collected, to explain trends or patterns in the data. In both cases, theory connects "new knowledge . . . to the vast body of knowledge to which it is relevant . . . without theory, we cannot have conceptual direction" (DePoy & Gitlin, 1998, para 1) because theory clarifies relationships and impacts. Theory, in other words, is a lens to view what may be disconnected bits of experience so that a more coherent view of phenomena is gained.

Theory elucidates how individuals learn and why one pedagogy works while another may not and so may guide teaching. For this study, a focus on theory became important given that only 15% of articles reviewed (Meyer, 2014) included a learning theory to support choices made in the design of faculty development for online teaching. What follows is a review of the theories mentioned in these prior studies of faculty development for online teaching.

## Adult Learning Theory

Adult learning theories were first developed by Knowles (1975), who proposed the use of the term "andragogy" (rather than pedagogy) for the ways that adults learn; later, Knowles recognized that both children and adults can and do learn using the learner-directed approaches characteristic of andragogy and redefined andragogy to be determined by the learning situation rather than the age of the learner (Merriam, 2001). Andragogy emphasizes that adults pursue learning that is important to them or provides immediate usefulness.

Adult learning theory has been used in several faculty development efforts. The principles of andragogy were used in the design of a faculty bootcamp, a three-day workshop that provided intensive faculty development for online teaching (Johnson, Wisniewski, Kuhlemeyer, Issacs, & Krzykowski, 2012). The experience focused on the current research on online learning, online tools, content, and assessment. Feedback from participants indicated that the experience alleviated faculty anxieties and allowed them to feel comfortable tackling the creation of an online course. Adult learning principles – including applying knowledge immediately to the course and self-directed learning – were critical for the redesign of a faculty development course (DeNoyelles, Cobb, & Lowe, 2012), titled "Build Your Own Course." In a review of the research literature on faculty development, McQuiggan (2007) found evidence that several studies of faculty development had been undertaken within an "adult education" or adult learning framework. Most importantly, faculty developers need to appreciate that faculty are adult learners with various problems and time demands, past experiences with teaching or using tools, and different levels of motivation for learning new approaches. By using adult learning principles, it is more likely that faculty move from initially feeling confused or anxious about teaching online, through reflection on their teaching beliefs and attitudes, to eventually feeling capable of changing their teaching approach or philosophy.

Self-directed learning became especially interesting to researchers with the advent of the Internet and its perceived usefulness for satisfying an individual's need for learning about many topics (Hiemstra, 2006; Lema & Agrusa, 2009); such Internet-based learning would be essentially unstructured or serendipitous as learners followed links or Googled ideas. In fact, as an individual's online skills improve, he or she is more likely to engage in self-directed learning (Quinney et al., 2010). For librarians, a self-directed technology training program resulted in individuals being more motivated to continue their learning and more likely to incorporate new technology into their work duties (Quinney et al., 2010). Understanding and developing attitudes are important in light of Web 2.0 tools, given the ability of these tools to liberate the individual to create new knowledge and take control of the learning process (Kop, 2008).

Self-directed learning has also been proposed as a foundation of transformative learning (see next section) by Cranton (1996), so the practice (self-directed learning) and the theory (transformative learning) appear to be connected or to overlap, with both working to encourage change in participants. Merriam (2001) posits that transformation learning is a second goal of self-directed learning, further connecting the two approaches, and Piling-Cormick (1997) specifically proposed that transformative learning can and does occur in self-directed learning. This implies that these two theories can and do work together to generate learning in adults.

## Transformative Learning Theory

Transformative learning (Mezirow, 1991) involves a learning process that changes an adult's perspective. Adults naturally seek evidence that their views are correct or they can transform current views to something new. Perspective transformation is accomplished through the disorienting dilemma – an experience that forces the individual to question prior beliefs – and through serious reflection on one's beliefs and assumptions, discussion of new information, and empathy toward other perspectives. A critical reflection model of learning might be especially helpful to faculty developers trying to change a faculty member's perspectives about teaching online, student learning, or his/her role as an instructor.

Several evaluations and research on faculty development programs are based on this theory. Major (2010) conducted a review of studies investigating faculty experiences while teaching online; her first finding, that faculty change the public presentation of themselves thereby becoming more reserved online, recognizes a shift in the faculty persona. In other words, these faculty members have likely gone through some sort of transformative learning that allowed them to question, and change, their presentation of themselves in online courses. McQuiggan (2012) provides an excellent example of an action research study based on reflection journals and interviews with participants after an extensive faculty development experience that included

planning, face-to-face sessions, and web conferencing. By including activities specifically intended to encourage reflection on core teaching beliefs, participants examined their reliance on lecturing, revised assignments to emphasize student construction of knowledge, and changed their teaching practices in face-to-face classes.

Critical reflection was found to be important in the perspective transformation of 62% of the faculty involved in faculty development (King, 2004), where participants developed more open-minded attitudes towards others, became more appreciative of multiple perspectives, and developed stronger reflective practices applied to their work. In a study of teacher educators undergoing training in educational technologies, participants changed their views of the teaching profession as well as what constitutes good educational practice (King, 2002), a finding that is consistent with transformational learning theory. Hubball, Collins, and Pratt (2005) incorporated critical reflective practice (based on Schön's 1996 work of the same name) into an eight-month certificate program for faculty at the University of British Columbia; using the Teaching Perspectives Inventory, scores for those participating in the program increased significantly on all of the measures. McQuiggan (2007) found evidence that faculty development efforts were helping faculty transform their views of teaching. While early experiences teaching online were bewildering, overwhelming, and disempowering, reflection on their prior beliefs about what constitutes good teaching led participants to change their views of their role in the online course. McQuiggan (2007) asserts that faculty development that focuses primarily on teaching technology skills will not necessarily lead to participants' coming to challenge their prior attitudes; faculty development needs to do both. For institutions and faculty developers deeply committed to helping faculty transform their views of what good teaching is, basing faculty development for online teaching on transformational learning theory may be an excellent choice.

