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Examining Effective Teacher Practices In Higher Education

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EXAMINING EFFECTIVE TEACHER PRACTICES IN HIGHER EDUCATION

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by

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ABSTRACT

Today, contingent faculty members hold the largest percentage of teaching positions in higher education in the United States yet very few receive any pedagogical or andragogic training prior to teaching. Studies have found there is a level of concern regarding the quality of instruction provided by contingent faculty and instructor rank has been linked to grade inflation. Some universities claim close to 90% of all college students receive inflated grades and this grade inflation is negatively impacting subsequent course performance (Fagan-Wilen, Springer, Ambrosino, & White, 2006; Robinson & Hope, 2012; Sonner, 2010).

Contingent faculty members are mainly hired due to their subject matter expertise while tenured faculty are mainly hired due to their research agenda. Most join the higher education faculty rank as untrained, novice educators who lack the teaching knowledge to teach adult learners effectively. If contingent faculty members are untrained and thereby unfamiliar with effective teaching practices, what strategies are they using to teach and assess student learning appropriately?

This dissertation is a quantitative research study that examines the effective teacher practices of higher education faculty. The aim of this research study is to better understand the perceived effective teaching practices of contingent faculty members in higher education as well as to determine if faculty rank significantly influences these

perceptions. A purposeful sampling of faculty members teaching at four-year higher education institutions in the North Central region of the Higher Learning Commission (HLC) was used to collect data for this study. The Higher Education Teaching Practice Inventory (HETPI) Instrument was developed as a preventative measure to help identify the effective teaching practices used by higher education faculty members. The HETPI is a multiple statement instrument, based off the review of literature and by adapting the ACUE's Effective Practice Framework[©] (ACUE's Effective Practice Framework©, 2017) and the Adult Education Teacher Competencies outlined by the American Institutes for Research (Adult Education Teacher Competencies, 2014).

Keywords: teacher effectiveness, contingent faculty, faculty preparedness, andragogy

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER I

INTRODUCTION

Excellence in teaching is required as an institutional marketing tool, as part of an individual academic's case for promotion, to respond to almost ubiquitous student feedback, to justify system-wide investment in research and scholarship, and to provide accountability for public funding (Ramsden, 2003, p. x).

Today, the majority of non-tenure track faculty appointments are contingent on budget or student enrollment and most are contracted for only one semester. These contingent faculty (part-time and non-permanent faculty) hold the largest percentage of teaching positions in higher education in the United States. Plucked from practice to teach on an as-needed basis, often at the last minute, contingent faculty rarely receive pedagogical or andragogic training that empowers them to be effective teachers (Jaegar & Eaton, 2009; Kezar & Sam, 2011; Kezar & Gehrke, 2016; Michael & Libarkin, 2016; Robinson & Hope, 2013). Contingent faculty are primarily assigned to teach lower level classes that are full of students who need the most help (Nica, 2018). While contingent faculty bring relevant practice experience and content knowledge to the higher education classroom, these skills do little to serve the goal of higher education which is to effectively educate students (Michael & Libarkin, 2016; Robinson & Hope, 2013).

Rigorous teacher preparation and ongoing pedagogical training is commonplace in K-12 education (Kezar & Maxey, 2014; Michael & Libarkin, 2016). Elementary and secondary educators are required to participate in extensive, on-going training and must successfully pass state-level standardized tests prior to receiving their teaching license. Faculty in higher education, particularly contingent faculty, are not required to have had any teacher training prior to teaching at the university-level nor are they required to participate in ongoing training or demonstrate their knowledge of teaching methods prior to being hired as faculty members in higher education (Kezar & Maxey, 2014; Michael & Libarkin, 2016). In a recent study, faculty members were asked if they were required to attend a course during their graduate program that would help them to develop their teaching skills. 80% of the respondents indicated they were not required to participate in a teaching preparation course in their graduate program. In the same study, faculty members were asked if they participated in any course, post graduate degree that would help develop their teaching competency. 60% of the respondents indicated they did not (Robinson & Hope, 2013).

Higher education's failure to adequately train contingent faculty members leaves them ill-equipped to implement effective teaching practices, manage large classrooms or conduct student learning assessments that accurately track student progress to ensure mastery of knowledge required of liberal arts education (Michael & Libarkin, 2016). While student satisfaction (the primary measurement of educational quality in most higher education institutions) remains high, a recent study revealed a very different perception of the student experience (Neary, 2016). Students reported a large variation in the quality of instruction, courses that were not challenging, boring seminars, too few

2

contact hours, and poor course and classroom management (Neary, 2016). Higher

education institutions should understand the current state of effective teaching

competencies in use by their faculty members, so they can implement evidence-based on-

boarding and orientation programs that develop each faculty members' specific teaching

practice need, especially new contingent faculty members, as student achievement and

student learning is directly related to effective teaching (LINCS, Teacher Effectiveness in

Adult Education, 2015).

Statement of the Problem

Contingent faculty are lacking the necessary andragogic training to teach adult

students effectively which is negatively affecting student achievement and student

learning in higher education. Literature suggests that higher education institutions that

primarily use contingent faculty members to teach introductory classes may be negatively

affecting student retention and may negatively impact graduation rates (Ehrenberg &

Zhang, 2004; Jacoby, 2006; Jaeger & Eagan, 2009, 2011; Scott & Danley-Scott, 2015).

Upon review of 30,000 transcripts, Jaeger and Eagan (2009) found that students who

attended an introductory class taught by contingent faculty during their freshman year

were less likely to return for their sophomore year. Research also suggests that the rise of

contingent faculty teaching in higher education is negatively shaping student outcomes as

contingent faculty members are less supported within the institution and are not

adequately prepared to teach effectively (Ehrenberg & Zhang, 2004; Jacoby, 2006; Jaeger

& Eagan, 2009, 2011; Scott & Danley-Scott, 2015).

Teaching and learning in higher education have been fundamentally transformed

due to the persistent and increased use of contingent faculty. This transformation has

3

wide ranging negative implications (Korgan, 2016). Beyond student success and retention, "part-time faculty (a) exhibit less involvement in curriculum instruction and scholarship; (b) exhibit less autonomy from the institution and (c) appear less responsible for institutional behavior" (Landrum, 2009, p. 23). It has been found that grade inflation in higher education is related to instructor rank (Jackson, 1999; Sonner, 2010). Princeton University states that close to 90% of college students receive high grades (Sonner, 2010). In a recent study, contingent faculty members rated student evaluation as influencing their grading practices more frequently than full-time tenured faculty (Schutz et al., 2015). Additionally, studies have found there is a level of concern regarding the quality of instruction provided by contingent faculty. Contingent faculty members tend to curb controversial classroom discussions since an extension of their teaching contract relies on positive student evaluations (Fagan-Wilen, Springer, Ambrosino, & White, 2006; Robinson & Hope, 2013).

Discretionary utilization of contingent faculty provides undue stress on contingent faculty, as their continued employment may be vulnerable to student complaints and student evaluations. Consequently, many contingent faculty members may limit the number of reading and writing assignments, reduce rigor and may inflate grades in order to receive positive evaluations (Edmonds, 2015; Fredrickson, 2015; Kirshstein, 2015, Schutz et al., 2015; Sonner 2010). Contingent faculty members are often notified of a class assignment without adequate notice, often only a week or two before the class starts. This lack of adequate notice leaves little time for contingent faculty members to intentionally design a coherent and thoughtful course let alone prepare an adequate and meaningful syllabus (Goldstene, 2015). The last-minute hiring practice of contingent

4

faculty results in inadequate time for them to teach high-quality courses (Eagan Jr.,

Jaeger, & Grantham, 2015; Edmonds, 2015; Fredrickson, 2015; Goldstene, 2015; Kezar

& Gehrke, 2016; Kezar & Sam, 2010; Kirshstein, 2015; Street, Maisto, Merves, &

Rhoades, 2012). Coupled with low wages and little to no job security for contingent

faculty members, higher education institutions tend not attract high quality candidates

(Edmonds, 2015).

Most contingent faculty members do not receive access to pedagogical or

andragogic training prior to teaching nor are provided access to the resources and

technologies required to teach effectively (Eagan Jr. et al., 2015; Goldstene, 2015; Street,

Maisto, Merves, & Rhodes, 2012). Contingent faculty members receive little

departmental or institutional direction, including a campus orientation, and very few

receive access to library resources, clerical support, personal office space, telephones,

computers and the andragogic training required to be effective instructors (Eagan Jr. et

al., 2015; Street, Maisto, Merves, & Rhodes, 2012). At most, contingent faculty members

are provided a sample course syllabi and publisher-created instructor support materials

(Goldstene, 2015; Michael & Libarkin, 2016). Determining the perceived effective

teaching practices of contingent faculty members is critical for higher education

administrators so they can provide evidence-based orientation programs for new and

current faculty.

Purpose of the Study

The purpose of this study was to develop an instrument that measured the

perceived level of understanding of effective teaching practices of contingent faculty

members in higher education. Two research questions drove this instrument creation:

1. What factors in the areas of understanding of adult learning theory, assessment of learning strategies, classroom facilitation strategies and classroom management strategies are necessary to develop a measure of effective teaching practices in higher education?

2. To what extent does faculty-type differ in these sub-scales?

Definition of Terms

The terms used in the study are defined as follows:

- *Adjunct faculty.* (see Contingent Faculty) Professors that teach in a full-time or part-time non-permanent capacity or are graduate students that teach part-time as teaching assistants. Adjunct faculty are not assured of continued reappointment.

- *Adult Education.* An educational philosophy about learning and teaching based on the assumption that adults know why they need to know a concept, what concepts are necessary for them know and how the concept they are learning applies to their life.

- *Andragogy.* An educational philosophy about learning and teaching based on the assumption that adults learn differently than children.

- *Contingent Faculty.* Professors that teach in a part-time or full-time non-permanent capacity or are graduate students that teach part-time as teaching assistants. Contingent faculty are not assured of continued reappointment.

- *Tenured Faculty.* Professors that are hired on a permanent, full-time basis and are required to conduct research, teach courses and provide service to the

academic institution. Tenured faculty are assured continued reappointment by

the Board of Visitors, year after year.

- *Tenure-track Faculty.* Professors that are hired for a probationary period prior

  to being awarded tenure. They are hired on a full-time, non-permanent basis

  and are required to conduct research, teach courses and provide service to the

  academic institution. Tenured-track faculty are not assured of continued

  reappointment throughout the probationary period.

Assumptions

This research study was approached with the following assumptions:

1. Part-time contingent faculty members are entering the professoriate

   untrained in effective teaching practices;

2. Most contingent faculty members are unaware of effective teaching

   practices and will be more likely to seek out evidenced-based remediation

   if they better understood their strengths and weaknesses in this area;

3. Administrators are unaware of the teaching practices in use by their

   contingent faculty members and will be more likely to encourage

   evidence-based remediation training for contingent faculty members if

   they better understood each contingent faculty members' specific strengths

   and weaknesses as they relate to effective teaching;

4. The quality of teaching and learning experienced by students in higher

   education will more likely improve with evidenced-based remediation in

   effective teaching practices.

Significance of the Study

The quality of a nation depends upon the quality of its citizens. The quality of its citizens depends not exclusively, but in critical measure upon the quality of their education, the quality of their education depends more than upon any single factor, upon the quality of their teacher (Chauhan & Sharma, 2015, p. 1). Contingent faculty members are primarily hired because of their practice experience and very few come into the higher education environment with prior teacher training or teaching experience. Higher education institutions must assure students receive a quality teaching and learning experience throughout their higher education and limited research exists that identifies the effective teaching competencies for higher education faculty. This study is significant because it aims to design a diagnostic instrument to identify the methods of effective teaching present in their teaching faculty. This study established an instrument examines the teacher effectiveness practices in use by contingent faculty members in higher education. The results of the study provide evidence to improve teacher selection and teacher effectiveness practices in the higher education classroom.

Due to the limited literature on effective teaching practices in higher education and lack of empirical studies investigating effective teaching practices in higher education, this study and corresponding instrument will add to the understanding of effective teaching in higher education.

CHAPTER II

REVIEW OF RELEVANT LITERATURE

The purpose of this chapter is to provide an overview of the relevant theoretical and empirical literature related to effective teaching practices in higher education in order to inform the development of a higher education teacher practices inventory instrument.

Introduction

Today, approximately 70% of faculty teaching in higher education is contingent faculty (Background Facts on Contingent Faculty Positions | AAUP, 2018; Kezar & Gehrke, 2016). Contingent faculty members are professors that teach in a full or part-time non-tenured capacity or are part-time graduate teaching assistants (Curtis, 2014; U. S. Government Accountability Office, 2018). Often referred to as adjuncts, contingent faculty members are often industry professionals with current practice experience that teach on a non-permanent basis (Curtis, 2014; Kezar & Sam, 2011). While contingent faculty members bring relevant industry knowledge to the classroom, very few come with any teaching experience, pedagogical or andragogical knowledge (Landrum, 2009). Most of them are hired based on need and just in time, as very few receive an orientation or training (Michael & Libarkin, 2016). This lack of orientation and training ultimately

diminishes the quality of classroom instruction and may have a negative influence on students' decision to persist (Kezar & Gehrke, 2016; Paoletta, 2016).

According to a recent study, students who are taught on average by contingent faculty or graduate assistants are 1/3 less likely to persist, compared to those who are taught by full-time faculty (Jaeger & Eagan, 2011; Kezar & Gehrke, 2016; Landrum, 2009). Jaeger & Eagan noted that more than 50% of the credits taken by students during their first year were led by a contingent faculty member. Contingent faculty members are navigating the academy blind, and this is affecting the quality of teaching and learning in higher education (Paoletta, 2016).

In order to better understand the necessity of a higher education teacher practice inventory instrument, it is important to understand the theories and concepts that influence teaching in higher education. It is also important to understand the history of the professoriate in higher education in the United States and the reasoning behind the increase use of contingent faculty so higher education administrators can understand how the professoriate evolved and the implications associated with the increased use of contingent faculty. Understanding the history of faculty preparation in America, the teaching methods used in early America, current faculty development programs and faculty mentor programs informs this study by highlighting the absence of standardization or an assessment that provides evidence to adequately prepare faculty to teach effectively in higher education. Understanding faculty preparation in higher education along with outlining the effective teacher practices, effective teaching frameworks, including effective teaching in K-12 education is important to this study as it underscores the specific knowledge, skills and abilities required of faculty teaching adult students in

higher education institutions across America. Finally, understanding the quality assurance of teaching and learning practices currently in place in higher education provides insight into the immediate need for faculty to be better prepared to teach adult learners effectively (Paoletta, 2016).

The establishment of the higher education teacher practice inventory (HETPI) instrument will provide both faculty and higher education administrators evidence of effective teaching and gaps within teaching practices. This evidence can be used to inform each faculty member their areas of strength and areas of improvement as it relates to effective teaching practices in higher education, so they may improve these practice deficiencies.

Theoretical Framework

Effective teaching demands more than the acquisition of skills. To adapt to the educational needs of a particular class at a particular time, the teacher needs to understand the underlying theory of learning and teaching, so they can develop his or her methods (Svinicki & McKeachie, 2014, p. xix). The theoretical framework for this study includes Malcolm Knowles (1970) adult learning theory, David Kolb's experiential learning theory, Jack Mezirow's transformational learning theory, critical reflection theory, constructivism and adult education philosophy. These theories helped to inform the creation of the measurement instrument.

Adult learning theory. According to the Lumina Foundation, 38% of college undergraduates are over the age of 25 (Berman, 2017) and 100% of college-aged students are considered adults. Malcolm Knowles' concept of andragogy informs us that adults learn differently than children. Andragogy outlines the fundamental activities required of

teachers and in planning, realizing, evaluating, and correcting adult learning (Zmeyov, 1998). Andragogy is an important concept to understand in the context of teacher effectiveness in higher education as faculty, whether contingent or not, are teaching adult learners. Faculty should understand that adult learners have specific needs and adult learners must be taught in a way that aligns to these needs. Adults want to know why they need to know a concept, what concepts are necessary for them know and how the concept they are learning applies to their life (Knowles, 1970). Adults bring life experience to the learning environment and need to understand why they are learning so they can connect it to their own learning objectives. They prefer problem-centered learning experiences that are relevant, immediately impactful and can be applied in practice (Conti & Fellenz, 1991; Cox, 2015; Galbraith, 2004; Knowles, 1970; Merriman & Bierema, 2013; Paoletta, 2016, Pavlova & Sanger, 2016; Wagner, 1987).

Experiential learning theory. Daniel Kolb's experiential learning theory focuses on the learning experiences a person engages in and how those experiences contribute to the construction of knowledge (Kolb, 1984). Experiential learning theory outlines a four-stage cyclical process of learning. The first stage in the cycle is when the learner engages learning which is referred to as a concrete experience. The learner reflects on that experience and compares it against their current understanding, the second stage. In the third stage, the learner may confirm existing knowledge or form new ideas called the abstract conceptualization stage. In the fourth and final stage, the active experimentation stage, the learner applies the new information, resulting in new experiences. Kolb asserts different learners prefer a single learning style which reveals itself through a process of child and adult experiences. These experiences result in learning preferences which Kolb

outlines in his learning style inventory (Kolb, 1984). According to Kolb's theory,

learning is a process of constant adaptation with the ultimate goal of being able to obtain

a fully integrated personality (Canboy, Montalvo, Buganza, & Emmerling, 2014;

Merriam, Caffarella, & Baumgartner, 2007, Paoletta, 2016).

Experiential learning theory and the learning style inventory are important

concepts in understanding teacher effectiveness in higher education in that faculty and

students approach learning from their unique perspective and each has their own

preferred learning style. Experiential learning encourages faculty to facilitate learning by

creating and organizing experiences for students to learn. By designing faculty

development courses with these theories in mind, faculty can enhance their lessons to

teach to a variety of students' strengths, which enhances their ability to learn (Paoletta,

2016).

Transformational learning theory. Jack Mezirow's transformational learning

theory is "the process of using a prior interpretation to construe a new or revised

interpretation of the meaning of one's experience in order to guide future action"

(Mezirow, 1996, p. 162). Mezirow posits that adult learning occurs through phases where

meaning becomes clearer as the adult develops. Mezirow believes that learners develop

through a series of developmental forms to achieve their highest potential; the ability to

engage in transformative learning. Mezirow believes that adult education promotes

transformative learning by providing adults the opportunity to transform their lives

through critical reflection and problem solving (Mezirow, 2004; Kasworm, Rose, &

Ross-Gordon, 2010). This theory is important to faculty and faculty development as it

provides adults the opportunity to realize their potential by helping them acquire the

knowledge, skills and ability to become effective teachers. Providing faculty with time to reflect and apply the skills they are learning in their lives and work environment will be essential to their learning and development as effective faculty (Mezirow, 2004;Paoletta, 2016)

Critical reflection. Reflection is an important part of learning (Dewey, 1933). Critical reflection differs from mere reflection in that it is an extension of critical thinking. According to Mezirow, critical reflection is the process of inquiry that invites us as learners to think critically about our thoughts and ideas (Mezirow, 1990). Critical reflection then requires us to go a step further to challenge our thinking and assumptions. Used in higher education, critical reflection encourages students and faculty to critically assess what they are learning in order to interpret and provide meaning to their own subjective experience. Critical reflection is important to faculty in higher education as intentional critical reflection practices encourages learners to continually assess the way they think, decide, feel, and ultimately act on what they learn (Liu, 2015; Lundgren & Poell, 2016; Merriam & Bierema, 2014; Mezirow, 1990).

Constructivism. Constructivism is a philosophy of education introduced by Piaget which posits that learners use an active learning process to extract meaning from the world by filtering their experience through pre-existing knowledge that results in new knowledge creation (Bachtold, 2013). The new knowledge is self-constructed. Lev Vygotsky's social development theory is a primary foundation of constructivism. Vygotsky believed social interactions help learners find deeper meaning in new information. He believed that the social interaction is better received when it includes an instructor, coach, or older adult who has a greater understanding of the content than the

14

learner (Clark, 2017). Constructivism is important to faculty in higher education in that their role moves from teacher to facilitator in which they are responsible for supporting the process of meaning making for each individual learner and helping each learner discover their own truth (English, 2016; Merriam & Bierema, 2014; Muneja, 2015; Saroj & Anu, 2016; Schultz, 2015).