### **Other Theories**

While the majority of faculty development articles that include a reference to theory use adult learning or transformative learning theory, different writers have suggested other theories as possibly useful for faculty development. Trotter (2006) has recommended "age and stage" theories such as Loevinger (1976); Kohlberg's (1969) theory of moral development may be helpful to developers dealing with faculty who are at different stages of moral development. Kegan's (1982) theory of individual development from self-centered to other-centered may be helpful in assisting faculty transform their teaching from what the faculty wants to what the student needs. Perry (1970) proposed a cognitive development theory again may be helpful to developers dealing with faculty who are at various Perry stages. And Gibb (1960) developed a functional theory of adult learning that stresses the importance of learning that is problem- or experience-based; perhaps multiple intelligences theory (Gardner, 2006) can contribute to research on faculty development (as urged by Riha & Robles-Piña, 2009), which stresses individual learning differences. Finally, while not all experts are supportive of learning styles (e.g., auditory, visual, kinesthetic), perhaps designing faculty development to be experienced in different ways or through different perceptual skills may be helpful.

Experiential learning (Kolb, 1984) is a powerful approach for learners to discover new meaning which builds upon prior and current experiences (Lobel, Neubauer, & Swedburg, 2002). Experiences are also useful fodder for encountering the disorienting dilemma, a critical first step to transformative learning. Experiential learning also has the advantage of providing superior retention rates for learning (as high as 75%, compared to lecture which is 5%) (Lobel et al., 2002, Figure 1). Connectivism (Siemens, 2005) integrates ideas from chaos, network, complexity, and stresses the ability to see connections between fields, ideas, and concepts (Phelps, 2003). The social constructivist theory of learning was taught to traditional lecturers during faculty development and helped them adjust to the online mode of learning (Maor, 2006). Perhaps the Community of Inquiry model (Garrison, Anderson, & Archer, 2001) would help developers explain cognitive, teaching, and social presence. While not a true learning theory, TPACK: Technological Pedagogical Content Knowledge (Koehler, Mishra, & Yahya, 2007) stresses the need for technical knowledge, pedagogical knowledge, and content knowledge in online learning. It is clear that a wealth of learning theories may be usefully applied to understanding how faculty learn to teach in an online setting.

### **Use of Theory in Faculty Development Research**

It should not be concluded from the literature review that the lack of a specific learning theory used in designing faculty development is due to any lack of knowledge about the theories. It is possible that choices made by the faculty developers were based intuitively on theories of learning or theory was not a focus; some

faculty can be dismissive of instructional theories. This last point may explain why faculty developers tend to stress practical approaches in their training, but many other faculty members may appreciate learning more about instructional theories. A development experience based explicitly on learning theories may be more helpful to these types of faculty, because it is grounded in a theoretical framework that they can understand and explore in other instructional settings.

The main point is that a theoretical underpinning of the training was not made clear in many of the research articles on faculty development for online teaching. This is of concern for one reason: If faculty development providers and evaluators wish to establish their practices on more solid theoretical footing, more research that is based on theory (or seeks to establish new theory as is possible in qualitative research) is required.

### **Other Approaches to Design of Faculty Training Including Student Learning Theories**

The prior sections have been focused on theories that underpin the development of faculty training for online teaching. However, in the early years, practitioners were immediately focused on development of "best practices" for online teaching based on early research findings, best practices in the face-to-face instructional world, and emerging understandings of what online students needed to succeed. Two early leaders in this effort were the Sloan Consortium and Quality Matters.

The Sloan Consortium developed a database of "effective practices" (see <http://sloanconsortium.org/effective>) which also included evidence of the effectiveness of the practice. The University of Maryland University College developed the Quality Matters rubric (see <http://www.qmprogram.org/>). The rubric was based on online learning research and quickly became widely disseminated and used; over 500 institutions currently subscribe to the service while the number of institutions that use the rubric may be even larger. In fact, Herman (2012) found that 49.3% of the 191 institutions responding to her survey on faculty development practices used the Quality Matters rubric.

So far the focus has been on the learning theories that would help faculty learn how to teach online. However, given that faculty continue to play a central role in designing and revising online courses, it is also important that faculty understand current student learning theories. These theories may be the same, especially for online coursework where the students are also adults, and include attention to the structure of learning and learning styles.

### **Differences by Carnegie Classification**

Higher education institutions in the United States have been classified into like groupings based on work originally done in 1973 by the Carnegie Foundation for the Advancement of Teaching. The classifications have regularly changed as criteria were revised to address changes in higher education institutions, creation of new types of institutions, and to better capture the diversity of institutions. The Carnegie classification has been a useful tool of higher education researchers and has been used in research covering a wide range of topics, from funding to faculty to information technology. In fact, Carnegie classifications were instrumental in understanding differences in faculty development offerings (Herman, 2012) as well as institutional websites (Meyer, 2008a; Meyer, 2008b; Wilson & Meyer, 2009; Jones & Meyer, 2012), since different types of Carnegie institutions may have more, or less, funding or staff to provide web-based services through the use of various technologies. Therefore, it is reasonable to expect that the importance placed on different types of content within faculty development for online teaching may also vary by the Carnegie type of the institution.

### **Research Questions**

The issue of understanding theories for learning is two-fold. The focus is on the learning theories that form the foundation of training that faculty undergo before teaching online as well as on the learning theories that faculty use as they design their online courses. Secondly, to put the focus on theory into context, it is important to determine whether faculty developers are using theory or principles of good practice (also known as best practices) as they design their training. The four research questions that guide this study are:

- Which theories are the bases for faculty development for online teaching?
- How often are student learning theories incorporated into faculty development? Are theories incorporated more or less often than research or principles of good practice?
- How important are student learning theories for faculty to understand as they prepare to teach online?

Are theories more or less important than pedagogies, research findings, instructional design models, online learning models, or principles of good practice?

- Are there differences in the Carnegie type of the institution in the assessment of what is deemed important for faculty to understand?

## **Methodology**

### **Research Design and Instrument**

This study is based on survey research that collected information from participating higher education institutions. As this is one of the first attempts to assess faculty development for online teaching practices in a national sample, survey research was deemed an appropriate approach.

The instrument was developed by the first author and was based on a thorough review of the published literature on faculty development for online teaching (Meyer, 2014). Once a draft of the instrument was made, the instrument was reviewed by the Sloan-C Advisory Panel for Faculty Satisfaction as well as representatives of the Sloan-C and WICHE Cooperative for Educational Telecommunications (WCET) organizations, including organizational leaders and researchers, faculty developers, and faculty who conduct research on this topic. Considering that this would be the first national study of faculty development for online teaching, the findings would be of interest to members in both organizations. This process resulted in many additions and revisions that resulted in a cleaner and more comprehensive instrument. Given the face validity of the items, it is likely that the data resulting from the instrument are valid and reliable.

This study used three items from the instrument (which included a total of 26 items). First, the institution would indicate the learning theories which form the bases for its design of faculty development (e.g., adult learning, self-directed learning, andragogy, transformational learning, experiential learning, critical reflection, multiple intelligences, student learning styles, ego development theory, moral development theory, individual development, cognitive development, connectivism, complexity/chaos, Community of Inquiry, Technological Pedagogical Content Knowledge, instructional design model). Each of these theories was paired with a primary author who is associated with that theory in the literature, in case the author's name was more familiar to the individual completing the survey than the theory. (Table 1 provides these pairings of theory and author's name.) An open-ended comment box was provided for the name of the instructional design model. All of these items were answered by one of three choices (numerical code in parentheses): Yes (2), No (1), and Don't Know (0).

Second, the institution indicated the importance placed on information provided to faculty during training (e.g., research on online learning, theories of learning, principles of good practice); an open-ended comment box allowed for additional comments. These items were answered using Likert scale that included All of the time (5), a lot (4), sometimes (3), infrequently (2), never (1), and not applicable (0). Please note that "theories of learning" in this context refers to student learning theories, or those theories of student learning that faculty would find helpful to them as they design or revise their online courses.

Third, the institution indicated the importance it placed on faculty understanding in each of the following: pedagogies of online learning, F2F (face-to-face) pedagogies applied to online learning, research findings for online learning, theories of learning, instructional design models or principles, online learning models, and principles of good practice. An open-ended comment box was provided for additional ideas. These items were answered by one of six choices: Very important (5), moderately important (4), somewhat important (3), a little important (2), not important (1), and no opinion (0). This is another instance where "theories of learning" refers to student learning theories.

Fourth, the individual completing the survey was asked to indicate the Carnegie classification of the institution, if this was known. If it was not known, this item was left blank and the first author used the link offered by the Carnegie Foundation for the Advancement of Teaching ([http://classifications.carnegiefoundation.org/lookup\\_listings/institution.php](http://classifications.carnegiefoundation.org/lookup_listings/institution.php)) to determine that information.

### **Population and Sample**

A request to complete the survey was sent from an officer of Sloan-C to the official representatives of higher education institutions that are members of the Sloan-C organization, or 407 member organizations, including

higher education institutions and businesses. The first author also sent a request to complete the survey to the online WCET Discussion Board, which is open to any individual who is an employee of a WCET member organization, or 295 member organizations (which includes both colleges as well as businesses). Both requests asked that the survey information be forwarded to the individual responsible for faculty development at the institution. Because institutions can and are members of both organizations, the request asked institutions to beware of duplicative emails and two items were included in the instrument (institution name and individual's name) so that duplicative responses could be identified.

Responses were received from 39 institutions including 13 doctoral/research institutions, 12 master's institutions, three baccalaureate institutions, and 11 associate's institutions. Given the low number of baccalaureate institutions, results are reported but are not interpreted or discussed in comparisons to other Carnegie types. Responses from one special focus institution and one international institution were deleted for the analysis using Carnegie classifications in order to protect the anonymity of the responses.

The survey was completed by individuals with titles as diverse as coordinator, director, dean, and Vice President, and located in Academic Affairs (57.9%), Chief Information (Technology) Officer (23.7%), a Department (18.4%), College (13.2%), or Central/System Office (5.3%). This diversity of job titles and locations seem to imply that faculty development for online teaching is occurring in many different locations at the institution and under different guises or names.

### **Data Collection**

The instrument was created within SurveyMonkey.com, which provides a flexible set of question types for the researcher and long-term data storage. The initial request to institutions for responses to the instrument was sent January 4, 2013 and the deadline for receipt of responses was February 1, 2013. On this date, the survey was closed to further responses and analysis began.

### **Data Analysis**

For the first research question, "Which theories are the bases for faculty development for online teaching?" each of the 17 theories is reported by frequency and percent of total sample presented in rank order (from most frequent to least). Because an open-ended comment box was made available for each item on the survey, those answers were downloaded and evaluated for consistencies and reported by frequency for each question. For research question two, "How often are student learning theories incorporated into faculty development? Are theories incorporated more or less often than research or principles of good practice?" each of the items is reported by the Likert label as well as the mean for the item.