Adult education philosophies. The philosophy behind educating adults is different than educating children. It is important to adult learning to understand that an adult educator's personal philosophy about teaching and learning influences how they interact and facilitate learning with adult learners. There are five adult education philosophies that influence teaching and learning in higher education: Liberal, Humanistic, Behaviorist, Progressive and Radical. These adult education philosophies inform this study in that faculty in higher education approach teach through their unique, individual lens and philosophical approach to teaching adults. Higher education faculty are both adult learners and teachers of adult learners. They come to the classroom with their own learning style and teaching style that is rooted in their unique adult education philosophy. Understanding the varied perspectives higher education faculty may have related to teaching adult learners effectively allowed the researcher to better design an instrument that can provide evidence that will help to improve their individual teaching practice (Carpenter & Tait, 2001; Christie & de Graaff, 2017; Cox, 2015; Elias & Merriam, 2004; Galbraith, 2004; Milheim, 2011; Mulcrone, 1993; Walter, 2009).

Liberal. The liberal adult education philosophy centers on the process of developing an individual to be literate; both intellectually, morally and spiritually. Learners seek knowledge from experts; teachers are the knowledge expert responsible for

directing the learning process. Educators that prescribe to the liberal adult education

philosophy tend to utilize lecture, critical reflection and discussion when teaching.

Referred to as the oldest western philosophy of education, the liberal adult philosophy

was demonstrated and practiced by Socrates, Plato, Aristotle, and Piaget (Carpenter &

Tait, 2001; Christie & de Graaff, 2017; Cox, 2015; Elias & Merriam, 2004; Galbraith,

2004; Milheim, 2011; Mulcrone, 1993; Walter, 2009).

   Humanistic. The humanistic adult education philosophy focuses on the

development of people to be continuous, self-directed, life-long learners through group

facilitation. Both the educator and the learner are learning partners. Educators that

prescribe to the humanistic adult education philosophy tend to utilize experiential

activities, group activities and self-directed assignments to facilitate student learning.

Dating back to classical China, Greece, and Rome, the humanistic educational

philosophy became influential in the United States in 1950s. This philosophy was

demonstrated and practiced by Erasmus, Rousseau, Rogers, Maslow, Knowles, May,

Tough, and McKenzie (Carpenter & Tait, 2001; Christie & de Graaff, 2017; Cox, 2015;

Elias & Merriam, 2004; Galbraith, 2004; Milheim, 2011; Mulcrone, 1993; Walter,

2009).

   Behaviorist. The behaviorist adult education philosophy focuses on the

development of people to promote behavioral change that supports the survival of the

human species. The teacher is responsible to design the learning environment that

promotes student learning and the student is an active participant. Educators that

prescribe to the behaviorist adult education philosophy tend to use programmed

instruction that allows for practice and reinforcement of learning. The behaviorist adult

education philosophy was founded by John B. Watson and was demonstrated and practiced by B.F. Skinner, Thorndike, Watson, and Tyler. The practice of competency-based education is rooted in the behaviorist adult education philosophy (Carpenter & Tait, 2001; Christie & de Graaff, 2017; Cox, 2015; Elias & Merriam, 2004; Galbraith, 2004; Milheim, 2011; Mulcrone, 1993; Walter, 2009).

Progressive. The progressive adult education philosophy focuses on the development of people to promote social change through the transfer of practical knowledge and problem-solving skills. The educator is the organizer of the learning activity and the learner is the participant. Educators that prescribe to the progressive adult education philosophy tend to use experimental and problem-based instruction to promote learning. Although it originated in the16th century, the progressive adult education philosophy did not come to prominence in the United States until the 1900's with John Dewey who believed that learning should be active. Other practitioners that adopted the progressive philosophy were Spencer, Pestalozzi, Bergevin and Sheats (Carpenter & Tait, 2001; Christie & de Graaff, 2017; Cox, 2015; Elias & Merriam, 2004; Galbraith, 2004; Milheim, 2011; Mulcrone, 1993; Walter, 2009).

Radical. The radical adult education philosophy focuses on the promotion of social, political and economic change through education where both the educator and the learner are equal learning partners. Educators that prescribe to the radical adult education philosophy tend to use interactive group discussions and problem-posing to promote learning. Originating in the 18th century with Marxist thought, the radical philosophy was supported by Brameld, Holt, Kozol, Reich, Neill, Freire, Goodman, Illich, and Ohliger

17

(Carpenter & Tait, 2001; Christie & de Graaff, 2017; Cox, 2015; Elias & Merriam, 2004; Galbraith, 2004; Milheim, 2011; Mulcrone, 1993; Walter, 2009).

Related empirical studies

Recent empirical studies support the development of an evidence-based approach to identifying effective teaching practices in higher education. Recent studies also showcase lack of teaching education by faculty and highlight the trial-and-error nature of learning how to teach. Studies also reveal adult learning strategies such as self-directed learning, group discussion and experiential learning opportunities that are preferred among college-aged students, without specially being named as such. Studies also reveal the lack of formal understanding of various assessment techniques and effective classroom management behaviors. The following empirical studies illustrate these concepts:

Professional development needs of community college business teachers: a qualitative investigation (Dean, 2015). This recent qualitative study investigated the perceived professional development needs of contingent community college business faculty. The findings of the study indicate that business faculty desire further training to not only work effectively with students from all age groups and socioeconomic backgrounds, but to better understand the technology, teaching methods, and theory required to be effective in a classroom settings (Dean, 2015, p. 39). The study found that seven out of the nine study participants used lecture as the main form of instructional strategy and there was little evidence of participants being shown how to provide effective instruction. The study states that while faculty development centers provide support, they often lack an empirically based structure or framework. Faculty desire an

18

evidence-based approach to professional development that would help faculty to teach effectively versus learning through trial and error (Dean, 2015).

Faculty perspectives of instructional strategies in criminal justice classrooms (Benson, 2018). This 2018 qualitative study explored the perceptions of contingent undergraduate criminal justice faculty regarding in-class pedagogical processes and found five themes emerged from their analysis. The study found that the faculty studied lacked formal teaching training. However, participants indicated their evolution as a teacher developed over time and reflects their past academic and practical field experience and personality. Additionally, most faculty indicated that they use active and experiential learning techniques in their classrooms even though these were not intentional strategies (Benson, 2018). While study participants indicated a dislike of summative assessment strategies such as exams, they did indicate a preference for formative assessment techniques that were observable. The study findings also revealed three primary instructional techniques; visual delivery, groupwork, and interactive scenario/case study experiences (Benson, 2018).

Investigating how participatory action research and the use of assessment instruments can support college instructors' science assessment literacy (Presley, 2015). This participatory action research study found that the use of assessment instruments helped faculty develop learning activities and labs that aided student learning. Second, assessment instruments helped faculty incorporate higher level thinking activities into their lessons and third, having access assessment resources helped validate the faculty members' understanding of students (Presley, 2015). This study also revealed that assessment instruments helped science faculty develop learning activities and labs,

incorporate higher level thinking questions into their instruction and influenced faculty members' understanding of student knowledge (Presley, 2015).

Evaluation of the effectiveness of three instructional modalities for best practices of military training and education (Manrique, 2015). This 2015 quantitative study examined three different instructional delivery modalities; face-to-face, digital and web-based instruction in order to identify the best practices for training and education of military personnel. The findings revealed that students who received face-to-face instruction had higher course success and course satisfaction compared to participants who received digital or web-based instruction. It is also interesting to note that this study found participants who had instructors with 25 years of teaching experience had significantly higher final grades than participants who had instructors at other levels of experience (Manrique, 2015).

Professional Development Needs of Faculty Members in an International University in Thailand. This 2015 qualitative study at an international university in Thailand sought to understand faculty members' needs and preferences in the undergraduate department to help the administration offer appropriate PD programs. The findings revealed 4 themes: "(a) a desire to learn specific content such as classroom management techniques, pedagogy for university-level students, assessment design, and instructional technology; (b) a desire to observe and apply new techniques to better engage diverse students in large classes; (c) a desire to learn collegially to share context relevant information; and (d) expectations from the university administration"(Jeannin, 2016, p. 4).

These recent empirical studies highlight the need for an evidence-based approach to identifying effective teaching practices in higher education that I am proposing through this study; the development of the Higher Education Teaching Practice Inventory instrument. The findings of these recent studies highlight the need to identify teaching education level, understanding adult learning strategies, classroom facilitation skills, various assessment techniques and effective classroom management behaviors. Together with the literature they inform the conceptual framework for this study.

History of the Professoriate in Higher Education in the United States

Higher education in the United States, its institutions and its mission, expanded and evolved over the centuries since the early colonists arrived on America's soil. The professoriate is no exception. It too has changed and evolved over the years. It is important to this study to understand how the professoriate grew in Colonial America as it is the cornerstone of our higher educational system.

Higher education institutions in early Colonial America, their structure and their curriculum, were modeled on European colleges. They served to educate clergymen for the church and citizens for public leadership by "acculturating the young, passing on the wisdom of the classics and preparing people" (Cohen & Kisker, 2010, p. 21) for service. The goal of these early colleges centered on teaching, not on learning as the early settlers found no issue with using the school to prepare their future church ministers who were only required to preach. The early rules established by Harvard University in 1636 stated that the goal of the institution was "Everyone shall consider the Mayne End of his life and studies to know God and Jesus Christ, which is Eternal Life" (Brubacher & Rudy, 1968, p. 8). However, Yale, in 1701, expanded within its mission that it was a place

where youth would be taught arts and sciences, so they would be prepared for public employment, both in church and in the civil state (Brubacher & Rudy, 1968).

Aligned with these goals, the early faculty of these colleges consisted primarily of clergymen and tutors; recent graduates who taught as they were awaiting positions as ministers in the church. Early college faculty was small and consisted of a few professors and tutors. Each were responsible to teach the entire curriculum, with the professors teaching in specialty areas such as philosophy, languages and mathematics. Tutors tenure was approximately three years, whereas professors completed their careers at one single institution. These professors were generalists and were expected to lead students through standardized textbooks using lecture and recitation as the primary facilitation strategy (Brubacher, 2017; Cohen & Kisker, 2010; Lowe, 2009; Thelin, 2011).

According to Thomas Jefferson, a founding father and founder of the University of Virginia in 1825, believed that a university had a duty to its students. He believed that everyone had moral sense and that people, regardless of their status, could determine right from wrong as easily or better than a professor and therefore people who held public trust should pursue learning to the highest degree. This belief separated the University of Virginia from the rest of the early colleges as it broke from established tradition and insisted their professors be experts in their field of study (Brubacher, 2017; Cohen & Kisker, 2010; Lowe, 2009; Thelin, 2011).

By 1800, while tutors remained the majority educators in higher education institutions, full-time professorships emerged in prominence with professors outnumbering tutors by the end of the nineteenth century. The rise in the number of professorships was due to the advanced skill required to teach advanced curriculum that

included mathematics, natural science and the arts. It was during this time that faculty allegiance changed from allegiance to the institution to allegiance to their field of study. More than half of the full-time faculty were publishing and participating in professional organizations (Brubacher, 2017; Cohen & Kisker, 2010; Lowe, 2009; Thelin, 2011).

Called the University Transformation Era, the period of 1870 through 1944 marked an important era in higher education in the United States. During the early years of this period, approximately 250 colleges existed in America and employed a little more than two dozen instructors consisting of both professors and tutors. However, it was during this period that the Morell Act of 1862 also known as the Land Grant College Act was enacted that established "at least one college where the leading object shall be, without excluding other scientific and classical studies, and including military tactics to teach such branches of learning as are related to agriculture and the mechanic arts, in such manner as the legislatures of the States may respectfully prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life" (A Century of Lawmaking for a New Nation: U.S. Congressional Documents and Debates, 1774 - 1875, 1862, p. 504). This resulted in the establishment of professional schools, including the undergraduate and graduate colleges and paved the way for the rise in academic (Brubacher, 2017; Cohen & Kisker, 2010; Lowe, 2009; Thelin, 2011).

The time faculty dedicated to teaching and research differed within research and liberal arts colleges. Faculty working at prestigious institutions receiving reduced teaching hours in order to provide faculty more time for research. However, professors were still required teach and be focused both on teaching and scholarship. In 1915, the

American Association of University Professors (AAUP) was formed which addressed

issues such as academic freedom and tenure within the professoriate. The practice of

ranking instructors from instructor to assistant professor, associate professor and

professor also took hold (Brubacher, 2017; Cohen & Kisker, 2010; Lowe, 2009; Thelin,

2011).

As the amount of colleges grew, so did the number of faculty. This was due to the

increasing emphasis on college majors. Over the next 30 years, the growth in colleges

throughout the nation expanded. During World War II, the looming thought of 15 million

service men and women potentially being unemployed at the end of the war was a cause

for concern with the Department of Labor. On June 22nd, 1944, just days after the D-day

invasion of Normandy, President Franklin D Roosevelt signed the Servicemen's

Readjustment Act, otherwise known as the GI bill into law. The GI Bill provided veterans

of the World War II money for college education. "This act provided tuition, subsistence,

books and supplies, equipment, and counseling services for veterans to continue their

education in school or college" (Servicemen's Readjustment Act, 1944). Approximately

8,000,000 veterans received educational benefits to attend colleges and universities. The

number of degrees awarded by US colleges and universities more than doubled between

1940 and 1950 (Brubacher & Rudy, 1968; Cohen & Kisker, 2010; Lowe, 2009).

This period also saw shifts within the makeup of the faculty as the percentage of

part time instructors grew significantly during this period. These part time instructors

were not serving as assistants as they had in the past. Instead, they were independent

instructors that had very few responsibilities and received low pay (Brubacher & Rudy,

1968; Cohen & Kisker, 2010; Lowe, 2009).

Another noticeable change during this period was the emergence of the community college. Faculty with extensive teaching experience were recruited from K-12 education to hold these new faculty positions within the community college system Interestingly, history has shown that very little has changed regarding the role and responsibilities of the professoriate in higher education. One significant change has been the increase use of part-time, and non-permanent faculty (Brubacher & Rudy, 1968; Cohen & Kisker, 2010; Lowe, 2009).

History of Contingent Faculty in the United States

In 1930, three-quarters of faculty at universities were hired from within (Geiger, 1986). By 1940, most of the faculty teaching received all or most of their graduate-level education from the same institution. Graduate students employed as teaching assistants often moved up through the ranks to become faculty. In 1960, contingent faculty (non-permanent faculty) made up about one-third of the total faculty with very few yet to complete or hold graduate degrees. In the 1970's, this new segmented structure of faculty consisting of full-time tenure-track faculty and full-time non-tenure track faculty emerged. This structure later evolved to include part-time non-permanent track faculty. Tenured-track faculty, full-time non-permanent faculty, part-time non-permanent faculty, and graduate student teachers are often referred to as continent faculty (Cohen & Kisker, 2010; Curtis, 2014; Jaeger & Eagan, 2011; Paoletta, 2016; Street, Maisto, Merves, & Rhoades, 2012; Zhang, Ehrenberg, & Liu, 2015).

The use of contingent faculty in higher education has been increasing over the last three decades (Fagan-Wilen, Springer, Ambrosino, & White, 2006; Liu & Zhang, 2013). Prior to 1970, 78.3% of faculty in higher education consisted of tenured and tenure-track

ranked faculty with the remaining 21.7% was non-permanent full or part-time faculty

(Kezar & Maxey, 2014)   According to Zhang, Ehrenberg, & Liu (2015), in 1975, part-

time faculty represented about 30% of the academic labor force in the United States; by

2005, this proportion had increased approximately 18%, to 48%, a proportion much

higher than the rest of the U.S. workforce (Zhang et al., 2015). In 2009, approximately

three-quarters of the 1.8 million faculty body in the United States were contingent faculty

(Powers, 2016). In the fall of 2011, the US Department of Education, National Center for

Educational Statistics Integrated Postsecondary Education Data System (IPEDS) system,

indicated there were 1,852,224 total university professors in higher education with

1,415,922 or 76.4% being identified as contingent faculty (Curtis, 2014). Much of the

academic labor force in the United States consists of contingent faculty (Kezar & Sam,

2010). The trend of hiring contingent faculty will continue to increase throughout higher

education due to a variety of reasons (Paoletta, 2016).

Reasons for Increase in Contingent Faculty in Higher Education

There are many reasons for increased use of contingent faculty in higher

education. Historically, contingent faculty have played an important role in higher

education by bringing their practical experience into the classroom (Fagan-Wilen et al.,

2006; Jaeger & Eagan, 2009, 2011; Kezar & Maxey, 2014). Once used only to fill a

temporary need or aid during high enrollment periods, universities increasingly use

contingent faculty if they are unable to hire permanent faculty and to save money (Fagan-

Wilen et al., 2006; Jaeger & Eagan, 2009, 2011; Kezar & Maxey, 2014). Universities use

contingent faculty if they are unable to hire more permanent faculty (Fagan-Wilen et al.,

2006; Jaeger & Eagan, 2009, 2011; Kezar & Maxey, 2014; Kezar & Gehrke, 2016, Paoletta, 2016).

Shortage of PhD professionals. One contributing factor to the increased use of contingent faculty is the shortage of Ph.D. professionals in specific disciplines (Jaeger & Eagan, 2009, 2011). A joint report from the American Institute of Certified Public Accountants (AICPA) and American Accounting Association (AAA) stated that 500 to 700 accounting faculty retire each year. While new accounting PhDs granted are up from 105 in 2003 to 124 in 2010, the levels of PhD professionals available are not enough to replace retiring faculty. According to Hunt & Jones (2015) the current supply of accounting faculty is low due to insufficient new PhDs available to take the place of the retirees (Hunt & Jones, 2015).

The average age of doctorly-prepared professors is 57 years of age with master-level educators averaging 48 years of age. Universities are not producing enough doctoral-level candidates to meet the current demand in higher education (Kezar & Maxey, 2014). The factors contributing most to the shortage of doctoral-level faculty include 1) the rate of retirement for current doctoral-level faculty, 2) the significant time and cost associated with earning a doctorate degree and 3) the hiring demands associated with accreditation requirements. Many schools have coped with the shortage by hiring part-time or adjunct instructors, who do not generally need to hold doctorates, to teach classes (Fagan-Wilen et al., 2006; Hunt & Jones, 2015; Jaeger & Eagan, 2009, 2011; Kezar & Maxey, 2014; Kezar & Gehrke, 2016, Paoletta, 2016).

The PhD faculty shortage is not unique to business programs. The nursing field is also suffering a PhD faculty shortage. This is due to an aging workforce nearing

retirement and limited faculty with the appropriate degree credentials required to work. According to Zbierajewski, Kachmarik, & O'Dell (2007), clinical and private sectors opportunities contribute to limited pool of available PhD qualified candidates in Nursing. Clinical and private sectors positions offer substantially higher compensation which consequently pulls current and potential educators away from academia. The shortage of qualified faculty is not unique to America, European and African countries are also faced with limited resources and limited teacher supply (Bishop, Boyle, Carpenter, & Hermanson, 2016; Hunt & Jones, 2015; Paoletta, 2016; Zbierajewski et al., 2007).

In a recent study conducted by Hunt & Jones (2015), fifty-seven schools were unable to find qualified tenured faculty to fill the vacancies open in the year they occurred. Educational institutions that find themselves unable to find qualified faculty have several choices. In their study they found universities take nine different steps to fill the gap. One choice is to increase the use contingent faculty. Hunt states that universities use non-permanent contingent faculty; adjuncts, instructors, and visiting professors if they are unable to hire permanent faculty. Other choices include creating overloads for tenure-track faculty, increasing class sizes, reducing sections of classes, cancelling classes and having PhD students teach the course (Hunt & Jones, 2015).

Cost savings. It has been widely reported that the traditional revenue stream that sustains higher education institutions, federal funding, is eroding. This significant reduction in state appropriations has resulted in the implementation of innovative cost-saving measures throughout many higher education institutions. Consequently, colleges and universities have had to make difficult decisions to balance their budgets. One of these difficult decisions is to reduce salaries which is achieved through composition

28

changes within the faculty. These composition changes have resulted in higher education institutions using adjunct faculty members as a short-term solution to these state budget problems as opposed to hiring permanent faculty (Cheslock & Callie, 2015; Fagan-Wilen et al., 2006; Hunt & Jones, 2015; Kezar & Gehrke, 2016; Paoletta, 2016).

Institutions have moved from permanent tenured professors toward hiring non-permanent contingent faculty, as these contingent faculty are paid significantly less than their tenured counterparts and do not receive the same level of benefits. This shift in hiring practices is reflected in recent years as the landscape of faculty employment in higher education has changed in two ways; employment status (i.e., full-time vs. part-time) and tenure eligibility. Universities use adjuncts, instructors, visiting professors, and other non-permanent tenured-track faculty if they are unable to hire more permanent faculty (Cheslock & Callie, 2015; Fagan-Wilen et al., 2006; Hunt & Jones, 2015; Kezar & Gehrke, 2016; Paoletta, 2016; Roberts, Chrisman, & Flowers, 2013; Zhang et al., 2015).