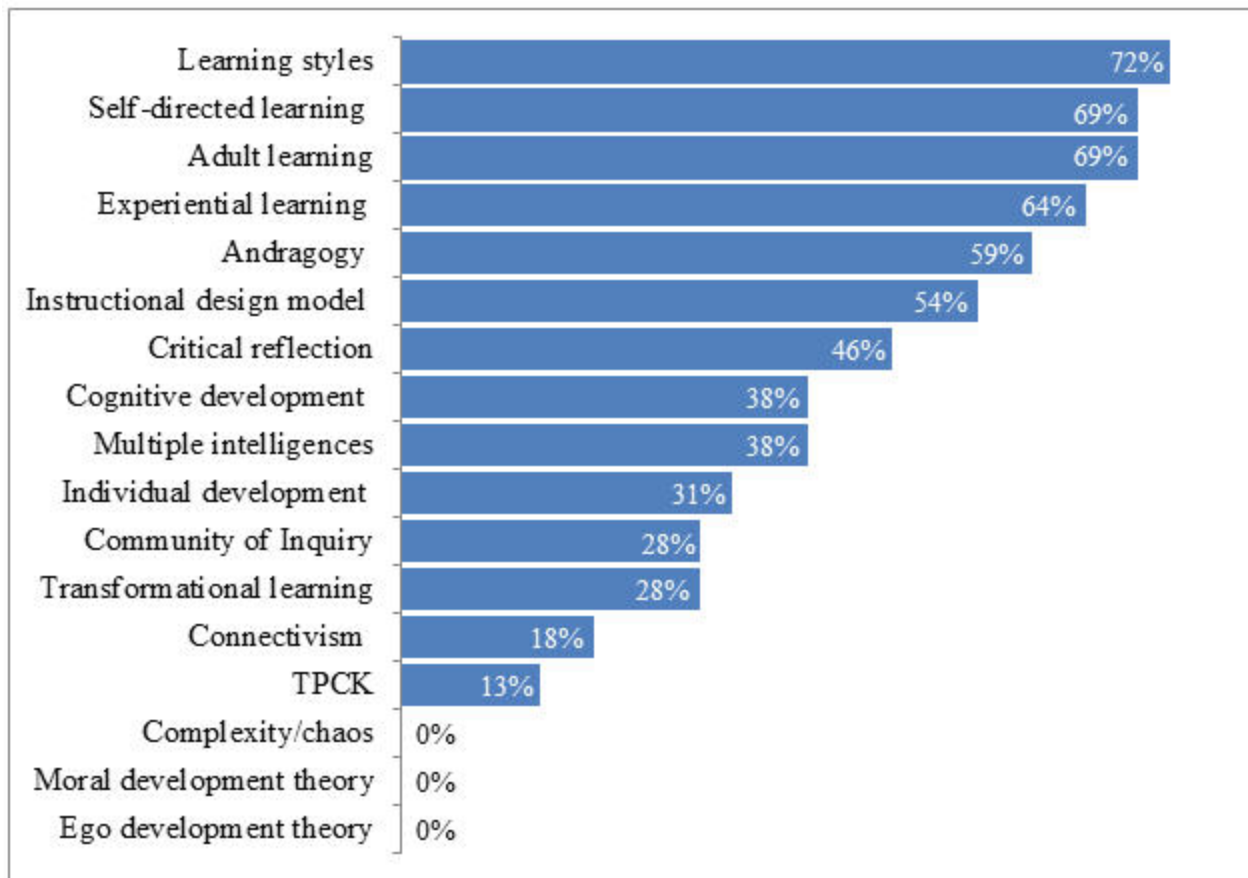
For research question three, "How important are student learning theories for faculty to understand as they prepare to teach online? Are theories more or less important than pedagogies research findings, instructional design models, online learning models, or principles of good practice?" each of the seven items is reported by Likert label as well as the mean for the item. For the fourth research question, "Are there differences in the Carnegie type of the institution in the assessment of what is deemed important for faculty to understand?" each of the seven items capturing importance for faculty to understand is reported by number and percent of institutions in each Carnegie type. A rank order is also reported for each item for each separate Carnegie classification.

### **Findings**

The findings of the data analyses are reported in here graphic form, but the data is also reported in tabular form in the Appendix of this article.

### **Theories Used**

Based on the survey results, the answer to research question one (Which theories are the bases for faculty development for online teaching?) can be easily ascertained. The chart in Figure 1 below conveys the percent of institutions using specific learning theories; more detail is available in Table 1 of the Appendix.



*Figure 1.* Percent of institutions indicating use of learning theories (n= 39 institutions). This figure illustrates the number of institutions utilizing specific learning theories in the development of faculty development materials.

The instrument provided an opportunity for respondents to indicate the instructional design model that they used at their institution (this is "instructional design model" above). Over half (n=21) of the institutions indicated that they relied on these models, so it is important to incorporate a sense of how popular some of these models are. Since these models may not be familiar to all readers, the model and a web-based reference is provided in case the reader is interested in learning more about the model. The models and number of responses (n=11) follow:

- ADDIE (Analysis, Design, Development, Implementation, and Evaluation) received the most mentions at nine; see [http://en.wikipedia.org/wiki/ADDIE\\_Model](http://en.wikipedia.org/wiki/ADDIE_Model)),
- Quality Matters receiving the second most mentions (three),
- CSU Chico rubric (two mentions, see <http://www.csuchico.edu/roi/>) which tied with
- ASSURE (two mentions, based on Gagné's events of instruction with more information available at <http://www.instructionaldesign.org/models/assure.html>),
- Dick and Carey ([http://www.umich.edu/~ed626/Dick\\_Carey/dc.html](http://www.umich.edu/~ed626/Dick_Carey/dc.html)) with one mention,
- Backward Design ([http://en.wikipedia.org/wiki/Backward\\_design](http://en.wikipedia.org/wiki/Backward_design)) received one mention,
- An institution-developed model received one mention,
- Bloom's taxonomy ([http://en.wikipedia.org/wiki/Bloom's\\_Taxonomy](http://en.wikipedia.org/wiki/Bloom's_Taxonomy)) had one mention, and
- Sloan-C (<http://sloanconsortium.org/effective>) received one mention.