Differences between tenured and contingent faculty. There are many differences between tenured and contingent faculty. The dominate areas that differentiate tenured faculty from contingent faculty reside in the permanency of the position and the proportion of teaching responsibility, years of teaching experience, level of courses taught, grade distribution and access to faculty services. Full time, tenured faculty hold permanent positions with duties primarily consist of research, teaching and service with research taking precedence. Contingent faculty hold non-permanent positions with duties being primarily instructional. Tenured faculty typically teaching upper level courses

while contingent faculty teach lower level courses (Fagan-Wilen et al., 2006; Paoletta, 2016; Rossing & Lavitt, 2016; Sonner, 2010).

The required qualification for higher education faculty, regardless of their tenured status, is primarily content knowledge in the form of a masters or terminal degree in the subject they are planning to teach. New faculty members, both tenured and contingent faculty, are often hired with no prior teaching experience or knowledge of pedagogy and very few higher education institutions require demonstrated teaching ability. Full-time faculty (both tenured and contingent) must be "qualified through professional preparation and experience in their respective academic areas as determined by the institution," (Turocy, 2015, p. 329). Tenure is a privilege; obtained through peer review by those proved to be scholars (Fagan-Wilen et al., 2006; Kezar & Sam, 2011; Paoletta, 2016; Turocy, 2015).

The use of contingent faculty in higher education is a trend that is growing, not declining. While content knowledge is essential, content knowledge alone does little to prepare faculty to educate. It is imperative to both higher education administrators and faculty to focus on developing effective teaching faculty, regardless of their rank (Fagan-Wilen et al., 2006; Jensen, 2011; Kezar & Gehrke, 2016; Michael & Libarkin, 2016, Paoletta, 2016; Rieg & Wilson, 2009).

Faculty Preparation in Higher Education

Students are usually unaware that college professors are not trained to be teachers. Unfortunately, teaching is where professors receive the least amount of training, if any (Fertig, 2016). The problem with teaching, as Orville Taylor surmised in 1834, was that 'teachers [had] not made instruction their business—their profession" (Schneider, 2013,

p. 618). Understanding the history of faculty preparation in America, the teaching methods used in early America, current faculty development programs and faculty mentor programs informs this study by highlighting the absence of standardization or an assessment that provides evidence to adequately prepare faculty to teach effectively in higher education.

History of faculty preparation in the United States. Beginning with Harvard College in 1636 until the early 1800s, tutors were recruited from among recent graduates and were considered qualified to teach all subjects. Historically, professors and tutors who formed the early professoriate were not educated to be teachers. Although they believed in the importance of transferring knowledge effective there was no formal record of teaching methods used at the collegiate level (Brubacher & Rudy, 1968; Cohen & Kisker, 2010; Lowe, 2009).

Both tenured faculty and contingent faculty have varying experiences in learning how to teach and both rarely have any formal education to prepare them to teach. Faculty tend to teach the way they were taught. To help mitigate this deficiency in teaching knowledge, universities have instituted new faculty development programs and faculty orientation programs. These programs are primarily for new full-time faculty, not part-time contingent faculty (Lindbeck & Darnell, 2008; Robinson & Hope, 2013; Scarlett, 2001).

Teaching methods in the early United States. In the early days of American higher education, descriptions of teaching methods used by professors and tutors were not well documented. Since books were scarce, tutors utilized lecture and recitation as teaching methods (Brubacher & Rudy, 1968; Cohen & Kisker, 2010). Scholasticism, an

early pedagogy that taught students to argue "from reason, experience, and authority" also dominated early higher education in America (What is Scholasticism?, 2018). Rhetoric was taught so that students could compose disputations and argue convincingly (Cohen & Kisker, 2010).

As the professorship evolved so did the quality of college work including the methods used for instruction. Recitation and disputation were left behind in preference of the lecture method and the laboratory. While the Socratic questioning method was utilized, most professors relied on the teaching methods they had experienced as students. During the mid-1920's, laboratory coursework became a requirement for students in the field of science and written examinations replaced recitations and were given to entire classes of students. Examinations became standard during this time as did a standard grading system (Brubacher & Rudy, 1968; Cohen & Kisker, 2010; Lowe, 2009).

During the Mass Higher Education Era that followed WWII, instruction in higher education experienced many innovations. While lecture and lab were the predominant instructional methods, faculty were able to design lessons that aligned to the subject area as well as to the students in the class. This era ushered in self-paced and small group instruction. Instructor evaluations were rare, with the only measure of instruction was student evaluations (Brubacher & Rudy, 1968; Cohen & Kisker, 2010).

Today's higher education academic environment requires active learning strategies supported by a variety of assessment techniques (Atkinson & Lim, 2013; Elder, 2014; Payton, 2015, Rawlusyk, 2018; Scott & Danley-Scott; 2015). New student-centered facilitation methods have emerged in higher education including problem-based learning (PBL) and case-based instruction (CBI), and have been universally adopted or

practiced throughout the higher education classroom. However, the lecture remains the dominate facilitation technique used in higher education (Conti & Fellenz, 1991; Cox, 2015; Pavlova & Sanger, 2016; Rico & Ertmer, 2015).

New faculty orientation. Employee orientations lay the foundation for employee success. Ranging from 1 hour to 3 days, new faculty orientations are used in higher education to convey the institution's vision, values, and philosophy (Law et al., 2012; Lindbeck & Darnell, 2008; Morin & Ashton, 2004). New faculty orientations tend to focus on organizational issues, promotion and tenure, curriculum materials and technology (Law et al., 2012). The three most common topics covered in new faculty orientations are technology, student affairs presentations, and understanding the research process and Internal Research Board. These topics prepare new faculty to work within the structure and policies of the institution, rather than preparing new faculty to teach, research and provide service. New faculty orientations should include information on how to be successful teachers and scholars and should be used to help improve teaching effectiveness of new faculty members (Lindbeck & Darnell, 2008; Morin & Ashton, 2004).

Despite the institutions focus on administrative topics over teaching preparation, an orientation may not be a necessary component when integrating new faculty to an institution and consequently an orientation might not be offered (Morin & Ashton, 2004; Scott & Scott; 2015). A recent review of 100 institutional websites confirms this as of the 100 websites reviewed, only 53% referenced new faculty orientation programs (Lindbeck & Darnell, 2008). Of that 53%, there lacked any reference to new faculty orientation specifically for the largest contingent of faculty in higher education today; part-time

adjuncts or contingent faculty (Lindbeck & Darnell, 2008; Mujtaba & Gibson, 2011). A survey of 1,645 adjunct faculty in the state of Maryland indicated adjunct faculty "would like an orientation to the school, the department and the services provided at the college" and be exposed to the same training opportunities as their full-time faculty counterparts (Dolan, Hall, Karlsson, & Martinak, 2013, p. 38).

Faculty development programs. Faculty development programs offered by higher education institutions focus on a few main topic areas: instructional development; professional and career development; and organization or institutional development. Instructional development focuses on developing instructional skills such as the use of instructional technology, small group teaching methods, media and technology integration into lesson plans, course and curriculum design (Robinson & Hope, 2013; Scott & Scott, 2015). Professional and career development programs focus on individual faculty goals related to their professional career growth as educators, researchers, and university administrators (Lindbeck & Darnell, 2008; Kiffer & Tchibozo, 2013). Organization or institutional development focuses on topics related to institutions internal processes and procedures (Kamel, 2016).

While faculty development programs provide faculty with instructional development knowledge, the overall quality of teaching in the classroom has not improved. This is due to professor's desires to receive tenure. Non-tenured professors tend to spend more time on research and publishing then on updating their knowledge and skills for teaching adult learners (Robinson & Hope, 2013). In a recent study of 200 of full and part-time faculty members, 80% of faculty indicated they were not required to participate in a teaching preparation course in their graduate program. 60% of faculty has

not participated in any course, post graduate degree that would help develop their teaching competency (Robinson & Hope, 2013). According to Lindbeck & Darnell (2008), only one-third of the institutions provided teaching support to new faculty outside of an initial orientation program (Lindbeck & Darnell, 2008).

A recent review of U.S. master's degree programs revealed that most master's degree programs fail to cover teaching related topics such as curriculum development, assessment techniques, teaching and learning strategies, teaching philosophy, or pedagogy (Santisteban & Egues, 2014). Most faculty agree there is a need for training in andragogy to be prepared to teach in higher education (Robinson & Hope, 2013; Santisteban & Egues, 2014). One professor stated that faculty at the college level need to understand teaching strategies including how students learn, and how to assess student learning (Robinson & Hope, 2013). A survey of 1,645 part-time contingent faculty (adjunct faculty) in the state of Maryland indicated adjunct faculty desired additional training related to classroom teaching including; student assessment techniques, classroom technology, working with diverse student populations and learning styles and strategies for fostering critical thinking (Dolan et al., 2013, p. 38). Smollin & Arluke (2014) believe that while quality instruction is important at the university level, training and support in teaching is not standardized and instructors deal with teaching challenges on their own (Smollin & Arluke, 2014). Faculty development programs provide for improved behavioral changes in faculty, yet they are not enough to address the needs of the entire faculty. Faculty development programs are primarily voluntary and scheduled to attract permanent faculty participation, not contingent faculty.

Faculty mentoring programs. The need for faculty mentoring programs and their impact on improving teaching in higher education has been well documented (Michael & Libarkin, 2016; Poorman & Mastorovich, 2017). Mentoring, as it relates to higher education faculty development, is defined as "a reciprocal relationship between a more experienced faculty member who guides, coaches, supports and acts as a role model for new, less experienced faculty in which both partners experience shared learning" (Falzarano & Zipp, 2012, p. 118). While mentoring programs tend to be beneficial for new faculty, mentoring relationships are challenging to maintain over time (Falzarano & Zipp, 2012; Faurer et al., 2014; Gies, 2013). Mentoring relationships evolve through a series of phases beginning with developing trust, discerning roles and responsibilities and dealing with potential conflict as the relationship grows. Eventually the relationship emerges into a phase of mentee independence and concludes with both the mentor and mentee reflecting on the mentee's proficiency and competence (Gies, 2013).

While many faculty mentoring programs discuss faculty to faculty programs that focus primarily on new tenure-track faculty, very few articles reference other contingent faculty programs. However, in a recent study that included part-time faculty impact of a faculty mentoring program on instructional staff was looked at. Of the instructors interviewed, over 75% of respondents indicated that access to a peer mentor (facilitator), participation in an new faculty orientation and the ability to have a one-on-one consultation with an experienced faculty member were beneficial aspects of the program (Brady & Spencer, 2018). One exemplar stated "By far the greatest asset of the TEAM (Teaching Excellence and Academic Mentorship) program was having a go-to person for beginning mentorship needs, help, and direction" (Brady & Spencer, 2018, p. 31). Areas

that indicated need for improvement varied among faculty rank. For example, part-time

instructors indicated there was "No formal support beyond first year"; Doctoral students

indicated there was "Not enough training on teaching"; and new tenure-track faculty

indicated "Faculty have different pressures and needs beyond teaching" (Brady &

Spencer, 2018, p. 32). The researchers concluded that "new part-time instructors felt as

though teaching was not valued at the same level as research focused activities" (Brady

& Spencer, 2018, p. 33) and "While most schools state that they value teaching, very few

institutions and schools provide mentorship supports and resources to new instructors,

especially part-time instructors" (Brady & Spencer, 2018, p. 35).

Effective Teaching Practices in Higher Education.

Learning lies at the center of every intuition of higher education. To highlight

how central learning is to universities, the Higher Learning Commission's (HLC) (the

body responsible for accrediting colleges and universities in a 19-state region of the

United State') mission is "Serving the common good by assuring and advancing the

quality of higher learning" (About HLC, 2018). According to the HLC, effective teaching

practices enables quality learning. Effective teaching practices in higher education can

be perceived and demonstrated in a variety of ways. Described as qualities, principles,

competencies or practices, effective teaching practices are the actions used to disseminate

knowledge from and between the teacher and the student (Adult Education Teacher

Competencies, 2014; Hanson, 2016).

Effective teaching practices in higher education include: 1) Planning lessons that

align to measurable learning outcomes, 2) Effectively communicate learning goals; 3)

Using active learning techniques; 4) Utilizing a variety of assessment techniques; 5)

Providing prompt and useful student feedback; 6) Utilizing consistent grading practices; 7) Engaging students by connecting theory to practice; 8) Recognizing diverse learners and learning styles and 9) Using learner feedback to continually modify teaching plans (ACUE's Effective Practice Framework©, 2017; Adult Education Teacher Competencies, 2014; Caffarella & Daffron, 2013; Chickering & Gamson, 1987; Fink, 2013; Hanson, 2016; Struthers, MacCormack, & Taylor, 2018; Svinicki & McKeachie, 2014).

Course planning, lesson planning and syllabi. Planning lessons that align to measurable learning outcomes includes designing learner-centered instructional modules that enable the facilitator to deliver content that connects to learning outcomes. Course learning outcomes should be specific, measurable, sequenced and actionable. Lessons should be designed to build on one another. The facilitator should utilize multiple strategies geared toward multiple learning modalities for presenting and engaging various types of learners. (ACUE's Effective Practice Framework©, 2017; Adult Education Teacher Competencies, 2014; Caffarella & Daffron, 2013; Chickering & Gamson, 1987; Fink, 2013; Hanson, 2016; Struthers, et al., 2018; Svinicki & McKeachie, 2014).

Effectively communicating learning goals within the classroom includes preparing an effective syllabus and planning effective class sessions. An effective syllabus should communicate learning goals and essential information that facilitates student success. An effective syllabus is student-centered and explains to learners in clear language how day-to-day instruction, assignments, and projects lead them to achieving the course learning goals. Planning effective class sessions includes designing modules that are segmented with activities, assessments, summary activities that promote a sense

of community and comradery among learners to encourage peer-to-peer learning.

Effective class sessions should include an effective start, middle and end with each

segment designed to positively impact student learning (ACUE's Effective Practice

Framework©, 2017; Adult Education Teacher Competencies, 2014; Caffarella &

Daffron, 2013; Chickering & Gamson, 1987; Fink, 2013; Hanson, 2016; Struthers, et al,

2018; Svinicki & McKeachie, 2014).

Active learning and assessment. Active learning refers to a broad range of

teaching strategies which engage students as active participants in their learning during

class time with the facilitator. Often active learning involves students working together

during class, but may also involve individual work and/or reflection (Freeman et al.,

2014; Owens et al., 2017; Prince, 2004). Active learning techniques includes engaging

students actively in their own learning through relevant, thought-provoking questions;

discussions; problems; and tasks that stimulate interest. This includes providing a

rationale for activities, utilizing a variety of instructional activities and examples to

improve conceptual understanding and skill development. Active learning techniques

provides students with various opportunities for classroom interaction, including group

and individual activities, when appropriate (ACUE's Effective Practice Framework©,

2017; Adult Education Teacher Competencies, 2014; Caffarella & Daffron, 2013;

Chickering & Gamson, 1987; Fink, 2013; Freeman et al., 2014; Hanson, 2016; Owens, et

al., 2017; Prince, 2004; Struthers, et al., 2018; Svinicki & McKeachie, 2014).

Assessment, as it relates to higher education, is the tool used to evaluate a

student's performance and to monitor the success of educational courses and programs to

determine if they are meeting their stated goals (Jones, 2009). Assessment techniques

include incorporating check-in points throughout the class to provide students with opportunities to clarify their understanding, utilizing advanced questioning techniques, like the Socratic Method, that enable students develop their own critical thinking and problem-solving skills while checking for student understanding. Formative and summative assessments such as quizzes, tests, projects and activities help evaluate student performance and provide direct evidence of the student's ability to independently demonstrate the learning goal. Effective assessment techniques provide students with prompt and useful feedback that includes feedback on student progress related to course learning goals. This feedback should be clear and provide encouragement about the steps needed to continue moving toward meeting the course learning goals (ACUE's Effective Practice Framework©, 2017; Adult Education Teacher Competencies, 2014; Caffarella & Daffron, 2013; Chickering & Gamson, 1987; Fink, 2013; Hanson, 2016; Struthers, et al., 2018; Svinicki & McKeachie, 2014).

Effective assessment also includes grading policies and practices. Consistent grading practices are fair and documented. Faculty should set grading policies for late assignments and extra credit and clearly communicate these grading policies to students. Faculty need to utilize appropriate grading tools such as tests, checklists and rubrics that align to the assignment and help provide meaningful feedback to the student (ACUE's Effective Practice Framework©, 2017; Adult Education Teacher Competencies, 2014; Caffarella & Daffron, 2013; Chickering & Gamson, 1987; Fink, 2013; Hanson, 2016; Struthers, et al., 2018; Svinicki & McKeachie, 2014).

Classroom management. Keeping students engaged involves creating and maintaining a classroom environment that supports learning. Faculty must work to make

course content relevant by incorporating a variety of assessment and instructional strategies to meet the needs of different types of learners. They should provide students with opportunities to apply their knowledge and skills using real-life and classroom projects utilizing independent and collaborative problem-solving activities. Faculty need to ensure students are treated with respect and have access to services that can help them achieve the course learning goals (ACUE's Effective Practice Framework©, 2017; Adult Education Teacher Competencies, 2014; Caffarella & Daffron, 2013; Chickering & Gamson, 1987; Fink, 2013; Hanson, 2016; Struthers, et al., 2018; Svinicki & McKeachie, 2014).

Diverse learners and learning styles. Recognizing diverse learners involves choosing classroom materials and instructional activities that respect learners' identities as individuals. Faculty must utilize differentiated instructional techniques that addresses diverse learning modalities, abilities, needs, and interests. They must utilize varied instructional activities and examples to encourage student's conceptual understanding and skill development. Faculty need to provide critical thinking activities that require may require suspending judgment, coming to consensus, discussing alternatives, prioritizing, negotiating, problem-solving, and evaluating skills (ACUE's Effective Practice Framework©, 2017; Adult Education Teacher Competencies, 2014; Caffarella & Daffron, 2013; Chickering & Gamson, 1987; Fink, 2013; Hanson, 2016; Struthers, et al., 2018; Svinicki & McKeachie, 2014).

Learner feedback. Using learner feedback to continually modify teaching plans includes identifying patterns of student achievement on key assignments and assessments to inform instruction; conducting pre-, mid- and end-of-semester feedback from students;

41

using colleague observations to evaluate areas where one's own pedagogical and/or content knowledge needs to be strengthened (ACUE's Effective Practice Framework©, 2017; LINCS Adult Education Teacher Competencies, 2015; Jacob, Stang & De Vlieger, 2017; Teacher Effectiveness in Adult Education, 2018; Chickering & Gamson, 1987; Hanson, 2016; Merrill, Shamatov, & CohenMiller, 2017; Struthers, et al., 2018; Svinicki & McKeachie, 2014). Understanding the various components of effective teaching practices in higher education helps to inform the instrument to be created from this study.

Effective Teaching Frameworks

There are many strategies and frameworks that enable effective teaching in higher education. For the purpose of this study, two were selected due to their focus on adult learners and effective teaching practices in higher education: The Effective Practice Framework©, and The Adult Education Teacher Competencies. Understanding the Effective Practice Framework© and The Adult Education Teacher Competencies helps to inform the instrument to be created from this study as each framework outlines the skills, knowledge and abilities required to teach adult learners effectively in a higher education environment.

The Effective Practice Framework©. The Effective Practice Framework©, established by the Association of College and University Educators (ACUE) in partnership with American Council on Education (ACE), outlines five areas of effective teacher practice which are described as "a comprehensive statement of evidence-based teaching competencies that every college educator should understand and be able to implement in their practice for higher education faculty"(ACUE's Effective Practice Framework©, 2017). The five areas of effective teacher practice as outlined by the

Effective Practice Framework© are: Designing an Effective Course and Class;

Establishing a Productive Learning Environment; Using Active Learning Techniques;

Promoting Higher Order Thinking; and Assessing to Inform Instruction and Promote

Learning (ACUE's Effective Practice Framework©, 2017).

Designing an Effective Course and Class. This area includes establishing learning

outcomes; aligning assessments with course outcomes; aligning activities and

assignments with course outcomes; preparing a syllabus and planning a class session

(ACUE's Effective Practice Framework©, 2017).

Establishing a Productive Learning Environment. This area includes leading the

first day of class; promoting a civil learning environment; connecting with your students;

motivating your students; engaging underprepared students; helping students persist in

their studies; and embracing diversity in your classroom (ACUE's Effective Practice

Framework©, 2017).

Using Active Learning Techniques. This area includes using active learning

techniques in small groups; using active learning techniques in large classes; delivering

an effective lecture; planning effective class discussions; facilitating engaging class

discussions; and integrating civic learning into your course (ACUE's Effective Practice

Framework©, 2017).

Promoting Higher Order Thinking. This area includes providing clear directions

and explanations; using concept maps and other visualization tools; teaching powerful

note-taking skills; using advanced questioning techniques and developing self-directed

learners (ACUE's Effective Practice Framework©, 2017).

Assessing to Inform Instruction and Promote Learning. This area includes developing fair, consistent and transparent grading practices; developing and using rubrics and checklists; providing useful feedback; checking for student understanding; and using student achievement and feedback to improve your teaching (ACUE's Effective Practice Framework©, 2017).

The Adult Education Teacher Competencies. The Adult Education Teacher Competencies "identify the knowledge and skills expected of any adult education teacher" (LINCS Adult Education Teacher Competencies, 2015). The Adult Education Teacher Competencies are organized into four domains with 17 identified competencies. These competencies provide a framework for adult educators the effective teaching competencies required to be effective teachers in the classroom in order to enhance student achievement.

"The four domains and 17 competencies are:

1. Monitors and manages student learning and performance through data;

    1.1. Assesses learners' prior knowledge, learning needs, and college and career readiness goals;

    1.2. Sets learning goals and a course of study; and

    1.3. Adapts instruction based on formative and summative student assessment data.

2. Plans and delivers high-quality, evidence-based instruction;

    2.1. Designs learner-centered instruction and classroom environments;

    2.2. Designs standards-based instructional units and lesson plans;

    2.3. Uses instructional techniques that are effective with adult learners;

2.4. Designs instruction to build learners' technology and digital media literacy skills;

2.5. Designs instruction to build learners' higher-order thinking, communication, and problem-solving skills.

3. Effectively communicates to motivate and engage learners;

    3.1. Communicates high expectations of learners and motivates them to persist to meet their goals;

    3.2. Communicates in a clear and understandable way;

    3.3. Engages in active listening, dialogue, and questioning to facilitate and support learning;

    3.4. Models an understanding of diversity.

4. Pursues professionalism and continually builds knowledge and skills;

    4.1. Possesses content area knowledge and teaching skills required for subjects and populations taught;

    4.2. Participates in professional development networks and learning communities;

    4.3. Refines instructional practices through reflection on experience, evidence, and data; and

    4.4. Participates in and contributes to program improvement efforts" (LINCS Adult Education Teacher Competencies, 2015).

Effective Teaching in K-12 Education

Understanding effective teaching in K-12 education is important to this study as today's college students were once elementary and secondary students that were taught

by educated and tested teachers (Michael & Libarkin, 2016). K-12 teachers are continually assessed and required to demonstrate effective teaching practices on an ongoing basis (Robinson & Hope, 2013). However, higher education faculty are primarily by practitioners or scholars who are knowledgeable in a very specific subject-matter and may have never participated in teacher training or learned to teach effectively. In comparison to higher education, teacher preparation and the process of developing effective teachers in elementary and secondary education is standardized (Kezar & Maxey, 2014, Robinson & Hope, 2013). In order to be an elementary or secondary teacher in the state of Ohio, teachers must have a bachelor's degree; successful completion of a state-approved teacher preparation program; successful passing of the PRAXIS exam and other specialty exams; and completion and submission of an Ohio teaching credential application (Ohio's Educator Standards | Ohio Department of Education, 2018). The state of Ohio lists 7 standards of teaching under the headings of: The Focus of Teaching and Learning; The Conditions for Teaching and Learning and Teaching as a Profession.

The seven standards are: Standard 1: Students-Teachers understand student learning and development and respect the diversity of the students they teach; Standard 2: Content-Teachers know and understand the content area for which they have instructional responsibility; Standard 3: Assessment-Teachers understand and use varied assessments to inform instruction, evaluate and ensure student learning; Standard 4: Instruction-Teachers plan and deliver effective instruction that advances the learning of each individual student; Standard 5: Learning Environment-Teachers create learning environments that promote high levels of learning and achievement for all students;

Standard 6: Collaboration and Communication-Teachers collaborate and communicate with students, parents, other educators, administrators and the community to support student learning; Standard 7: Professional Responsibility and Growth-Teachers assume responsibility for professional growth, performance and involvement as individuals and as members of a learning community (Ohio's Educator Standards | Ohio Department of Education, 2018).

Under Standard 1, teachers must display knowledge of how students learn and of the developmental characteristics of age groups; they must understand what students know and are able to do and use this knowledge to meet the needs of all students; they expect that all students will achieve to their full potential; they must model respect for students' diverse cultures, language skills and experiences; and must recognize characteristics of gifted students, students with disabilities and at-risk students in order to assist in appropriate identification, instruction and intervention (Ohio's Educator Standards | Ohio Department of Education, 2018).

Under Standard 2, teachers must know the content they teach and use their knowledge of content-area concepts, assumptions and skills to plan instruction; they must understand and use content-specific instructional strategies to effectively teach the central concepts and skills of the discipline; they must understand school and district curriculum priorities and the Ohio academic ;content standards; the relationship of knowledge within the discipline to other content areas; and connect content to relevant life experiences and career opportunities (Ohio's Educator Standards | Ohio Department of Education, 2018).

47

Under Standard 3, Teachers must be knowledgeable about assessment types, their purposes and the data they generate, they must select, develop and use a variety of diagnostic, formative and summative assessments; they analyze data to monitor student progress and learning, and to plan, differentiate and modify instruction. Teachers must collaborate and communicate student progress with students, parents and colleagues, involve learners in self-assessment and goal setting to address gaps between performance and potential (Ohio's Educator Standards | Ohio Department of Education, 2018).

Under Standard 4, Teachers must align their instructional goals and activities with school and district priorities and Ohio's academic content standards. They must use information about students' learning and performance to plan and deliver instruction that will close the achievement gap. They must communicate clear learning goals and explicitly link learning activities to those defined goals and apply knowledge of how students think and learn to instructional design and delivery. Teachers must differentiate instruction to support the learning needs of all students, including students identified as gifted, students with disabilities and at-risk students. Teachers must create and select activities that are designed to help students develop as independent learners and complex problem-solvers. Teachers must use resources effectively, including technology, to enhance student learning (Ohio's Educator Standards | Ohio Department of Education, 2018).

Under Standard 5, teachers must treat all students fairly and establish an environment that is respectful, supportive and caring. They must create an environment that is physically and emotionally safe. Teachers must motivate students to work productively and assume responsibility for their own learning. Teachers must create

learning situations in which students work independently, collaboratively and/or as a whole class. Teachers must maintain an environment that is conducive to learning for all students (Ohio's Educator Standards | Ohio Department of Education, 2018).

Under Standard 6, teachers must communicate clearly and effectively and share responsibility with parents and caregivers to support student learning, emotional and physical development and mental health. Teachers must collaborate effectively with other teachers, administrators, district staff and local community and community agencies, when and where appropriate, to promote a positive environment for student learning (Ohio's Educator Standards | Ohio Department of Education, 2018).

Under Standard 7, teachers must understand, uphold and follow professional ethics, policies and legal codes of professional conduct. They must take responsibility for engaging in continuous, purposeful professional development (Ohio's Educator Standards | Ohio Department of Education, 2018). K-12 educators must demonstrate both content master and effective teaching through in-service activities (Michael & Libarkin, 2016; Robinson & Hope, 2013) and most are required to successfully completion of the Praxis Core Academic Skills for Educators (Core) assessment, Praxis® Subject Assessments and the Praxis® Performance Assessment for Teachers.

The Praxis Performance Assessment for Teachers (PPAT) measures a K-12 teacher candidate's readiness and ability to teach effectively (PPAT (For Educator Programs), 2019). Understanding effective teaching in K-12 education is important to this study as today's college students were once elementary and secondary students that were taught by educated and tested teachers (Michael & Libarkin, 2016). These K-12 teachers are continually assessed and required to demonstrate effective teaching practices

on an ongoing basis (Robinson & Hope, 2013). However, when these students reach college they are taught primarily by practitioners or scholars who are knowledgeable in a very specific subject-matter and may never have participated in teacher training or learned to teach effectively (Jaegar & Eaton, 2009; Kezar & Sam, 2011; Kezar & Gehrke, 2016; Michael & Libarkin, 2016; Robinson & Hope, 2013). This lack of effective teacher training and preparation is adversely affecting the quality of teaching and learning in higher education intuitions (Jaegar & Eaton, 2009; Kezar & Sam, 2011; Kezar & Gehrke, 2016; Michael & Libarkin, 2016; Robinson & Hope, 2013).

Quality Assurance in Teaching and Learning

"Instructional quality is an elusive concept, but efforts to define and measure it typically focus on instructional inputs, instructional outputs or the relationships between the two" (Brown & Kurzweil, 2017, p. 3). Higher education has become more competitive, students have become more discerning and funding models have shifted. No longer is higher education funding tied primarily to enrollments. Today, federal and state dollars are tied to graduation rates. Consequently, quality assurance of teaching and learning has become increasingly more important to universities' survival. International universities have addressed the issue of quality head-on by establishing a ranking system for high performing universities. United States university accrediting bodies have slowly integrated assurance of learning metrics into standards. It is important to this study to understand that universities need to be focused on quality of teaching and learning, and that quality effort begins with the professor (Ballerini & Albarran, 2013; Banta, 2003; J. Biggs, 2001; J. B. Biggs, 2011; J. Brown & Kurzweil, 2017; Cardoso et al., 2015; Chauhan & Sharma, 2015; Steinhardt et al., 2017).

Teaching Excellence Framework. In 2014, a British organization entitled 'Which?' conducted a research study that explored students' perceptions of their higher education experiences. While student satisfaction (the primary measurement of educational quality in most higher education institutions) remains high, the Which? Study revealed a very different perception of the student experience (Neary, 2016). Students reported a "wide variation in teaching quality, undemanding courses, non-stimulating seminars, too few contact hours, as well as poor course management and organization" (Neary, 2016, p. 690). This report influenced the creation of two pieces of higher education legislation in the English Parliament that led to the establishment and pilot implementation of the Teaching Excellence Framework (TEF) (Neary, 2016). The goal of the Teaching Excellence Framework is to link the funding of teaching in higher education to quality and not simply quantity – a principle that has been long established from research (What is the TEF?, 2018). This will be accomplished by measuring excellence through metrics that include, student satisfaction, retention, employability and learning gain that will try and quantify the improvement in knowledge and personal development of students during their time in higher education (Jaeger & Eagan, 2009, 2011; Neary, 2016). Based on their scores, universities will earn either a Gold, Silver or Bronze designation.

The Teaching Excellence Framework, until recently, was not well received by rank and file academics. When it was first launched, it was dismissed as being an unreliable measure of the quality of teaching and learning in higher education (Neary, 2016; What is the TEF?, 2018). However, when the results of the 2017 TEF rankings were released in June 2017, they upset the traditional hierarchy of UK higher education.

Universities were ranked based on a series of metrics that focused on teaching quality and some universities did not rank as high as they had hoped. The 2018 results reflected efforts of improvement for some universities, whereas others declined to participate further. While the TEF will continue to come under scrutiny and be further refined over time, one important outcome came from the first years' results; "if Oxford, Cambridge and Imperial have TEF Gold, then TEF matters, and if TEF matters, then teaching matters, and if teaching matters, then the TEF is here to stay" (The 2017 TEF Results, 2017; What is the TEF?, 2018).

Quality assurance of teaching and learning in the United States.

No such framework seeks to measure the quality of teaching and learning in higher education classrooms in the United States as an overarching system of accountability. There are various accrediting bodies responsible for overseeing the quality standards of teaching and learning for the universities in the United States; one of which is the Higher Learning Commission (HLC). The goal of the HLC is to serve "the common good by assuring and advancing the quality of higher learning" and "regards the teaching mission of any institution as primary" (Guiding Values, 2018, p. 1). Central to this goal is ensuring that higher education students are well informed and that their learning is effective (Guiding Values, 2018). However, the HLC outlines no standardized mechanism of measuring this goal.

Other accrediting bodies, such as the Association to Advance Collegiate Schools of Business International (AACSB), list assurance of learning as standard to meet in their accreditation standards. The AACSB Assurance of Learning standard states:

Assurance of learning refers to processes for demonstrating that students achieve learning expectations for the programs in which they participate. Schools use assurance of learning to demonstrate accountability and assure external constituents, such as potential students, trustees, public officials, supporters, and accrediting organizations, that the school meets its goals. Assurance of learning also assists the school and faculty members to improve programs and courses. By measuring learning, the school can evaluate its students' success at achieving learning goals, use the measures to plan improvement efforts, and (depending on the type of measures) provide feedback and guidance for individual students. For assurance of learning purposes, AACSB accreditation is concerned with broad, program-level focused learning goals for each degree program, rather than detailed learning goals by course or topic, which must be the responsibility of individual faculty members (AACSB Accreditation Standards, 2018, p. 35).

While both the Higher Learning Commission and the AACSB both recognize the need for quality standards in teaching and learning, both fail to provide tools and techniques for higher education institutions to adequately measure teaching effectiveness in the classroom.

Those universities in the United States that want to stay ahead of the quality assurance of teaching and learning trend should invest in better understanding of what constitutes effective teaching practices and make sure faculty have them. This study, and the creation of the Higher Education Teaching Practice Inventory instrument that is being proposed, will allow universities to gain this competitive advantage.

Conceptual Framework

This study expands upon the current research relating to the effective teaching practices of higher education contingent faculty. This conceptual framework is rooted in adult learning theory in that faculty are adult learners that are expected to teach adult learners often without participating in adequate training or teacher preparation to teach these adult learners effectively. As shown in Figure 1, faculty bring their own experience as a student (as students once taught by higher education faculty) combined with their perceived understanding of effective teaching practices in higher education, into the classroom. This understanding coupled with their participation (or lack of participation) in a faculty orientation or teacher training program influences, either directly or indirectly, the effective teaching practices they utilize in the classroom teaching adult learners and how effective they are as teachers ultimately impacts the overall quality of teaching and learning. The aim of this research study was to better understand the perceived effective teaching practices of faculty in higher education as well as to determine if faculty experience significantly influences these perceptions.

In a recent article in the New York Times, entitled "Those Who Can Do, Can't Teach", the author reiterates the old saying, that states that those who can't do, teach; while those that can do, are not very good teachers. The author suggests that higher education institutions should make a concrete effort to determine if faculty know how to teach effectively before they are asked to teach (Grant, 2018). Faculty, contingent non-permanent faculty and permanent faculty come to their institutions of higher learning with preconceived perceptions, education and experiences about how to teach effectively in the classroom. However, few faculty members come prepared to teach adult learners,

assess adult learners' learning or manage large classrooms comprised of students with

varying skillsets. This study establishes an instrument to measure the effective teaching

practices of faculty in higher education as well as determines if faculty experience

significantly influences these perceptions.
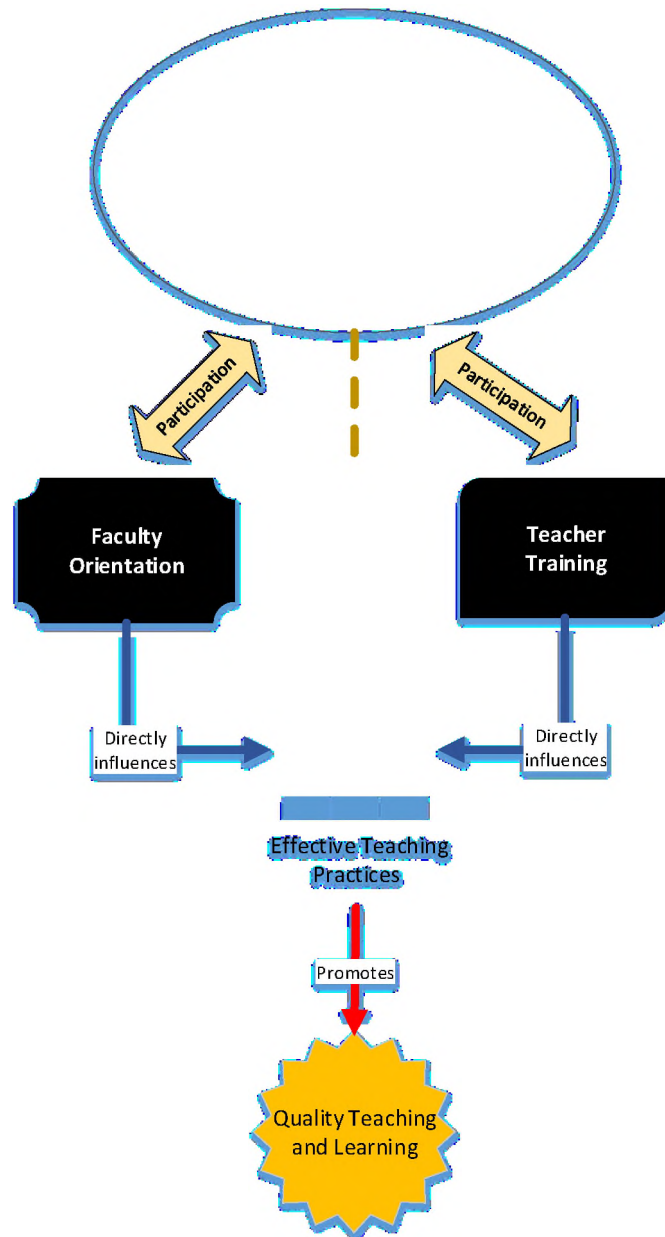
Figure 1: Conceptual Framework

Effective teaching is integral to ensuring the quality of teaching and learning in higher education institutions. With the increase use of contingent faculty primarily responsible for teaching undergraduate students, university administrators need to better understand the effective teaching practices of their contingent faculty. This provides a preventative tool for administrators and contingent faculty to identify their effective teaching practices while informing research as to the importance of teacher training for contingent faculty in their institutions.

CHAPTER III

METHODOLOGY

The purpose of the chapter is to introduce the research methodology that was used

to collect and analyze the data for this quantitative research study which examined the

effective teacher practices of faculty as perceived by new and experienced faculty in

higher education. The aim of this research study was to develop an instrument to measure

four areas of effective teaching practices in higher education; understanding of adult

learning theory, assessment of learning strategies, classroom facilitation strategies and

classroom management strategies. These four areas of effective teaching were selected

for this study due to the impact each has on effective teaching in the higher education

classroom environment as a result of the literature review and by adapting the ACUE's

Effective Practice Framework[©] (ACUE's Effective Practice Framework©, 2017) and the

Adult Education Teacher Competencies (LINCS Adult Education Teacher Competencies,

2015) outlined by the American Institutes for Research (American Institutes for

Research, 2019).

The ACUE's Effective Practice Framework is endorsed by the American Council

on Education and outlines the suggested instructional skills that every college educator

should possess (ACUE's Effective Practice Framework©, 2017). The Adult Teacher

Competencies were developed as a result of an extensive literature review and a review by national subject matter experts. The Adult Teacher Competencies identify the knowledge and skills required by adult educators to support the learning of adults (LINCS Adult Education Teacher Competencies, 2015). This chapter includes the research questions, sample and population, sampling method, research design, instrument design, construct validity, limitations and delimitations.

Research Questions

1. What factors in the areas of understanding of adult learning theory, assessment of learning strategies, classroom facilitation strategies and classroom management strategies are necessary to develop a measure of effective teaching practices in higher education? The statistical method used to help answer this research question was an exploratory factor analysis using oblique rotation to confirm the instrument's construct validity. An inter-correlation analysis of the sub-scales was conducted using a correlation matrix to verify sub-scale independence.

2. To what extent does faculty type differ in these sub-scales? The statistical method used to answer this research question was a multivariate analysis of variance (MANOVA) using the factors groupings as dependent variables and faculty type (contingent and permanent) as the independent variables.