It is beyond the scope of this study to analyze or evaluate these models, but the frequency that these models are used by higher education institutions implies that faculty developers rely on them to help faculty learn how to teach well online. However, these models may, in fact, be based on learning theories.

It is somewhat surprising that the most frequently cited theories are those of student learning styles, given the lack of empirical research supporting these theories. Coffield, Moseley, Hall, and Ecclestone (2004) completed an extensive review of 13 popular learning styles theories. Their conclusion was that there need to be more

psychometrically valid measures, as well as other research-based validation, for the concept of "learning styles" to be a well-founded theory. Coffield et al. (2004) reviews many of the criticisms that learning style theory has received from the academy in the past few decades. While learning styles theory was utilized by 28 of the institutions, 27 also utilized adult learning and self-directed learning theories in their training design which confirms the popularity of adult learning and self-directed learning. Interestingly, Knowles' andragogical theory was reported to be utilized by only 59% of the institutions. This could be a reflection of Merriam's more recent research as well as perhaps the datedness of Knowles' writings. It makes sense that adult faculty would be appreciative of the theories associated with adult learners since they are, themselves, adult learners.

More than half of the institutions reported usage of instructional design models and experiential learning. This interesting inclusion indicates an understanding of and appreciation for both the concept of the student's active experience with learning and the need to have a basis for course design. While instructional design has been mostly relegated to the field of education, it makes sense that there should be some foundation for the "what, who, when, where, and why" of teaching a course in any discipline. A course (whether on-ground or online) that has a firm reasoning for teaching specific concepts, assigning specific tasks, and assessing specific knowledge and skills provides the student with a cogent set of learning tasks and goals. Instructional design models give course designers specific parameters in which they can build a learning experience that directs students to specific learning outcomes. Instructional design models help course developers keep the student in mind during the process of providing course objectives, learning materials and processes, and assessments.

The concept of experiential learning provides educators with several challenges, especially in the online realm, so it stands to reason that this would be a focus in faculty development training. Providing tasks in which the student is engaged in an activity designed to help construct meaning poses a challenge to the on-ground educator, who has the benefit of creating face-to-face activities. Doing so in the virtual world, without the benefit of programmers who can design simulations, can prove to be more difficult. That being said, the difficulty of designing effective experiential or constructivist learning opportunities challenges designers (those who design online courses as well as faculty development). However, it is also important to note that experiential learning activities need not occur within the online course, but can be designed to occur in real-world situations that the student can access wherever he or she is located. In other words, there may be no limit to experiential learning within online learning as long as faculty learn how to design experiential learning exercises that are universal (available to students anywhere) as well as educational.

The less frequent uses of other theories mentioned in the literature may be interpreted to mean that either the theories are not known, not deemed useful, or simply not used by faculty developers. Why that may be so cannot be answered in the current study, but may be a useful direction for future research.

### **Information Included**

The answers to research question two (How often are student learning theories incorporated into faculty development? Are theories incorporated more or less often than research or principles of good practice?) are reported both as mean scores (Figure 2) from the 5-point Likert scale referenced earlier (and a stacked chart drawn from the raw data (Figure 3). These reports show that principles of good practice are utilized more than research on online learning or theories of practice.



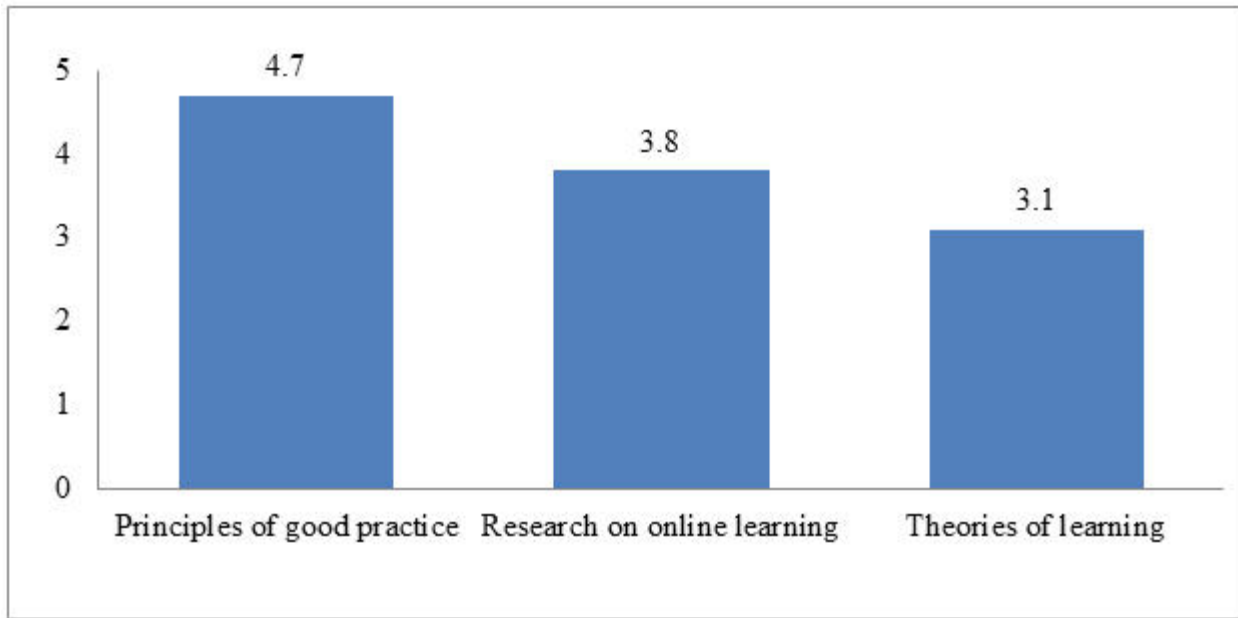


Figure 2. Mean Scores Showing Results of 5-Point Likert Scale. This figure illustrates the incorporation of principles of good practice, research on online learning, and theories of learning in faculty development. (See Table 2 in Appendix.)