Sample and Population

The population for this research study included faculty (contingent and tenured-track) in the United States of America who teach undergraduate, instructor-led courses at mid-sized, public, urban universities located in the Midwest area of the North Central Region of the Higher Learning Commission (HLC). The HLC is the organization

responsible for accrediting higher educational institutions that issue degrees in the North

Central region of the United States of America. The North Central Region is comprised

of 19 states (Figure 2):

- Arizona
- Arkansas
- Colorado
- Illinois
- Indiana
- Iowa
- Kansas
- Michigan
- Minnesota
- Missouri

- Nebraska
- New Mexico
- North Dakota
- Ohio
- Oklahoma
- South Dakota
- West Virginia
- Wisconsin
- Wyoming
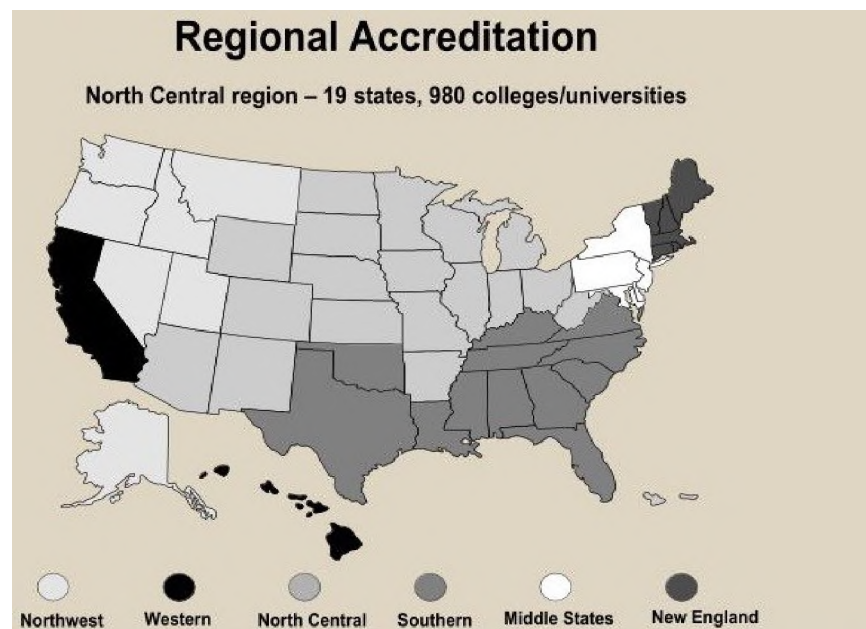
Figure 3: Higher Learning Commission Regions

The researcher convened a sampling of new and experienced faculty teaching

instructor-led undergraduate courses at three, 4-year, public, urban universities with

similar characteristics in the mid-west area of the North Central region of the HLC to

participate in this study.

The Midwest area of the North Central region of the Higher Learning

Commission (HLC) universities selected for this research study can be found in Table 1:

Table 1

Selected Institutions

Institution	Location	Undergraduate Enrollment	Total Number of Faculty
Cleveland State University	Cleveland, OH	12,306	1,178
Wayne State University	Detroit, MI	17,322	1,893
Indiana University-Purdue University at Indianapolis	Indianapolis, IN	21,610	1,794

The universities selected for this study were designated as urban-setting, public

universities with similar student populations, faculty ratios, awards offered and

organizational structure:

Student population. The universities selected for this study have similar student

populations regarding acceptance rates, gender distribution, incoming grade point

average (GPA), and percentage of students living off campus (College Rankings and

Lists | US News Best Colleges, 2019).

Faculty ratios. The universities selected for this study have similar faculty to

student ratios spanning between 13-17 students per 1 faculty (College Navigator -

National Center for Education Statistics, 2019).

Awards offered. The universities selected for this study each offer Bachelor's

degree Master's degree, Doctor's degree - research/scholarship and Doctor's degree -

professional practice (College Navigator - National Center for Education Statistics, 2019).

      Organizational structure. The universities selected for this study have similar governing structures; each has a Board of Trustees, a President, Vice Presidents for Academic Affairs, Finance and Research; shared university services and supports such as business and financial services, IT, facilities planning, auditing, legal counsel and are organized by independent colleges. Each college is led by a college-level Dean with each academic department led by a Chairperson (About - IUPUI, 2019; About - Wayne State University, 2019.; Board of Trustees | Cleveland State University, 2019.; Leadership - UIC, 2019) .

Sampling Method

      Population. All faculty members at each institution were asked to participate in this study; Cleveland State University - 1,178 total faculty; Wayne State University - 1,893 total faculty; and Indiana University-Purdue University at Indianapolis-1,794 total faculty. The sampling frame was estimated at 4,865 total faculty members. Study participants were identified through correspondence with university administration including Deans and Chairpersons as they have direct access to faculty and contingent faculty are rarely listed on university's public email directories located on each of the institution's websites. The study introduction letter can be found in the Appendix.

      Sample size. Based on the estimated size of the combined faculty population at the institutions to be surveyed, along with the researcher's desire to achieve a 95% confidence level with a 3% margin of error, the desired sample size for this study would be 926 faculty participants. Researchers state the minimum necessary sample size in

factor analysis is related to the number of variables, the number of factors, the number of variables per factor, and the size of the communalities in the study (Mundfrom et al., 2005; Zhao, 2009).This sample size was determined using a sample size calculation that calculates the minimum number of participants necessary to meet the desired statistical goal (Sample Size Calculator [Use in 60 seconds]. (2019, January 09). Retrieved from https://www.qualtrics.com/blog/calculating-sample-size/.

Sampling technique. The non-probability sampling technique of purposeful sampling, specifically homogeneous sampling, was used for this study. Homogeneous sampling was used due to the similarity of subjects that share the same occupation; teaching undergraduate instructor-led courses in a higher education institution. University administrators at each sampling location were contacted via phone and/or in person to receive permission to survey their faculty for this study. Administrators who agreed to invite their faculty to participate were sent an introductory email explaining the purpose of the study. The introductory email was sent directly to faculty asking for their participation. A direct link to the survey was provided in the content of the email allowing participants to easily access the survey online using Qualtrics software. Participants completed the survey online at their institution, on their smartphone or any location that is convenient for them (Mundfrom et al., 2005; Saunders et al., 2015; Zhao, 2009).

Since no questionnaire exists for these research questions, a survey instrument was developed.

Research Design

The research design for this dissertation is a descriptive empirical quantitative study that examined the factors that underlie effective teacher practices of higher education faculty as perceived by faculty in higher education. In a descriptive empirical research study, the researcher gains knowledge by direct or indirect observation. This knowledge, called empirical evidence or data, can be measured. Quantitative research methods focus on gathering numerical data. The research then utilizes objective measurements through the use of statistical and numerical analysis of data to explain a particular phenomenon (Babbie, 2013; Polit & Beck, 2017).

For this study, a non-experimental, quantitative research design involved collecting data at a single point in time using an online survey. The data collected from the survey was analyzed using statistical techniques that allowed the researcher to examine the factors that underlie effective teacher practices of higher education faculty (Babbie, 2013; Creswell, 2013; B. Johnson, 2001). Non-experimental research studies examine how variables are related and does not involve manipulating variables. Instead, non-experimental research involves making observations on how the variables are related to one another and describing the findings (Bonds-Raacke & Raacke, 2014). This quantitative research study approach differed from a qualitative research approach in that it involved collecting a large amount of data from a large population using a structured questionnaire consisting of statements or 'closed' questions with a limited number of answers and collects numerical data from research participants. The numerical data was analyzed using statistical methods to answer the research questions (Babbie, 2013; Bonds-Raacke & Raacke, 2014; Creswell, 2013; Polit & Beck, 2017).

Statistical Analyses

To effectively answer the research questions proposed in this study, the researcher employed various statistical analyses techniques. The statistical analyses techniques include Cronbach's alpha, factor analysis and multivariate analysis of variance measures. This allowed the researcher to establish a practical instrument for higher education faculty to measure their areas of effective teaching practice.

Reliability. Cronbach's alpha is a statistical measure that checks the internal consistency or reliability of scores or test items. The Cronbach's alpha statistic is determined by correlating the score for each scale item with the total score for each observation and then comparing that score to the variance for all individual item scores (Cronbach's Alpha, 2008). Cronbach's alpha was used to measure the internal consistency of the instrument total scale and each of sub-scales. To calculate alpha for each item, the researcher first converted the item mean scores for each of the sub-scales to a Z-score. The Z-score statistic will then be used for testing the level of internal consistency. The researcher looked for an alpha test statistic higher than .70, as an acceptable measure of internal consistency. Items with an alpha test statistic less than .40 are unacceptable and will be removed (DeVellis, 2017).

Factor analysis. Factor analysis is a statistical technique used to identify the underlying dimensions, or factors within the data which represent the relationships among variables that best explain the underlying dimensions that fit the data. Factor analysis has been used extensively to examine patterns of relationships in instrument development. Factor analysis allows the researcher to provide a visual representation of relationships between variables (Polit & Beck, 2017). Factor analysis is a statistical

64

procedure that determines how items within an instrument are related and helps to determine if the items can be grouped into a smaller number of unobserved variables called factors (Behar-Horenstein et al., 2018). The goal of factor analysis is to model the interrelationships among items, specifically on the variance and the covariance rather than the mean (Bergman, 2014). There are two approaches in factor analysis that relate to partitioning the variance; principal components analysis and common factor analysis.

Principal Components Analysis. Principal components analysis (PCA) assumes there is no unique variance; the total variance is equal to the common variance. The goal of PCA is to reduce the variables down into a linear combination of smaller components. CAA transforms several possible correlated variables into a smaller number of uncorrelated variables called principal components. The first principal component contains as much of the variability in the data as possible with each subsequent component containing as much as the remaining variability as possible (Bergman, 2014; Hahs-Vaughn, 2017).

Common factor analysis. Common factor analysis (CFA) differs from PCA in that it assumes the total variance can be partitioned into common and unique variance. The unobserved, latent variable or latent construct that defines the interrelationship among items and makes up the common variance is called a factor, hence the name factor analysis (Bergman, 2014; Hahs-Vaughn, 2017).

Factor analysis types. They are two primary types of factor analyses; exploratory factor analysis, and confirmatory factor analysis. Exploratory factor analysis (EFA) measures the underlying factors comprising of variables in a data structure, in this case, items, without assuming the items are related. EFA looks at the total variance among the

65

variables to identify interrelationships among the items and then groups items that are related by unified concepts (Bartholomew, Knott, & Moustaki, 2011; Behar-Horenstein, Beck, & Yu Su, 2018; Polit & Beck, 2017; Powell, 2014). Confirmatory factor analysis (CFA) tests a hypothesis that the items are related and associated with specific predetermined factors.

Exploratory factor analysis (EFA). Principle Axis Factoring using the exploratory factor analysis (EFA) statistical approach helped to determine if there was a relationship between items in the survey. To accomplish this the researcher developed a survey instrument that contained items related to effective teaching practices in the areas of adult learning theory (behaviors related to teaching adult students), assessment of learning strategies (activities related to monitor student learning), classroom facilitation methods (activities related to teaching) and classroom management strategies (activities related to managing large classes). The survey was distributed to faculty participants to rate the items on a 4-point Likert scale. The data was collected and analyzed using a five-step factor analysis approach to identify the items that determined the underlying factor structure (Furr & Bacharach, 2013; Mundfrom et al., 2005; Thompson, 2004).

Step one includeed the generation of a correlation matrix for all variables to determine how likely the variables are related to each other. The researcher was looking for correlation coefficients greater than 0.3 as an acceptable level. Additional analysis of the data consisted of two tests, Bartlett's Test of Sphericity and the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy. Bartlett's Test of Sphericity is a test used to determine if the correlation matrix is an identity matrix. If so, a significant test statistic will indicate that the factor model is appropriate. The Kaiser-Meyer-Olkin (KMO)

Measure of Sampling Adequacy test helps determine the magnitude of intercorrelation among the variables within the data. The researcher was looking for a large value which will support factor analysis (Furr & Bacharach, 2013; Mundfrom et al., 2005; Thompson, 2004).

The second step in the factor analysis process is factor rotation. Factor rotation, as it relates to an exploratory factor analysis, is a statistical tool to assist in better understanding the meaning of the factors. Since the scale is multidimensional, rotating the factors looks at the factor associations from different perspectives. Different rotation methods may indicate different factors. Varimax rotation is an orthogonal rotation of the factor axes to differentiate the original variables by the extracted factor. It is used when the factors are unrelated and results in uncorrelated factors that make it easy to identify each variable with a single factor. Oblique rotation however allows the factors to be correlated or uncorrelated with each other to achieve the clearest association among the variables being studied Oblique rotations are inclusive of orthogonal rotation, which is why oblique rotations are preferred (Furr & Bacharach, 2013; Hahs-Vaughn, 2017; Mundfrom et al., 2005; Thompson, 2004).

Step three involves parallel analysis and scree test. There has been some concern with using eigenvalues greater than 1.00 when determining factor identification within an exploratory factor analysis in that one can misidentify the number of factors to retain. Eigenvalues are used to explain the variance in the correlation matrix in which variables are grouped into factors based on their factor-loading or eigenvalue. Items with large eigenvalues indicates that variable contributes the most to that factor. Items with eigenvalues less than .40 may not be related to the other items or may indicate the need

for further study. For this study, the researcher aimed for a clean factor structure by seeking high factor loadings within each factor while excluding cross-loadings between factors. The resulting items will be used in the research instrument for the formal study (Çokluk & Koçak, 2016; Furr & Bacharach, 2013; Mundfrom et al., 2005; Thompson, 2004; Wood, Akloubou Gnonhosou, & Bowling, 2015).

To overcome this concern, the researcher used parallel analysis. Parallel analysis is a statistical method that helps to confirm the number of factors to retain from the factor analysis. Parallel analysis utilizes a random dataset with similar properties as the original data to compute new eigenvalues. Using a parallel line along with the scree plot, the researcher can minimize over-identification of factors based on sampling error and this provides additional evidence of the number of factors to extract. A scree plot is a visual representation of factors and is used to determine the number of factors to retain. To interpret a scree plot, the researcher looked for the clearest delineation of where the line changes from being vertical and diagonal to being horizonal. The number of hashes on the scree plot, along with the parallel analysis determine what factors to retain (Çokluk & Koçak, 2016; Hahs-Vaughn, 2017; Wood, Akloubou Gnonhosou, & Bowling, 2015).

The final step, step four involves factor extraction. This is the part of the statistical analysis that helps to determine the underlying factor structure of the data. Using the eigenvalues, the outcome of the parallel analysis and the scree test as guides, the researcher determined which factors best represent the data. (Çokluk & Koçak, 2016; Hahs-Vaughn, 2017; Wood, Akloubou Gnonhosou, & Bowling, 2015).

Multivariate analysis of variance (MANOVA). A multivariate analysis of variance (MANOVA) is an inferential statistical test that determine if multiple groups of

data have statistically significant differences in the mean scores of each group using the covariance between the outcome variables. Simply put, a MANOVA is more complex than an ANOVA and generally is employed when there is more than one dependent variable that are on continuous scales of measurement. ANOVA, or Analysis of Variance, tests for the mean differences between two or more groups. MANOVA tests for the difference into or more vectors of means. There are a few assumptions the researcher was aware of before running the MANOVA analysis. To start, the dependent variables must be normally distributed within the groups and outliers should be removed. There must be a linear relationship among the pairs of dependent variables and the dependent variable should display equal levels of variance across the predictor variables (called homogeneity of variances). Finally, homogeneity of covariance should also be present. This states that the intercorrelations are homogenous across the cells. A variety of tests will be used to ensure these assumptions are met. A MANOVA will be used to determine if contingent faculty differ from tenured-track faculty as to their perceptions of effective teaching practices within each factor (Hahs-Vaughn, 2017).

Using the statistical procedures of exploratory factor analysis and multivariate analysis of variance provided the researcher with the statistics required to answer the research questions.

Instrument Design

A descriptive, quantitative instrument was created as a result of a review of literature and by adapting the ACUE's Effective Practice Framework[©] (ACUE's Effective Practice Framework©, 2017) and the Adult Education Teacher Competencies (LINCS Adult Education Teacher Competencies, 2015) outlined by the American

Institutes for Research (American Institutes for Research, 2019). The ACUE's Effective

Practice Framework is endorsed by the American Council on Education and outlines the

suggested instructional skills that every college educator should possess (ACUE's

Effective Practice Framework©, 2017). The Adult Teacher Competencies were

developed as a result of an extensive literature review and a review by national subject

matter experts. They identify the knowledge and skills required by adult educators to

support the effective teaching practices of adult learners (LINCS Adult Education

Teacher Competencies, 2015).

Selected questions were presented to a focus group of faculty members to confirm

item understanding, modify, edit and adjust selected questions that best help to identify

the effective teaching practices in use by faculty in higher education. There are four main

areas with multiple steps involved in the development of the Higher Education Teaching

Practice Inventory (HETPI):

I. Construction of the pilot instrument

II. Deploy and refine the pilot instrument

III. Deploy the research instrument

IV. Conduct final analysis

I. Construction of the pilot instrument

To begin construction of the pilot instrument, the researcher reviewed the

literature along with the ACUE's Effective Teacher Framework© (ACUE's Effective

Practice Framework©, 2017) and the Adult Education Teacher Competencies (LINCS

Adult Education Teacher Competencies, 2015) and began constructing an item pool. The

researcher constructed an initial item pool consisting of four (4) factor areas with 10-12

items per factor area for a total of 48 items focusing on four main areas including adult

learning theory, assessment of learning strategies, classroom facilitation methods and

classroom management strategies.

Adult learning theory. The median age of higher education students are adults

over the age of 25. Adult learners are different than traditional college-age students in

that adults bring their work and life experiences to the classroom. These work and life

experiences impact their educational interests and educational expectations. Adult

learning theory provides a framework called andragogy (Knowles, 1970) that outlines

best practices in how to teach adult learners. The aim of the adult learning theory factor

area is to best identify the adult learning practices utilized by higher education faculty in

the traditional college classroom (Brookfield, 1986; Caffarella, Daffron, & Cervero,

2013; Goddu, 2012; Knowles, 1970; McCall, Padron, & Andrews, 2018; Pavlova &

Sanger, 2016; Payton, 2015).

The adult learning theory factor is defined as the faculty's understanding of the

teaching methods used to motivate adult learners to persist. This includes adult teaching

methods related to student learning including differentiated instructional methods that

align to the adult learner audience and effective communication that motivate and engage

the adult learner to meet their learning goals. The initial items listed in the adult learning

theory factor area include:

- I utilize adult teaching methods such as critical reflection activities
- I utilize adult teaching methods such as active learning activities that directly involve students in the learning process
- I utilize adult teaching methods such as lesson summary activities
- I utilize adult teaching methods such as didactic teaching that encourages critical reflection rather than learning by rote
- I utilize adult teaching methods such as an icebreaker activity on the first day of class to build community among students

71

- I utilize adult teaching methods such as collaborative learning to encourage students to share their experiences
- I utilize adult teaching methods such as hands-on project-based learning activities
- I utilize adult teaching methods such as group discussions
- I utilize adult teaching methods such as incorporating video into my classroom discussions
- I utilize adult teaching methods that relate course content to work practices
- I design lessons that reflect the needs of adult learners
- I provide students with flexible assignments that align to the adult learners' schedule
- I design classroom activities that are relevant to adult learners
- I encourage students to work together in class to foster a sense community among participants

Assessment of learning strategies. Assessment of learning strategies provides tools and techniques to faculty in higher education as they provide the evidence necessary to determine if students are learning. Assessment of learning strategies provide the feedback to both the student and faculty in how the students are meeting the course learning objectives. Faculty must possess assessment of learning skills as higher education accreditors are placing more and more emphasis on documentation of student learning outcomes rather than only requiring documentation of learning assessment processes. Higher education faculty need to continually consider assessment practices when designing their lessons so they can better determine the best method to measure student learning (Astin & Antonio, 2012; Geven & Maricut, 2015; Jacob, Stange, & De Vlieger, 2017; Paolini, 2015; Wachtel, 1998).

The assessment of learning strategies factor is defined as the faculty's understanding of the assessment methods and strategies used to monitor student learning. This includes assessment practices, policies, instruments and strategies that manage

student learning through data. The initial items listed in the assessment of learning strategies factor area include:

- I clearly outline assessment procedures around grading for each assignment in the syllabus
- I utilize a variety of assessment strategies to meet the needs and strengths of different types of learners.
- I conduct on-going assessments using strategic questioning techniques
- I utilize assessment rubrics when grading non-multiple-choice assignments
- I design my own assessment rubrics that outline assignment grading criteria
- I conduct diagnostic assessments including pre-tests and/or self-assessments
- I conduct assessments that measure student progress toward learning goals
- I conduct periodic assessments in the form of examinations (quizzes or tests) using multiple-choice questions
- I conduct periodic assessments in the form of examinations (quizzes or tests) using essay questions
- I conduct periodic assessments in the form of examinations (quizzes or tests) using matching questions
- I conduct periodic assessments in the form of projects
- I conduct periodic assessments in the form of papers
- I conduct periodic assessments in the form of presentations
- I utilize assessment results to inform my teaching practice
- I utilize assessment results to adapt my lesson plans
- I provide regular, detailed assessment feedback to students on the progress of their learning
- I align assessments to the course learning outcomes

Classroom facilitation methods. In higher education, students are asked to be independent, critical thinkers which requires facilitation of learning by the instructor rather than traditional lecturing. Different from archaic teaching techniques, facilitators of learning engage learners in their own learning process and place the learner at the center of the process. Facilitators engage students at their level, focus on real-life issues and challenge learners to make connections to their own experiences. Facilitators not only convey information, but they empower learners to utilize that information in new and meaningful ways. Faculty who can apply both teaching and facilitation techniques realize

greater success in delivering information and empower student learning (Ali, 2005; Anne & Ian, 2007; Brookfield, 1986; Elder, 2014; Merriam & Caffarella, 1999; Paolini, 2015; Payton, 2015; Wise, 2017).