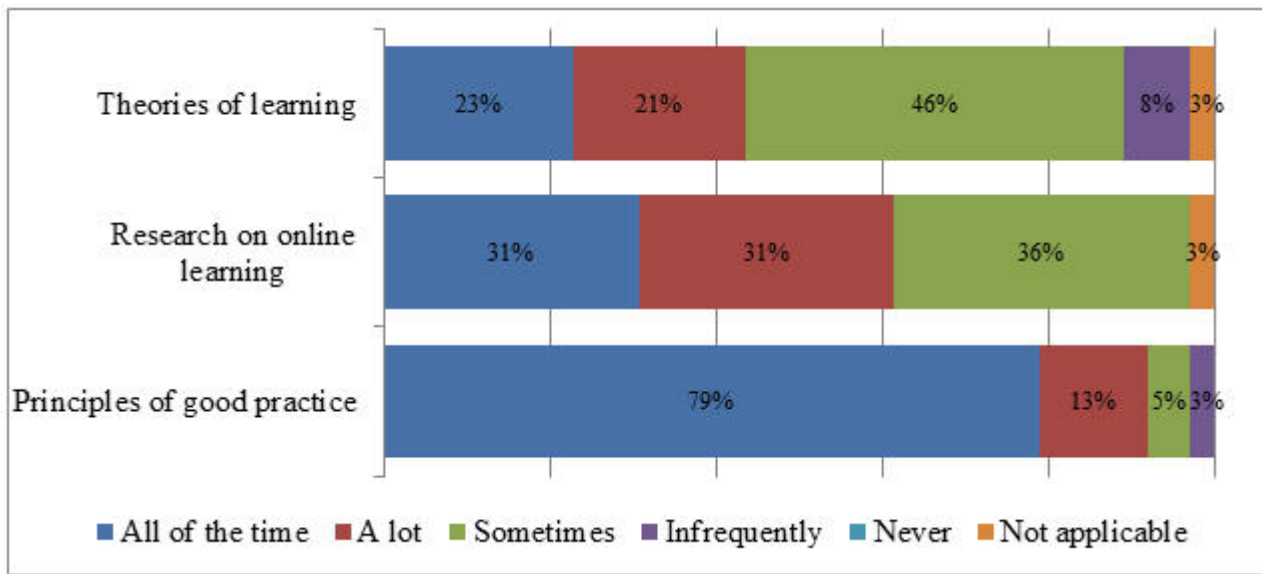


Figure 3. Percent of institutions indicating incorporation of information into training (n= 39). This illustrates the number of answers specific to the Likert scale items, showing frequency of utilizing these concepts when planning faculty development programs (See Table 2 in Appendix).

These results show a strong preference for principles of good practice over theories of learning or research on online learning. This indicates that faculty developers are more interested in teaching faculty the "rules of the road" as captured in a principle of good practice, but not the theory or research that supports the usage of the practice. This may equip the faculty person with a good understanding of what to do, but not why doing so works for student learning online. It may indicate a preference to teach specific skills rather than to educate faculty with the knowledge that might allow them to explore learning theories in their online courses or value the results of online learning research. Clearly, there may be good reasons that faculty developers eschew theory and research: faculty want solutions that help them immediately, faculty may not be willing to allocate time to their own edification about the underlying theories (in addition to learning the skills), they may not value learning theory or research, or they may assess these theories and research as less valuable as the theories

and research of their own discipline. If there is one worry about this emphasis on skills but not on the underlying theories of learning, it is that faculty members who might benefit from understanding the theoretical or research basis of the principle are left with rules without foundations. These foundations might allow faculty to develop expertise with online teaching that goes well beyond following "rules" derived from training. Perhaps an option could be to provide faculty with additional resources that support the skills that they learning in training. These would be for their later consumption. This, however, would entail additional preparation on the part of the faculty developer who may believe that this time would be better spent in other endeavors.

**What Is Important for Faculty to Understand**

The answers to research question three (How important are student learning theories for faculty to understand as they prepare to teach online? Are theories more or less important than pedagogies research findings, instructional design models, online learning models, or principles of good practice?) reveal a preference on the part of those responsible for faculty development for providing pedagogies and principles over theories and research and models, as shown below.

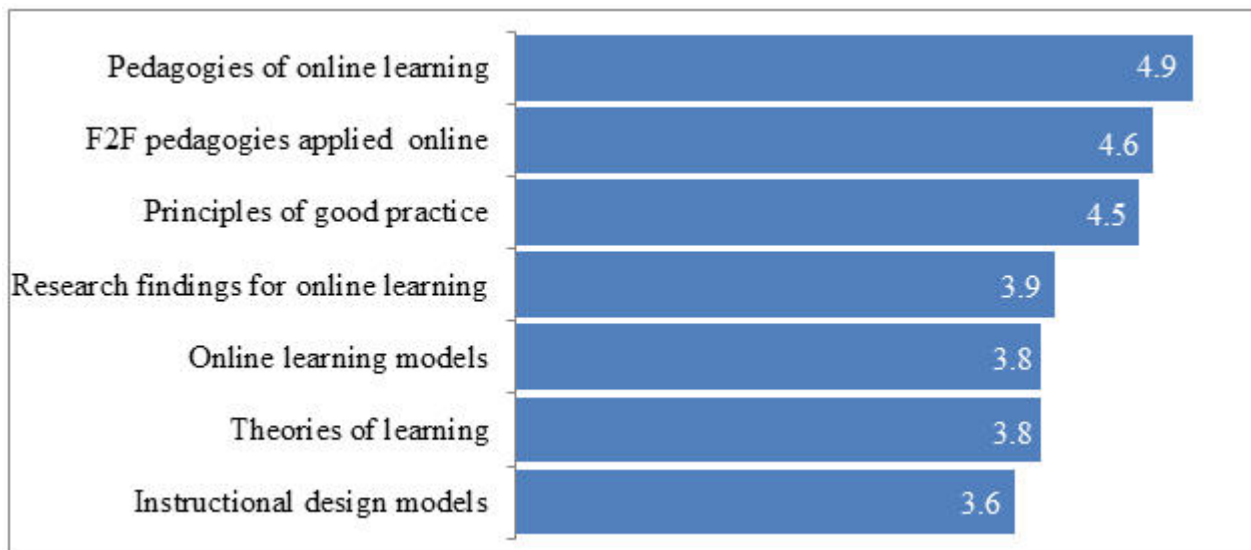


Figure 4. Importance of student learning theories. This illustrates the institutions' perceptions of the importance of theories of student learning for faculty preparing to teach online. (See Table 3 in Appendix).