The classroom facilitation methods factor is defined as the faculty's understanding of the facilitation methods and strategies used to teach adult learners effectively. This includes methods related to lesson planning, lesson design, classroom instructional techniques and classroom activities that address the needs of a diverse learning audience. The initial items listed in the classroom facilitation methods factor area include:

- I develop classroom presentation lessons for each class session
- I align classroom presentation lesson content to learning goals
- I utilize a variety of classroom presentation strategies in my lessons to meet the needs of different types of learners.
- I utilize questioning techniques within my classroom lessons
- I align my classroom presentation to learning outcomes
- I align my classroom activities to learning outcomes
- I design classroom presentation lessons that build students' problem-solving skills
- I use classroom presentation techniques during my lessons that encourage students to analyze information
- I adjust my classroom presentation lessons to provide additional explanation or activities if necessary
- I deliver classroom presentation lectures that are aligned to learning objectives and keep students engaged
- I deliver classroom presentation lectures that keep students engaged
- I utilize guest speakers in my classroom presentations to provide relevant practice information
- I use multiple classroom presentation techniques for engaging learners with different learning styles, so they can better understand the material
- I design a coherent progression of learning so that classroom presentation lessons build on one another
- I use up-to-date materials within my classroom presentation lessons
- I assign tasks within my classroom presentation lessons that require technology skills

Classroom management strategies. Classroom management refers to the skills and procedures required to create and maintain a classroom environment that promotes learning. When clear expectations are set forth for students that outline appropriate student behaviors, classroom interactions, and learning expectations there is a sense of order in the classroom and learning can take place. Effective classroom management strategies allow faculty to establish and maintain an environment that is conducive to student learning (Berstein, 2010; Clark, 2017; Henderson, 2016; Kim & Lundberg, 2016; Popescu-Mitroi et al., 2015; Robinson, 2012; Van Der Sijde & Tomic, 1993).

The classroom management strategies factor is defined as the faculty's understanding of the methods and strategies used to manage an instructor-led classroom of adult learners. This includes strategies related to the syllabus, instructor expectations, student rights and managing student behavior. The initial items listed in the classroom management strategies factor area include:

- I regularly provide classroom management check–in points throughout the class session to allow students to clarify the lesson content
- I outline course learning outcomes on the syllabus to provide students with a clear understanding of what the course entails for better classroom management
- I design a course syllabus that clearly outlines how students can meet the course requirements for classroom management
- I use an institution provided syllabus that clearly outlines how students can meet the course requirements for effective classroom management
- I clearly review the intended learning outcomes in my syllabus for effective classroom management
- I clearly review student expectations in my syllabus for effective classroom management
- I clearly review course and institutional policies regarding attendance on my syllabus for effective classroom management
- I clearly review course and institutional policies regarding attendance on my syllabus for effective classroom management
- I clearly outline student rights in my syllabus for effective classroom management

- I clearly outline the available disability accommodations in my syllabus for effective classroom management
- I clearly outline specific policies regarding classroom civility in the classroom for effective classroom management
- I clearly outline specific policies regarding appropriate student behavior in the classroom for effective classroom management
- I use appropriate techniques to respond and manage disruptive students for effective classroom management
- I use appropriate techniques to respond and manage disruptive student behaviors for effective classroom management
- I use incentives to encourage students to complete classroom assignments for effective classroom management
- I communicate expectations in a clear and understandable way for effective classroom management
- I balance student participation to manage dominate talkers for effective classroom management

The researcher convened a purposeful sampling of experienced faculty teaching instructor-led undergraduate courses at one 4-year higher education institutions in the North Central Region of the Higher Learning Commission (HLC) to participate in a small focus group to review the initial item pool and check for item understanding. Experienced faculty (those that have taught instructor-led courses with 3+ years of full-time university-level instructor-led teaching experience that teach instructor-led undergraduate courses academic semesters) were selected for this study due to their first-hand experience teaching in a higher education environment. Focus group reviewers were asked to evaluate factor items against three statements: 1) is the item's meaning understandable; 2) is the language used in each item understandable; and 3) does the item fit into an appropriate factor and not into any other factor? Reviewers were provided a form where they indicated their level of agreement on each item on a 3-point Likert scale and be asked for feedback related to item relevance in each factor area. The 3-point Likert scale included Yes, No and Unclear. The researcher tested interrater agreement of

the items using intra-class correlation. Intra-class correlations are a commonly used statistic for assessing inter-rater agreement for ordinal variables and are used when items are rated by multiple coders. The researcher looked for an intra-class correlation measure between 0.75 and 1.00. Based on the outcome of this analysis the item pool was refined (Cicchetti, 1994; Hallgren, 2012). Once the item pool has been refined, the researcher constructed the pilot instrument. The pilot instrument requested descriptive information and should contain approximately 40-48 question items with corresponding scales.

II. Deploy and refine the pilot instrument

When establishing a new scale, researchers must verify that the scale being developed is error free and contains clear language. It is recommended that a pilot study with an adequate sample size be conducted to address these issues. The pilot study allowed the researcher to refine the instrument (Johanson & Brooks, 2010).

The goal of the pilot study is to produce accurate estimates as to the feasibility of the instrument. To do this, the researcher obtained a sample size for the pilot study that provided adequate representation of the population being studied. There are two schools of thought regarding the number of participants required for factor analysis; sample size and subjects-to-variables ratio. The sample size method uses a sample size based on the number of items identified in each factor. The subjects-to-variables ratio uses the number of variables to determine sample size. Both methods have a variety of rules the researcher can follow. For this pilot study, the researcher followed the Rule of 200 which states that N should be at least 200 participants (Beavers et al., 2013; Guilford, 1954; MacCallum et al., 2001; Viechtbauer et al., 2015; Zhao, 2009). Using a sample size calculation with a confidence interval parameter of 0.98, a probability estimation of 0.02, the suggested

sample size is 193.6 or 194 participants. This can be interpreted to indicate that in a pilot study containing 194 participants, if a problem exists with 2% probability in potential study participants, the researcher should be able to detect them with 98% confidence (Viechtbauer et al., 2015).

The researcher electronically distributed the pilot instrument to a purposeful sample of approximately 300 faculty teaching instructor-led undergraduate courses at two 4-year higher education institutions of similar size in the Midwest area of the North Central Region of the Higher Learning Commission (HLC) requesting their participation.

Once the researcher obtained a quality sample size of no less than 194 completed survey responses, analysis of the findings began. Obtaining a sample of 194 completed survey responses ensured the sample is statistically representative of the population being studied. The researcher analyzed the findings by conducting an exploratory factor analysis with oblique rotation. Exploratory factor analysis is a common statistical procedure that looks at the correlations with data in order to summarize their associations to determine the dimensionality of tests and identify the relationship between variables.

III. Refining and deploying the research instrument

The researcher electronically distributed the research instrument to a purposeful sample of approximately 200 additional faculty teaching instructor-led undergraduate courses at two additional 4-year higher education institutions of similar size in the Midwest are of the North Central Region of the Higher Learning Commission (HLC) to participate. A sample size of 200 additional study participants was determined based on the Rule of 200 and the anticipated four factors identified through the pilot study analysis. According to Mundfrom, et al. (2005), a range of 110-180 participants allowed

for an excellent criterion level of 0.98. However, the authors state to be mindful and cautious as these parameters were based on continuous data, not ordinal data (Furr & Bacharach, 2013; Mundfrom et al., 2005; Thompson, 2004).

IV. Conduct final analysis

Once the researcher obtained a quality sample size of no less than 180 completed survey responses, analysis of the findings began. The researcher analyzed the findings by conducting an exploratory factor analysis using oblique rotation to answer the research questions. A multivariate analysis of variance (MANOVA) was be used to determine if contingent faculty differ from permanent faculty as to their perceptions in each sub-scale of effective teaching practices (Furr & Bacharach, 2013; Mundfrom et al., 2005; Thompson, 2004).

Construct Validity

Instruments or tests are only useful if they can accurately identify differences. Construct validity measures allow researchers to ensure that the test they are developing measures what it aims to be measuring. The validity of the Higher Education Teaching Practice Instrument (HETPI) was evidenced by factor analysis and the reliability of the instrument and supported by the construct validity of the factors influencing effective teacher practices in higher education as supported by the literature. The purpose of the HETPI is to determine the effective teaching practices faculty self-identify as understanding. The aim of the survey is to better understand the perceived andragogic teacher effectiveness practices of faculty in higher education. The instrument measure four constructs related to effective teaching practices in higher education: adult learning

theory, assessment of learning strategies, classroom facilitation methods and classroom management strategies.

Limitations

When conducting a study that utilizes one's perceptions as an indicator, overestimation of one's own performance or competence is an issue and a limitation of the study. Referred to as the Dunning–Kruger effect, people tend to overestimate their competence and perceive their cognitive ability greater than what it actually is (Evangelista et al., 2008).

Additional limitations exist in the sample size of this study and the limited research related to effective teaching practices in higher education. Using a larger sample size may provide more accurate results as this study cannot be generalized to all faculty in the United States. Also, there is little empirical research on effective teaching practices in higher education.

Delimitations

For this research study, the researcher chose the sample population to include both new and experienced faculty. While the primary duties of each faculty may vary based on rank (full-time contingent faculty have service requirements and tenured faculty have research requirements, for example), all faculty have a duty to teach. Due to this reason, the researcher chose to examine all faculty types. Also, the contingent faculty sample was larger than the permanent faculty sample. This study could be improved by looking at three faculty groups; part-time, full-time non-tenured, and permanent faculty.

CHAPTER IV

FINDINGS

This chapter presents the results of each phase of the research study involving developing, validating, and measuring the reliability of an instrument to measure the perceived level of understanding of effective teaching practices of faculty members in higher education. The research questions that guided this research study are:

1. What factors in the areas of understanding of adult learning theory, assessment of learning strategies, classroom facilitation strategies and classroom management strategies are necessary to develop a measure of effective teaching practices in higher education?

2. To what extent does faculty-type differ in these sub-scales?

Instrument Development

A survey instrument was developed to measure the perceived level of understanding of effective teaching practices of faculty members in higher education. The instrument was designed to measure four constructs related to the understanding of adult learning theory, assessment of learning strategies, classroom facilitation strategies and classroom management strategies. While there is research available on each of these content areas, there is limited literature on effective teaching practices in higher

81

education and a lack of empirical studies investigating effective teaching practices in higher education. This survey was designed to provide a diagnostic instrument to identify the methods of effective teaching present in higher education faculty.

Item refinement and testing.

When designing an instrument, it is important to evaluate the items and gather evidence to support the results of the instrument (American Educational Research Association, 2014). The American Educational Research Association (2014) states that evidence is valid if it is: (1) evidence based on content, (2) evidence based on response processes, (3) evidence based on internal structure, (4) evidence based on relations to other variables, and (5) evidence for validity and consequences of testing. Evidence based on content is represented in the items used in the instrument and the feedback obtained by instrument reviewers. Using the ACUE's Effective Practice Framework© (ACUE's Effective Practice Framework©, 2017) and the Adult Education Teacher Competencies (LINCS Adult Education Teacher Competencies, 2015) outlined by the American Institutes for Research (American Institutes for Research, 2019) as a guide, initial items were identified for review. Item reviewers provided the researcher with an opportunity to gain feedback on the items and make necessary revisions to the instrument prior to the pilot study. This step helps to confirm or invalidate the definitions of the construct and helps to determine how well the items relate to the desired construct (DeVellis, 2017).

All the items on the instrument were written to measure four constructs including understanding of adult learning theory, assessment of learning strategies, classroom facilitation strategies and classroom management strategies that are necessary to develop

a measure of effective teaching practices in higher education. As a researcher develops an instrument, Mastaglia et al., (2003) suggested using a readability formula to measure the reading level of the instrument. A Flesch-Kincaid Grade Level score of 8 was obtained for the instrument, meaning the reading level of the instrument was approximately an eighth-grade level text. Because the participants completing the instrument were all college faculty with a college degree, readability should not be a problem in this study.

Six university faculty from the Ohio Confederation of Teacher Education Organization Conference and a focus group consisting of six university faculty from the Scholarship of Teaching and Learning Conference were asked to review the initial set of items. The researcher presented each reviewer the initial instrument and elicited feedback from the participants on how well they understood each item's meaning, if the language used in each item was understandable and if the item fit in the appropriate construct area. They were asked to respond with Yes, No or Unclear. Reviewers were also asked to comment if necessary.

The researcher analyzed the reviewers' responses in terms of interrater agreement of the items. Based on the outcome of this analysis the item pool was refined (Cicchetti, 1994; Hallgren, 2012). This included deleting items that were redundant and changing the wording on items that were unclear. The initial instrument contained 57 scale items. Ten items were found by the item reviewers to be unclear or found to be redundant in meaning. Those items were removed from the instrument. Four additional items were added based on feedback from the reviewers and additional literature review. Revisions to the survey instrument were made based on feedback from the reviewers and

to meet the readability requirement (Table 2). Lastly, the instrument was prepared for the

pilot study. The following changes to the instrument were made:

Table 2

Revisions to Initial Survey Items

Initial Item	Revision	Pilot Item
I utilize adult teaching methods such as critical reflection activities	READING-LEVEL	I encourage students to think critically about what they are learning.
I utilize adult teaching methods such as active learning activities that directly involve students in the learning process	READING-LEVEL	I use hands-on learning assignments in my classroom.
I utilize adult teaching methods such as lesson summary activities	READING-LEVEL	I summarize classroom lessons at the end of each class session.
I utilize adult teaching methods such as didactic teaching that encourages critical reflection rather than learning it by rote memorization	READING-LEVEL	I encourage students to reflect on the application what they are learning rather than memorize what they are learning.
I utilize adult teaching methods such as an icebreaker activity on the first day of class to build community among students	READING-LEVEL	I use a fun activity on the first day of class so students can get to know each other.
I utilize adult teaching methods such as collaborative learning to encourage students to share their experiences	READING-LEVEL	I encourage students to share their personal and professional experiences in class as it relates to what is being taught.
I utilize adult teaching methods such as hands-on project-based learning activities	READING-LEVEL	I assign projects in class that relate to the material being taught.
I utilize adult teaching methods such as group discussions	READING-LEVEL	I encourage group discussions within the classroom.
I utilize adult teaching methods such as incorporating video into my classroom discussions.	READING-LEVEL	I use videos or movies in class to reinforce what I am teaching.

Initial Item	Revision	Pilot Item
I utilize adult teaching methods that relate course content to work practices	READING-LEVEL	I relate course content to the work environment.
I design lessons that reflect the needs of adult learners	REMOVED	
I provide student with flexible assignments that align to the adult learners' schedule	READING-LEVEL	I provide students with flexible assignment deadlines.
I encourage students to work together in class to foster a sense community among participants	READING-LEVEL	I encourage students to work together in small groups during class.
I clearly outline assessment procedures around grading for each assignment in the syllabus	READING-LEVEL	I clearly outline grading policies for each assignment.
I utilize a variety of assessment strategies to meet the needs and strengths of different types of learners.	READING-LEVEL	I use different types of assessments to meet the needs of different types of learners.
I conduct on-going assessments using strategic questioning techniques	READING-LEVEL	I assess learning by using questioning techniques such as clarification questions (e.g. How does this relate?) or questions that probe reasons and evidence (e.g. What would be an example?)
I utilize assessment rubrics when grading non-multiple-choice assignments	READING-LEVEL	I use assessment tools such a scoring sheet or a rubric when grading assignments.
I design my own assessment rubrics that outline assignment grading criteria	READING-LEVEL	I design my own scoring sheets or rubrics that outline what is required for each assignment.
I conduct diagnostic assessments including pre-tests and/or self-assessments	READING-LEVEL	I conduct pre-tests to determine what students already know about what they will be learning.
I conduct assessments that measure student progress toward learning goals	READING-LEVEL	I use assessments to measure how students meet the course learning outcomes.

Initial Item	Revision	Pilot Item
I conduct periodic assessments in the form of examinations (quizzes or tests) using curriculum-provided multiple-choice questions	READING-LEVEL	I write assessments (quizzes or tests) that are aligned to specific learning goals
I conduct periodic assessments in the form of examinations (quizzes or tests) using short answer, matching or essay questions	REMOVED	
I conduct periodic assessments in the form of projects, papers and/or presentations	READING-LEVEL	I use assessments in the form of hands-on projects.
I utilize assessment results to inform my teaching practice, so I can adapt my instruction to reach students that are having difficulty	READING-LEVEL	I use assessment outcomes to inform my teaching practice.
I utilize assessment results to adapt my lesson plans	READING-LEVEL	I adapt my lesson plans as a result of student assessment outcomes.
I provide regular, detailed assessment feedback to students on the progress of their learning	READING-LEVEL	I provide detailed feedback (oral or written) to students on how well they are learning.
I align assessments to the course learning outcomes	REMOVED	
I develop classroom presentation lessons for each class session	READING-LEVEL	I write lessons or create lesson plans for each class session.
I align classroom presentation lesson content to learning goals	REMOVED	
I utilize a variety of classroom presentation strategies in my lessons to meet the needs and strengths of different types of learners.	READING-LEVEL	I write lessons or create lesson plans that teach to a variety of learning styles (visual, auditory, kinesthetic, etc.)
I utilize Socratic questioning classroom presentation techniques within my classroom lessons	REMOVED	

Initial Item	Revision	Pilot Item
I design classroom presentation lessons that build students' problem-solving skills	REMOVED	
I use classroom presentation techniques during my lessons that encourage students to analyze information	REMOVED	
I adjust my classroom presentation lessons to provide additional explanation if necessary	READING-LEVEL	I change my lessons to give students additional explanation if necessary.
I deliver effective classroom presentation lectures during my lessons that are aligned to learning objectives	REMOVED	
I deliver effective classroom presentation lectures during my lessons that keep students engaged	READING-LEVEL	I deliver lectures that keep students engaged and interested.
I utilize guest speakers in my classroom presentations to provide relevant, real time practice information	READING-LEVEL	I invite guest speakers into the classroom to provide students with relevant work or practice information.
I use multiple classroom presentation techniques for presenting and engaging learners with different learning styles, so they can better understand the material	READING-LEVEL	I use visuals (graphics, pictures, videos, etc.) when presenting students concepts or ideas.
I design a coherent sequence and progression of learning so that classroom presentation lessons build on one another	READING-LEVEL	I communicate expectations in a clear and understandable way.
I use up-to-date materials, scenarios within my classroom presentation lessons	READING-LEVEL	I use up-to-date or current materials, scenarios and stories in my lectures.
I assign tasks and projects within my classroom presentation lessons that require technology skills	REMOVED	
I design classroom presentation lessons that build students' higher-order thinking, communication, and problem-solving skills	REMOVED	

Initial Item	Revision	Pilot Item
I design classroom presentation lessons that build students' communication skills	REMOVED	
I design classroom presentation lessons that build students' problem-solving skills	REMOVED	
I regularly provide classroom management check–in points throughout the class session to allow students to clarify the lesson, activity or content	READING-LEVEL	I regularly provide students an opportunity to ask questions so I can clarify the lesson, activity or content.
I outline course learning outcomes on the syllabus to provide students with a clear understanding of what the course entails for effective classroom management	READING-LEVEL	When I write my syllabus, I outline the course learning outcomes of the course.
I design my own course syllabus that clearly outlines how students can meet the course requirements for effective classroom management	READING-LEVEL	When I write my syllabus, I outline how students can meet the course requirements.
I use a pre-established provided syllabus that clearly outlines how students can meet the course requirements for effective classroom management	READING-LEVEL	I use a university-provided syllabus.
I clearly review the intended learning outcomes in my syllabus for effective classroom management	READING-LEVEL	I review the course learning outcomes and student expectations with the students in class.
I clearly review the student expectations in my syllabus for effective classroom management	READING-LEVEL	I clearly outline course and institutional policies regarding my attendance and late assignments on my syllabus.
I clearly outline student rights and available disability accommodations in my syllabus for effective classroom management	READING-LEVEL	I clearly outline students' rights and available disability accommodations in my syllabus.
I clearly outline specific policies regarding classroom civility in the classroom for effective classroom management	READING-LEVEL	I clearly outline specific policies regarding appropriate student behavior in my syllabus.

Initial Item	Revision	Pilot Item
I clearly outline specific policies regarding appropriate student behavior in the classroom for effective classroom management	READING-LEVEL	I utilize appropriate methods to respond to disruptive students or disruptive student behaviors that occur during the class period.
None	ADDED	I create incentives to motivate students to complete assignments.
None	ADDED	I motivate students to meet their learning goals.
None	ADDED	I balance student participation to manage dominate talkers and encourage quiet students.
None	ADDED	I use visuals (graphics, pictures, videos, etc.) when presenting students concepts or ideas.