It goes beyond the scope of this study to state categorically why this may be so, although some suppositions were provided above. It may be that sharing information about the theories and research behind the pedagogies and principles would be interesting to some, but not all, faculty. The constraints of time, both of the faculty and the trainers, likely dictates that teaching the skills of online teaching is of primary importance and that providing the theories behind those skills falls to the wayside.

**Importance by Carnegie Classification**

Research question four (Are there differences in the Carnegie type of the institution in the assessment of what is deemed important for faculty to understand?) supports the importance of including pedagogies in faculty development for institutions in all Carnegie types.

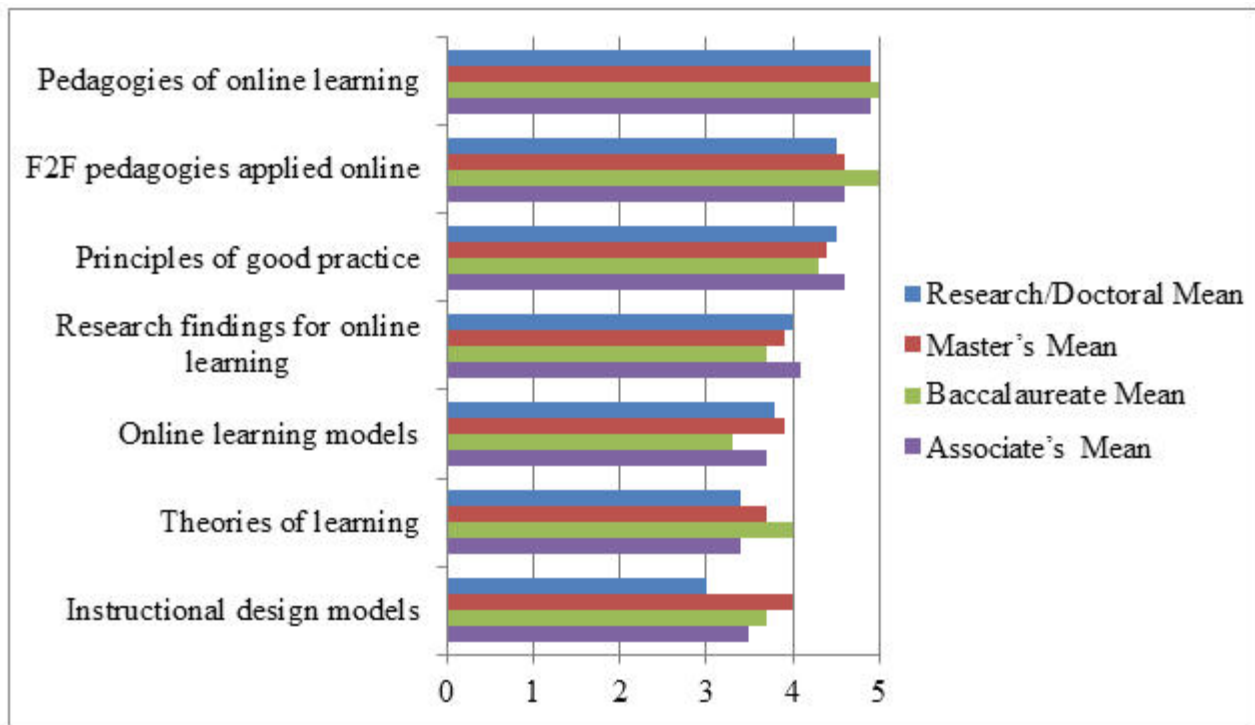


Figure 5. Importance of faculty understanding by Carnegie type. This chart illustrates the differences among institutions, with Carnegie rankings of Research/Doctoral, Master's, Baccalaureate, and Associate, in the importance of faculty understanding of student learning theories in the development of online faculty training. (See Table 4 in Appendix for more specific data).

These results may reflect that fact that faculty members – especially those trained at the doctoral level – have little training in pedagogy to prepare them for the faculty teaching role. Faculty developers may see their role as primarily repairing this deficiency as best as they can. The teaching of principles of good practice is ranked high for research/doctoral and associate institutions. This may capture an important difference in mission and culture whereby faculty at research/doctoral institutions not only need to learn about pedagogies but they may be uninterested in theories and research studies conducted by faculty in colleges of education or dealing with educational theory which they may disdain or consider as less rigorous. Faculty at associate's institutions may be preparing to teach online rather than design an online course, and perhaps learning more about the "how" of teaching online is more relevant than knowing "why" it works.

The lesser emphasis on theories and research in faculty development may be holding back these faculty and preventing them from improving their online (and, indeed, their on-ground) teaching. By using theories to develop hypotheses, test them, and continuously apply new insights to their teaching, it is possible that the faculty person can evolve as an effective teacher. Certainly, not all faculty may want an opportunity to improve their teaching or apply their research skills to what is happening in the online classroom. However, higher education institutions may want to develop and reward faculty who are using their research skills to continuously improve their teaching as well as student learning in online courses. As calls for greater accountability increase and the importance of the teaching mission continues to be stressed among higher education and governmental leaders, faculty may need assistance in seeing the benefit – to their institutions, their students, and their professional self-conception – of understanding more about learning.

**Recommendations**

These faculty developers seem to strongly support the need for faculty who teach online to learn about student learning styles. This finding may indicate that, despite the literature that critiques the existence and credibility of learning styles in the research (Coffield, et al., 2004), faculty developers still find the use of student learning styles helpful. Perhaps learning styles are helpful and can be recommended for future use because they force faculty to think in new ways about students, to understand that students do not learn as they themselves do or as they have assumed all students learn, and to recognize the importance of student differences.

Faculty developers seem to have found several theories of use in their efforts, from adult learning to self-directed learning, experiential learning to andragogy, as well as use of instructional design. Other faculty developers who do not use these theories may wish to consider them as foundations for training provided to faculty at their institution. While the other learning theories were less used, faculty developers may find some useful ideas among them when they design faculty development opportunities.

For faculty who teach adults online, greater understanding of the adult learning theories (self-direction, andragogy, transformational learning) may be useful as well as other constructivism-based theories (experiential learning, critical reflection). Despite the finding that faculty developers do not always use specific learning theories in faculty training, helping faculty members understand how their students learn should be a high priority.

Certainly, faculty developers are using some learning theories as they develop faculty training but perhaps the theories used should be made more explicit, both in terms of explaining the basis for the training to faculty participants, but also including this rationale when sharing results with other faculty trainers. If there is one direction that faculty development for online teaching surely needs to explore, it is to use learning theories more often, use more theories, and evaluate their uses and impact on student learning in the online course. Faculty understand theories, and providing training that does not explicitly address learning theories may be shortchanging them. Developers are missing an important opportunity to share what they know about learning online and helping faculty teach better online. And the credibility of what faculty developers do may rest, in part, on grounding what is done on both theory and research in the field. This is not meant to sound like a criticism of the use of best practices; certainly, such practices have an important place. But those practices likely work best because they are based on some learning theory.

Faculty developers who are willing to test what they do and share their results with other faculty developers are urged to regularly share their findings via conferences and publications. And while these avenues for sharing their insights may be at first oriented towards online learning, they are urged to reach out to faculty from all disciplines since teaching online is happening in all disciplines. If we want to reach all faculty who teach online, we need to do so through the professional conferences in the disciplines.

Contrary to the current practices found in this study, we must recommend that faculty developers include the recent research findings on online teaching and learning. Some faculty may not appreciate this information or dismiss the findings but others can and will appreciate that the training they are experiencing is based on research. They may also be stimulated to test the findings in their own classroom or discipline which may help them develop a research-based approach to what they do when designing or teaching online. In other words, while teaching best practices is a good way to get faculty teaching online with a few essential skills, teaching them to base courses on theory and research may develop them as lifelong learners of the online setting.

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## Appendix

### Tabular Reporting of Findings

#### Table 1

*Percent of Institutions Indicating Use of Learning Theories (n= 39 institutions)*

Theory	Frequency	Percent	Rank
Learning styles	28	72	1
Adult learning (Merriam) Self-directed learning (Knowles)	27	69	2 (tie)
Experiential learning (Kolb)	25	64	3
Andragogy (Knowles)	23	59	4
Instructional design model (see text)	21	54	5
Critical reflection (Schön)	18	46	6
Multiple intelligences (Gardner) Cognitive development (Perry)	15	38	7 (tie)
Individual development (Kegan)	12	31	8
Transformational learning (Mezirow) Community of Inquiry (Anderson/Garrison)	11	28	9 (tie)
Connectivism (Siemens)	7	18	10
TPCK (Technological Pedagogical Content Knowledge)	5	13	11
Ego development theory (Loevinger) Moral development theory (Kohlberg) Complexity/chaos	0	0	12 (tie)

Table 2

*Percent of Institutions Indicating Incorporation of Information into Training (n= 39 institutions)*

Item	All of the time	A lot	Sometimes	Infrequently	Never	Not applicable	Mean
Research on online learning	31	31	36	0	0	3	3.8
Theories of learning	23	21	46	8	0	3	3.1
Principles of good practice	79	13	5	3	0	0	4.7

Codes: All of the time (5), a lot (4), sometimes (3), infrequently (2), never (1), and not applicable (0)

Table 3

*Percent of Institutions Indicating Importance that Faculty Understand (n= 39 institutions)*

Item	Very important	Moderately important	Somewhat important	A little important	Not important	No opinion	Mean
Pedagogies of online learning	92	8	0	0	0	0	4.9
F2F pedagogies applied online	62	36	3	0	0	0	4.6
Research findings for online learning	23	54	21	3	0	0	3.9
Theories of learning	26	41	23	10	0	0	3.8
Instructional design models	31	23	28	15	0	0	3.6
Online learning models	28	38	23	8	0	0	3.8

Principles of good practice	64	26	8	3	0	0	4.5
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Table 4

*Mean Importance that Faculty Understand by Carnegie Classification (n=39 institutions)*

Important Item	Research/Doctoral		Master's		Baccalaureate		Associate's	
	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank
Pedagogies of online learning	4.9	1	4.9	1	5.0	1(tie)	4.9	1
F2F pedagogies applied online	4.5	2(tie)	4.6	2	5.0	1(tie)	4.6	2(tie)
Research findings for online learning	4.0	3	3.9	5(tie)	3.7	4(tie)	4.1	3
Theories of learning	3.4	5	3.7	6	4.0	3	3.4	6
Instructional design models	3.0	6	4.0	4	3.7	4(tie)	3.5	5
Online learning models	3.8	4	3.9	5(tie)	3.3	5	3.7	4
Principles of good practice	4.5	2(tie)	4.4	3	4.3	2	4.6	2(tie)

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