The next step is to distribute the pilot survey with the proposed scale items to a pilot sample that represents the target population. Item analysis should be conducted on data from a sample of 100 to 200 respondents (Spector, 2019). Exploratory factor analysis (EFA) is generally used with large sample sizes (N), with N = 50 as a reasonable absolute minimum (de Winter et al., 2009). Hinkin (1998) stated in the content validity step, both Schriesheim et al. (1993) and Anderson and Gerbing (1991) have suggested that small samples may be appropriate for their analyses. Tay and Jebb, (2017) recommend for a pilot study the preliminary sample size for examining psychometric properties of items to be between 100-200 (Tay & Jebb, 2017).

Administration of the Pilot Instrument. After the item review and revising items on the instrument, participants were recruited for the pilot study. The pilot version

of the survey was sent out in a pilot format to practicing university faculty to ensure the proposed survey items were performing as expected and eliciting a range of responses. The Higher Education Teaching Practice Inventory Pilot Instrument was administered through Qualtrics. University administrators in the Colleges of Education, Liberal arts and Humanities at a mid-sized, 4-year Urban University located in the United States were contacted through email asking for permission to send the survey instrument to their undergraduate faculty. Once approval was obtained, the researcher sent survey invitations to all faculty teaching undergraduate courses in those colleges.

The number of participants recommended varies by the type of study and purpose of the research. The sample for a pilot study must be representative of the formal study population and should be large enough to provide useful information about the aspects that are being assessed (Thabane et al., 2010). The researcher distributed the survey to 400 faculty members teaching undergraduate courses at a 4-year public university to participate in the pilot study. One hundred and eight faculty members (both contingent and permanent faculty) participated in the survey of which 101 faculty members answering the survey completely.

Pilot survey respondents were asked to complete demographic information. The survey was distributed to a variety of different types of participants in terms of age, gender, highest academic degree, academic rank, area of study and teaching experience, but the sample group was homogenous. Sixty-six-point seven percent of respondents were under the age of 55 and females outnumbered males by 13%. Majority of respondents held a Masters level degree or lower and held an adjunct or vising instructor Academic rank (see Table 3).

Table 3

Pilot Survey Demographic Table

Demographic Characteristics of the Pilot Survey Sample ($N = 101$)

Variable	N	%
Age		
Under 25	1	0.9
26-35	20	18.5
36-45	28	25.9
46-55	23	21.3
56-65	16	14.8
66 and older	13	12.0
Gender		
Male	43	39.8
Female	57	52.8
Other (Bi-Gender/Transgender)	1	0.9
Highest Academic Degree		
Masters (MBA/ MS/MA/MED/Other)	52	48.1
Doctorate (Project-oriented)	7	6.5
Doctorate (Research-oriented)	6	5.6
PhD (Research-oriented Dissertation)	34	31.5
Other	2	1.9
Academic Rank		
Adjunct Instructor	63	58.3
Instructor (Visiting/Clinical)	2	1.9
Lecturer/Assistant/Associate/Visiting Lecturer	18	16.7
Assistant/Associate Professor (Non-Tenured or Visiting or Clinical)	5	4.6
Assistant/Associate Professor (Tenured)	5	4.6
Professor (Non-Tenured or Visiting or Clinical)	1	0.9
Professor of Practice	1	0.9

Pilot Study Data Analysis. In the following section, I discuss the multiple types of data analyses used to refine the pilot instrument based on the data collected during the study. These include reliability analysis and exploratory factor analysis.

Reliability analysis. Once data for the pilot study was collected, the next step was to determine the reliability and validity of the scale items through data analysis. First, I determined if the individual items in the instrument are normally distributed and

whether the items are correlated with each other to establish reliability (King, 2017).

There are different approaches for calculating reliability but calculating the internal

consistency of the scale and sub-dimensions of the construct is the most common (Tay &

Jebb, 2017). High intercorrelations between items within the same construct are

necessary as they indicate items is related to the underlying construct being measured

(DeVellis, 2017).

The most commonly used tool to measure internal consistency is to calculate the

coefficient alpha. Coefficient alpha can be easily calculated and sufficient to assess

reliability (McCrae et al., 2011). It is recommended that the internal consistency

reliability measure should be "a minimum .70 although it is recommended that .90 or

higher for high stakes decisions (e.g., selection)" (Tay & Jebb, 2017, p. 4). Coefficient

alphas below .70 are indicative of poor reliability and poor predictive validity (DeVellis,

2017, McCrae et al., 2011 and Tay & Jebb, 2017). I calculated the coefficient alpha using

Cronbach alpha on the 46-item scale in the pilot instrument and found the reliability

measure to be .950 which indicates the internal consistency of the scale is strong.

Exploratory Factor Analysis (EFA). In order to refine the item pool in this study

into formal scale constructs, factor analysis was used to select the items that best

represent each dimension within the emergent scales. Exploratory factor analysis was

conducted using Principle Axis Factoring using Oblique rotation, followed by a scree test

parallel analysis to determine the factor groupings. Lastly, reliability analysis was

conducted on the proposed sub-scales. I used the KMO Measure of Sampling Adequacy

and Bartlett's Test of Sphericity to determine if the sample size was adequate to conduct

factor analysis (Demirtaş & Akbayrak, 2017). The Kaiser-Meyer-Olkin (KMO) Measure

of Sampling Adequacy test helps determine the magnitude of intercorrelation among the variables within the data. The range of the KMO falls between 0 to 1; the accepted index globally is 0.6. To determine if the scale was appropriate for Factor Analysis, the Bartlett's Test of Sphericity must be less than 0.05. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy for the pilot instrument was .767. and the Bartlett's Test of Sphericity was significant at .000 (see Table 4). These values imply that the pilot instrument met the requirement or reliable and valid according to Kaiser-Meyer-Olkin (KMO) coefficient value and accepted by Bartlett's test of sphericity (Demirtaş & Akbayrak, 2017).

Table 4

KMO and Bartlett's Test (Pilot)

Item	Measure
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	.767
Bartlett's Test of Sphericity	
Approx. Chi-Square	2597.611
df	1035
Sig.	.000

Principle Factoring (PF). Factor analysis are statistical techniques that are applied to a set of variables to help identify which variables form subset groupings that are somewhat independent of one another. The EFA technique used for the pilot analysis is Principle Factoring (PF). In PF, variables that are correlated with each other within one subset but independent of other subsets are combined to form factors, the underlying processes responsible for creating the correlations among variables (Tabachnick & Fidell, 2018). The goal of PF is "to maximize variance extracted by orthogonal factors and estimate communalities in order to eliminate unique and error variance from variable"

(Tabachnick & Fidell, 2018, p. 497). This differs from other factor analysis techniques in that PF uses only the variance that each observed variable shares with other observed variables for analysis. The shared variance is estimated by communalities and concentrates on variables with high communality values. This technique was selected because my methodologist and I were interested in a factor solution absent of error inconsistencies and hoped to design an instrument based on the underlying constructs produced by scores on the observed variables (Tabachnick & Fidell, 2018).

Procedures. Initially, the factorability of the 46 items was examined. Several criteria for the factorability of a correlation were used. First, 46 of the 46 items correlated at least .3 with at least one other item, suggesting reasonable factorability. Second, the Kaiser-Meyer-Olkin measure of sampling adequacy and Bartlett's test of sphericity met the requirement or reliable and valid according to Kaiser-Meyer-Olkin (KMO) coefficient value and accepted by Bartlett's test of sphericity (Demirtaş & Akbayrak, 2017). Finally, the communalities were examined and indicate the amount of variance in each variable that is accounted for. Initial communalities estimate the variance in each variable accounted for by all components whereas extraction communalities estimate the variance in each variable accounted for by the components (Osborne, 2014). The initial communalities were all above .3 (see Table 5), further confirming that each item shared some common variance with other items (Zeynivandnezhad, Fereshteh, Rashed, & Kaooni, 2019). Given these overall indicators, exploratory factor analysis was conducted with all 46 items.

Table 5

Communalities Based On Principle Axis Factoring Analysis With Oblimin Rotation For 46 Items From The Pilot Higher Education Teacher Practices Inventory (HETPI) (N = 108)

	Initial	Extraction
I encourage students to think critically about what they are learning.	.755	.715
I use hands-on learning assignments in my classroom.	.803	.731
I summarize classroom lessons at the end of each class session.	.769	.693
I encourage students to reflect on the application what they are learning rather than memorize what they are learning.	.670	.563
I use a fun activity on the first day of class so students can get to know each other.	.777	.686
I encourage students to share their personal and professional experiences in class as it relates to what is being taught.	.791	.640
I assign projects in class that relate to the material being taught.	.838	.589
I encourage group discussions within the classroom.	.743	.498
I use videos or movies in class to reinforce what I am teaching.	.766	.818
I relate course content to the work environment.	.761	.647
I provide students with flexible assignment deadlines.	.694	.522
I encourage students to work together in small groups during class.	.768	.576
I clearly outline grading policies for each assignment.	.761	.499
I use different types of assessments to meet the needs of different types of learners.	.590	.300
I assess learning by using questioning techniques such as clarification questions (e.g. How does this relate?) or questions	.868	.751

	Initial	Extraction
that probe reasons and evidence (e.g. What would be an example?)		
I use assessment tools such a scoring sheet or a rubric when grading assignments.	.765	.601
I design my own scoring sheets or rubrics that outline what is required for each assignment.	.735	.688
I conduct pre-tests to determine what students already know about what they will be learning.	.650	.421
I write assessments (quizzes or tests) that are aligned to specific learning goals	.721	.474
I use assessments in the form of hands-on projects.	.852	.735
I use assessment results to identify which students are having difficulty and may need additional help.	.774	.574
I provide detailed feedback (oral or written) to students on how well they are learning.	.697	.392
I use assessments to measure how students meet the course learning outcomes.	.764	.617
I use assessment outcomes to inform my teaching practice.	.820	.720
I adapt my lesson plans as a result of student assessment outcomes.	.776	.624
I write lessons or create lesson plans for each class session.	.831	.719
I write lessons or create lesson plans that teach to a variety of learning styles (visual, auditory, kinesthetic, etc.)	.790	.620
I write lessons or create lesson plans that teach to a variety of learning styles (visual, auditory)	.859	.735
I change my lessons to give students additional explanation if necessary.	.739	.680
I deliver lectures that keep students engaged and interested.	.697	.418

	Initial	Extraction
I invite guest speakers into the classroom to provide students with relevant work or practice information.	.768	.571
I use visuals (graphics, pictures, videos, etc.) when presenting students concepts or ideas.	.782	.540
I use up-to-date or current materials, scenarios and stories in my lectures.	.752	.543
I regularly provide students an opportunity to ask questions so I can clarify the lesson, activity or content.	.663	.516
When I write my syllabus, I outline the course learning outcomes of the course.	.826	.740
When I write my syllabus, I outline how students can meet the course requirements.	.770	.594
I use a university-provided syllabus.	.509	.341
I review the course learning outcomes and student expectations with the students in class.	.803	.652
I clearly outline course and institutional policies regarding my attendance and late assignments on my syllabus.	.799	.767
I clearly outline students' rights and available disability accommodations in my syllabus.	.605	.312
I clearly outline specific policies regarding appropriate student behavior in my syllabus.	.750	.502
I utilize appropriate methods to respond to disruptive students or disruptive student behaviors that occur during the class period.	.749	.709
I create incentives to motivate students to complete assignments.	.593	.455
I motivate students to meet their learning goals.	.847	.821
I communicate expectations in a clear and understandable way.	.737	.666

	Initial	Extraction
I balance student participation to manage dominate talkers and encourage quiet students.	.746	.591

Once communalities were established and the KMO and Bartlett's test confirmed
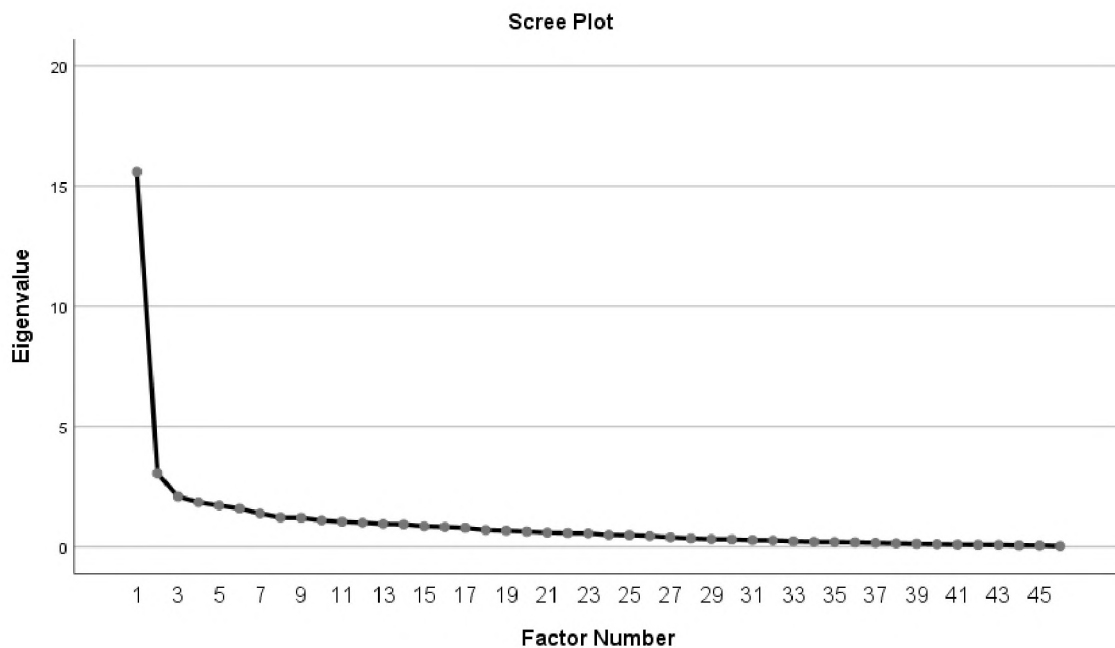
the sample size was adequate for factor analysis, factors were extracted. A scree plot,

Kaiser Guttman's eigenvalues criteria, parallel analysis, a pattern matrix and researcher

judgment were used to determine the number of factors to extract.

Figure 3: *Scree Plot for the pilot Higher Education Teacher Practices Inventory*

The purpose of a scree plot is to identify the number of factors based on the

distinct break in the slope of the plot (Tabachnick & Fidell, 2007, Tay & Jebb, 2017).

According to the scree plot in Figure 3, there is a slight break in the slope of the plot

between factor five and six. This result would suggest retaining five factors (see Figure

3).

98

The Kaiser Guttman's eigenvalues criteria suggests retaining factors with

'Eigenvalues greater than one' (Guttman, 1954; Kaiser, 1970). With this criterion in

mind, the results suggest retaining 11 factors which account for 69.26% of the variance

being accounted for (see Table 6).

Table 6

Kaiser Guttman's Eigenvalues Criteria For The Pilot Higher Education Teacher
Practices Inventory

| Factor | Initial Eigenvalues | | | | Rotation Sums of Squared Loadings | | | |
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	15.593	33.898	33.90	15.22	33.09	33.09	6.13
2	3.055	6.641	40.54	2.66	5.79	38.87	4.79
3	2.092	4.548	45.09	1.72	3.73	42.60	5.91
4	1.856	4.034	49.12	1.52	3.30	45.90	5.84
5	1.722	3.743	52.87	1.31	2.84	48.74	4.08
6	1.596	3.47	56.34	1.20	2.61	51.36	6.29
7	1.385	3.01	59.35	0.99	2.15	53.51	5.46
8	1.218	2.648	61.99	0.83	1.81	55.31	5.83
9	1.204	2.617	64.61	0.76	1.65	56.96	4.70
10	1.098	2.387	67.00	0.70	1.53	58.49	3.72
11	1.043	2.267	69.26	0.66	1.43	59.93	5.01
12	0.999	2.171	71.44				
13	0.952	2.069	73.50				
14	0.929	2.02	75.52				
15	0.854	1.857	77.38				
16	0.824	1.791	79.17				
17	0.787	1.711	80.88				
18	0.694	1.508	82.39				
19	0.668	1.453	83.84				
20	0.631	1.372	85.22				
21	0.59	1.283	86.50				
22	0.57	1.239	87.74				
23	0.559	1.216	88.95				
24	0.491	1.067	90.02				
25	0.484	1.052	91.07				
26	0.448	0.975	92.05				
27	0.392	0.852	92.90				
28	0.347	0.754	93.65				

	Initial Eigenvalues				Rotation Sums of Squared Loadings		
Factor	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
29	0.32	0.696	94.35				
30	0.303	0.658	95.01				
31	0.276	0.599	95.61				
32	0.263	0.571	96.18				
33	0.227	0.494	96.67				
34	0.206	0.447	97.12				
35	0.196	0.426	97.54				
36	0.183	0.399	97.94				
37	0.164	0.356	98.30				
38	0.142	0.309	98.61				
39	0.125	0.272	98.88				
40	0.109	0.237	99.12				
41	0.095	0.206	99.32				
42	0.084	0.182	99.51				
43	0.079	0.171	99.68				
44	0.061	0.132	99.81				
45	0.056	0.121	99.93				
46	0.033	0.071	100				

Parallel analysis is an additional statistical method used to help researchers determine the number of factors to extract or retain in an exploratory factor analysis (Wood, Gnonhosou & Bowling, 2015). The purpose of a parallel analysis plot is to identify the number of factors which fall above the parallel line that runs parallel to the scree plot. The parallel analysis results suggest retaining 5 factors (see Figure 4).

An important feature of using factor analysis is factor rotation. Factor rotation allows for the axes of the factors to be rotated in order to make the output of the factor analysis more understandable (DeVillis, 2017, Tabachnick & Fidell, 2018, Yong & Pearce, 2013). Using the results of the scree plot and parallel analysis as a guide, the researcher conducted the principle factor analysis using oblique rotation, specifying the number of factors to be retained as five. Oblique rotation provides the researcher with

results that include a pattern matrix. A pattern matrix contains the item loadings by

factor and provides a correlation matrix that includes the correlations between the factors
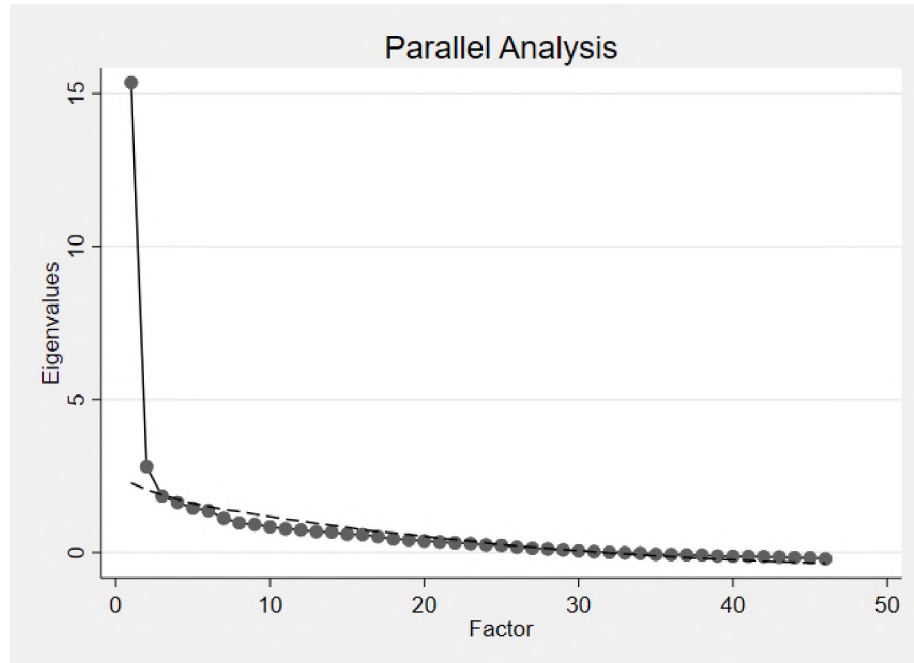
(DeVillis, 2017, Yong & Pearce, 2013). The pattern matric indicates how strongly each

Figure 4: *Parallel Analysis for the pilot Higher Education Teaching Practices Inventory*

item is related to the factor (see Table 7).

Table 7

Pattern Matrix (Pilot)

Item	Factor				
	1	2	3	4	5
28) I write lessons or create lesson plans that teach to a variety of learning styles (visual, auditory, kinesthetic, etc.)	.801	.027	.155	-.197	-.005
1) I encourage students to think critically about what they are learning.	.788	-.002	-.122	-.016	.127
15) I assess learning by using questioning techniques such as clarification questions (e.g. How does this relate?) or questions that probe reasons and evidence (e.g. What would be an example?)	.720	.081	.001	.104	.072
33) I use up-to-date or current materials, scenarios and stories in my lectures.	.528	.253	-.144	.107	.033
44) I motivate students to meet their learning goals.	.506	.013	.149	-.065	.333
4) I encourage students to reflect on the application what they are learning rather than memorize what they are learning.	.457	.140	.017	.121	.221
23) I use assessments to measure how students meet the course learning outcomes.	.440	-.114	.432	.203	-.173
29) I change my lessons to give students additional explanation if necessary.	.439	.102	.095	-.002	-.006
32) I use visuals (graphics, pictures, videos, etc.) when presenting students concepts or ideas.	.433	.357	.037	.175	-.354
21) I use assessment results to identify which students are having difficulty and may need additional help.	.396	.119	.332	.139	.034
34) I regularly provide students an opportunity to ask questions so I	.386	.147	-.243	.249	.050

102

Item	Factor				
	1	2	3	4	5
can clarify the lesson, activity or content.					
19) I write assessments (quizzes or tests) that are aligned to specific learning goals	.384	-.129	.325	.219	-.048
3) I summarize classroom lessons at the end of each class session.	.348	-.076	.282	.136	.242
25) I adapt my lesson plans as a result of student assessment outcomes.	.338	.225	.278	.138	-.145
35) When I write my syllabus, I outline the course learning outcomes of the course.	.319	.181	.144	.261	-.052
36) When I write my syllabus, I outline how students can meet the course requirements.	.313	.218	.226	.278	-.118
40) I clearly outline students' rights and available disability accommodations in my syllabus.	.309	-.114	.047	.193	.159
9) I use videos or movies in class to reinforce what I am teaching.	.137	.702	-.110	.117	-.077
5) I use a fun activity on the first day of class so students can get to know each other.	-.005	.674	-.044	-.128	.282
31) I invite guest speakers into the classroom to provide students with relevant work or practice information.	-.025	.655	.174	-.171	.047
10) I relate course content to the work environment.	-.179	.636	.042	.335	.022
6) I encourage students to share their personal and professional experiences in class as it relates to what is being taught.	.239	.533	-.131	.224	.104
20) I use assessments in the form of hands-on projects.	.020	.432	.410	-.211	.245
38) I review the course learning outcomes and student expectations with the students in class.	.199	.399	.260	.279	-.054
2) I use hands-on learning assignments in my classroom.	.179	.396	.270	-.320	.227
27) I write lessons or create lesson plans that teach to a variety of	.192	.332	.303	.161	-.022

Item	Factor				
	1	2	3	4	5
learning styles (visual, auditory, kinesthetic, etc.)					
8) I encourage group discussions within the classroom.	.248	.331	-.044	-.065	.305
7) I assign projects in class that relate to the material being taught.	.153	.311	.141	.176	.098
14) I use different types of assessments to meet the needs of different types of learners.	.010	.270	.236	.139	.072
17) I design my own scoring sheets or rubrics that outline what is required for each assignment.	.024	-.113	.671	.210	.021
16) I use assessment tools such a scoring sheet or a rubric when grading assignments.	-.153	.150	.661	-.026	.073
24) I use assessment outcomes to inform my teaching practice.	.440	.115	.476	-.106	-.133
26) I write lessons or create lesson plans for each class session.	.281	.098	.369	.191	.104
18) I conduct pre-tests to determine what students already know about what they will be learning.	.029	.170	.348	-.097	.259
13) I clearly outline grading policies for each assignment.	.103	.014	.344	.267	.268
39) I clearly outline course and institutional policies regarding my attendance and late assignments on my syllabus.	-.053	.038	.214	.723	.060
41) I clearly outline specific policies regarding appropriate student behavior in my syllabus.	-.043	.092	.161	.449	.246
45) I communicate expectations in a clear and understandable way.	.370	.060	.185	.407	-.091
30) I deliver lectures that keep students engaged and interested.	.173	.119	-.072	.394	.036
42) I utilize appropriate methods to respond to disruptive students or disruptive student behaviors that occur during the class period.	.184	.018	-.029	.419	.597
37) I use a university-provided syllabus.	-.084	.032	-.049	.059	.553

Item	Factor				
	1	2	3	4	5
22) I provide detailed feedback (oral or written) to students on how well they are learning.	.301	-.025	.114	-.003	.391
46) I balance student participation to manage dominate talkers and encourage quiet students.	.204	.362	-.004	.076	.367
11) I provide students with flexible assignment deadlines.	.027	.188	.181	.025	.356
12) I encourage students to work together in small groups during class.	.297	.199	.120	-.313	.339
43) I create incentives to motivate students to complete assignments.	.153	.189	.099	-.068	.278
Eigenvalues	15.593	3.055	2.092	1.856	1.722

Factor loadings indicate the extent each item represents the underlying factor. There are many recommendations regarding factor loading cutoffs. It is recommended that items "(a) load onto their primary factor above .40, (b) load onto alternative factors below .30, and (c) demonstrate a difference of .20 between their primary and alternative factor loadings" (Howard, 2016, p. 57). The researcher decided that in order to arrive at a final factor structure that limited cross loadings of items, only items with a loading of greater than .3 were retained (see Table 7). This provided a minimum of four items loading on each factor. Items that may have loaded on more than one factor were maintained only if there was a difference of .10 between their primary and alternative factor loadings. This threshold is lower than the suggested .20 rule due to the instrument being in a pilot stage (Howard, 2016). Items 23, 21, 19, 20, 27, 8, 14, 24, 22, 46 and 43 were removed.

Lastly, the final step in exploratory factor analysis involves interpreting and labeling the factors identified from the analysis. Initially, the researcher believed the items would be organized into four themes; Adult Learning Theory, Classroom Management Strategies, Classroom Facilitation Methods and Assessment of Learning Strategies and expected the items to load in a similar way. However, after conducting an exploratory factor analysis, reviewing the scree plot, evaluating Kaiser Guttman's eigenvalues criteria, conducting a parallel analysis, and reviewing item loadings in the pattern matrix, the researcher determined the number of factors to extract to be five. Factor one contained 13 items and was named "Facilitate Learning Strategies". Factor two contained 8 items and was named "Adult Learning Engagement". Factor three contained 5 items and was named "Assessment Tools". Factor four contained 4 times and was named "Course and Classroom Policies". Factor five contained 5 times and was named "Classroom Management Practice".

Internal Consistency. In order to confirm the internal consistency reliability of each of the new factor scales, Cronbach's alpha was measured. The coefficient alpha was also calculated on the 5 sub-scales; facilitate learning strategies, adult learning engagement, assessment tools, course and classroom policies and classroom management practice. The facilitate learning strategies sub-scale consisting of 13 items resulted in a reliability measure coefficient alpha of .893. This indicates the internal consistency of the sub-scale is strong. The adult learning engagement sub-scale consisting of 8 items resulted in a reliability measure coefficient alpha of .853. This indicates the internal consistency of the sub-scale is strong. The assessment tools sub-scale consisting of 5 items resulted in a reliability measure coefficient alpha of .732. This indicates the

internal consistency of the sub-scale is satisfactory. The course & classroom policies sub-scale consisting of 5 items resulted in a reliability measure coefficient alpha of .674. This indicates the internal consistency of the sub-scale is adequate. The classroom management practice sub-scale consisting of 5 items resulted in a reliability measure coefficient alpha of .682. This indicates the internal consistency of the sub-scale is adequate. Since the sub-scales' coefficient alphas were acceptable the pilot instrument was refined. The resulting instrument entitled the "Higher Education Teaching Practice Inventory" contains 35 items.

Formal Study

As a result of the pilot study data analyses, the pilot instrument was refined into a formal instrument entitled the Higher Education Teaching Practice Instrument. This formal survey instrument intends to measure the perceived level of understanding of effective teaching practices of faculty members in higher education. The instrument was designed to measure five constructs related to the understanding of facilitate learning strategies, adult learning engagement, assessment tools, course and classroom policies and classroom management practice.

Based on the outcome of the pilot analysis the item pool was refined (Cicchetti, 1994; Hallgren, 2012). This included deleting items that may have loaded on more than one factor with a difference less than 0.10 between their primary and alternative factor loadings. Items 23, 21, 19, 20, 27, 8, 14, 24, 22, 46 and 43 were removed.

The initial instrument contained 46 scale items. Ten items were removed from the instrument resulting in the formal instrument containing 35 items (Table 8). Lastly, the instrument was prepared for the formal study.

Table 8

Revisions To Pilot Survey Items For Formal Study

Pilot Item	Revision
1.　I encourage students to think critically about what they are learning.	Maintained
2.　I use hands-on learning assignments in my classroom.	Maintained
3.　I summarize classroom lessons at the end of each class session.	Maintained
4.　I encourage students to reflect on the application what they are learning rather than memorize what they are learning.	Maintained
5.　I use a fun activity on the first day of class so students can get to know each other.	Maintained
6.　I encourage students to share their personal and professional experiences in class as it relates to what is being taught.	Maintained
7.　I assign projects in class that relate to the material being taught.	Maintained
8.　I encourage group discussions within the classroom.	Removed
9.　I use videos or movies in class to reinforce what I am teaching.	Maintained
10. I relate course content to the work environment.	Maintained
11. I provide students with flexible assignment deadlines.	Maintained
12. I encourage students to work together in small groups during class.	Maintained
13. I clearly outline grading policies for each assignment.	Maintained
14. I use different types of assessments to meet the needs of different types of learners.	Removed
15. I assess learning by using questioning techniques such as clarification questions (e.g. How does this relate?) or questions that probe reasons and evidence (e.g. What would be an example?)	Maintained

Pilot Item	Revision
16. I use assessment tools such a scoring sheet or a rubric when grading assignments.	Maintained
17. I design my own scoring sheets or rubrics that outline what is required for each assignment.	Maintained
18. I conduct pre-tests to determine what students already know about what they will be learning.	Maintained
19. I write assessments (quizzes or tests) that are aligned to specific learning goals	Removed
20. I use assessments in the form of hands-on projects.	Removed
21. I use assessment results to identify which students are having difficulty and may need additional help.	Removed
22. I provide detailed feedback (oral or written) to students on how well they are learning.	Removed
23. I use assessments to measure how students meet the course learning outcomes.	Removed
24. I use assessment outcomes to inform my teaching practice.	Removed
25. I adapt my lesson plans as a result of student assessment outcomes.	Maintained
26. I write lessons or create lesson plans for each class session.	Maintained
27. I write lessons or create lesson plans that teach to a variety of learning styles (visual, auditory, kinesthetic, etc.)	Removed
28. I write lessons or create lesson plans that teach to a variety of learning styles (visual, auditory)	Maintained
29. I change my lessons to give students additional explanation if necessary.	Maintained
30. I deliver lectures that keep students engaged and interested.	Maintained
31. I invite guest speakers into the classroom to provide students with relevant work or practice information.	Maintained

Pilot Item	Revision
32. I use visuals (graphics, pictures, videos, etc.) when presenting students concepts or ideas.	Maintained
33. I use up-to-date or current materials, scenarios and stories in my lectures.	Maintained
34. I regularly provide students an opportunity to ask questions so I can clarify the lesson, activity or content.	Maintained
35. When I write my syllabus, I outline the course learning outcomes of the course.	Maintained
36. When I write my syllabus, I outline how students can meet the course requirements.	Maintained
37. I use a university-provided syllabus.	Maintained
38. I review the course learning outcomes and student expectations with the students in class.	Maintained
39. I clearly outline course and institutional policies regarding my attendance and late assignments on my syllabus.	Maintained
40. I clearly outline students' rights and available disability accommodations in my syllabus.	Maintained
41. I clearly outline specific policies regarding appropriate student behavior in my syllabus.	Maintained
42. I utilize appropriate methods to respond to disruptive students or disruptive student behaviors that occur during the class period.	Maintained
43. I create incentives to motivate students to complete assignments.	Removed
44. I motivate students to meet their learning goals.	Maintained
45. I communicate expectations in a clear and understandable way.	Maintained
46. I balance student participation to manage dominate talkers and encourage quiet students.	Removed

The next step is to distribute the formal survey with the revised scale items to the target population. Item analysis should be conducted on data from a sample of 100 to

200 respondents (Spector, 2019). Exploratory factor analysis (EFA) is generally used with large sample sizes (N), with N = 50 as a reasonable absolute minimum (de Winter et al., 2009). Hinkin (1998) stated in the content validity step, both Schriesheim et al. (1993) and Anderson and Gerbing (1991) have suggested that small samples may be appropriate for their analyses. Tay & Jebb, (2017) recommend for study the preliminary sample size for examining psychometric properties of items to be between 100-200 (Tay & Jebb, 2017).

Administration of the Instrument. After revising items on the instrument, participants were recruited for the formal study. The survey was sent out to practicing university faculty. All university faculty responsible for teaching undergraduate courses at two mid-sized, 4-year Urban University located in the United States were sent electronic survey invitations. The Higher Education Teaching Practice Inventory Pilot Instrument was administered through Qualtrics.

The number of participants recommended varies by the type of study and purpose of the research. The sample for a formal study must be representative of the population and should be large enough to provide useful information about the aspects that are being assessed (Thabane et al., 2010). The researcher distributed the survey to 1,860 faculty members teaching undergraduate courses at a 4-year public university outside the State of Ohio and 1,145 faculty members teaching undergraduate courses at a 4-year public university with the State of Ohio to participate in the study. 364 faculty members participated in the survey.

Survey respondents were asked to complete demographic information. The survey

was distributed to a variety of different types of participants in terms of age, gender,

highest academic degree, academic rank, but the group was homogenous (See Table 9).

Table 9

Survey Demographic Table For The Formal Higher Education Teacher Practices Inventory Study

Demographic Characteristics of the Survey Sample ($N = 364$)

Variable	N	%
Age		
25 years or younger	13	3.6
26-35	50	13.7
36-45	76	20.9
46-55	82	22.5
56-64	64	17.6
65 years or older	47	12.9
Total	332	91.2
Missing	32	8.8
Total	364	100.0
Gender		
Male	158	43.4
Female	176	48.4
Other (Bi-Gender/Transgender)	1	0.3
Total	335	92.0
Missing	29	8.0
Total	364	100.0
Academic Rank		
Adjunct Instructor/Part-Time Instructor	76	20.9
Instructor (Visiting/Clinical)	4	1.1
Lecturer/Assistant/Associate/Visiting/Senior Lecturer	40	11.0
Assistant/Associate Professor (Non-Tenured or Visiting or Clinical)	29	8.0
Assistant/Associate Professor (Tenured)	81	22.3
Professor (Non-Tenured or Visiting or Clinical)	8	2.2
Professor (Tenured)	52	14.3
Other	45	12.4
Total	335	92.0

Missing	29	8.0
Total	364	100.0
Academic Rank Groups		
Contingent Faculty	157	43.1
Permanent Faculty	133	36.5
Other	45	12.4
Total	335	92.0
Missing	29	8.0
Total	364	100.0

Formal Study Data Analysis. In the following section, I discuss the multiple types of data analyses used to refine the formal instrument based on the data collected during the study. These include reliability analysis and exploratory factor analysis.

Reliability analysis. Once data for the formal study was collected, the next step was to determine the reliability and validity of the scale items through data analysis. First, I determined if the individual items in the instrument are normally distributed and whether the items are correlated with each other to establish reliability (King, 2017). There are different approaches for calculating reliability but calculating the internal consistency of the scale and sub-dimensions of the construct is the most common (Tay & Jebb, 2017). High intercorrelations between items within the same construct are necessary as they indicate items is related to the underlying construct being measured (DeVellis, 2017).

The most commonly used tool to measure internal consistency is to calculate the coefficient alpha. Alpha can be easily calculated and sufficient to assess reliability (McCrae et al., 2011). It is recommended that the internal consistency reliability measure should be "a minimum .70 although it is recommended that .90 or higher for high stakes decisions (e.g., selection)" (Tay & Jebb, 2017, p. 4). Alphas below .70 are indicative of

poor reliability and poor predictive validity (DeVellis, 2017, McCrae et al., 2011 and Tay & Jebb, 2017). I calculated the coefficient alpha on the 35-item scale in the formal instrument and found the reliability measure to be .917 which indicates the internal consistency of the scale is strong.

Exploratory Factor Analysis (EFA). In order to refine the item pool in this study into the final scale constructs, factor analysis was used to select the items that best represent each dimension within the emergent scales. Exploratory factor analysis was conducted using Principle Axis Factoring using Oblique rotation, followed by a scree test parallel analysis to determine the factor groupings. Lastly, reliability analysis was conducted on the proposed sub-scales. I used the KMO Measure of Sampling Adequacy and Bartlett's Test of Sphericity to determine if the sample size was adequate to conduct factor analysis (Demirtaş & Akbayrak, 2017). The range of the KMO falls between 0 to 1; the accepted index globally is 0.6. To determine if the scale was appropriate for Factor Analysis, the Bartlett's Test of Sphericity must be less than 0.05. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy for the formal instrument was .902 and the Bartlett's Test of Sphericity was significant at .000 (See Table 10). These values imply that the pilot instrument met the requirement or reliable and valid according to Kaiser-Meyer-Olkin (KMO) coefficient value and accepted by Bartlett's test of sphericity (Demirtaş & Akbayrak, 2017).

Table 10

KMO And Bartlett's Test For The Formal Higher Education Practice Inventory Study

Item	Measure
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.902
Bartlett's Test of Sphericity	
Approx. Chi-Square	3644.735
df	595
Sig.	.000

Principle Factoring (PF). Factor analysis are statistical techniques that are

applied to a set of variables to help identify which variables form subset groupings that

are somewhat independent of one another. The EFA technique used for the pilot analysis

is Principle Factoring (PF). In PF, variables that are correlated with each other within

one subset but independent of other subsets are combined to form factors, the underlying

processes responsible for creating the correlations among variables (Tabachnick & Fidell,

2018). The goal of PF is "to maximize variance extracted by orthogonal factors and

estimate communalities in order to eliminate unique and error variance from variable"

(Tabachnick & Fidell, 2018, p. 497). This differs from other factor analysis techniques

in that PF uses only the variance that each observed variable shares with other observed

variables for analysis. The shared variance is estimated by communalities and

concentrates on variables with high communality values. This technique was selected

because I was interested in a factor solution absent of error inconsistencies and wished to

design an instrument based on the underlying constructs produced by scores on the

observed variables (Tabachnick & Fidell, 2018).

Procedures. Initially, the factorability of the 35 items was examined. Several

criteria for the factorability of a correlation were used. First, 35 of the 35 items

correlated at least .3 with at least one other item, suggesting reasonable factorability.

Second, the Kaiser-Meyer-Olkin measure of sampling adequacy and Bartlett's test of

sphericity met the requirement or reliable and valid according to Kaiser-Meyer-Olkin

(KMO) coefficient value and accepted by Bartlett's test of sphericity (Demirtaş &

Akbayrak, 2017). Finally, the 34 of the 35 communalities were all above .3 before

rotation (see Table 11), further confirming that most items shared some common variance

with other items (Zeynivandnezhad, Fereshteh, Rashed, & Kaooni, 2019). One item's

communality reported at .220. Communalities between 0.25 and 0.4 have been suggested

as acceptable cutoff values (Beavers et al., 2013). This item was retained by the

researcher as it is close to the acceptable range. Given these overall indicators,

exploratory factor analysis was conducted with all 35 items.

Table 11

Communalities Based On A Principle Axis Factoring Analysis With Oblimin Rotation For 35 Items From The Formal Higher Education Teaching Practice Inventory (HETPI) (N = 364)

	Initial	Extraction
I encourage students to think critically about what they are learning.	.525	.424
I use hands-on learning assignments in my classroom.	.510	.433
I summarize classroom lessons at the end of each class session.	.399	.295
I encourage students to reflect on the application of what they are learning rather than memorize what they are learning.	.515	.481
I use a fun activity on the first day of class so students can get to know each other.	.402	.410
I encourage students to share their personal and professional experiences in class as it relates to what is being taught.	.438	.385
I assign projects in class that relate to the material being taught.	.429	.339
I use videos or movies in class to reinforce what I am teaching.	.402	.275
I relate course content to the work environment.	.460	.347
I clearly outline grading policies for each assignment.	.434	.403
I assess learning by using questioning techniques such as clarification questions (e.g. How does this relate?) or questions that probe reasons and evidence (e.g. What would be an example?)	.368	.341
I use assessment tools such a scoring sheet or a rubric when grading assignments.	.496	.428
I design my own scoring sheets or rubrics that outline what is required for each assignment.	.541	.475
I conduct pre-tests to determine what students already know about what they will be learning.	.329	.247
I provide detailed feedback (oral or written) to students on how well they are learning.	.391	.341
I adapt my lesson plans as a result of student assessment outcomes.	.454	.403

117

	Initial	Extraction
I write lessons or create lesson plans for each class session.	.375	.231
I write lessons or create lesson plans that teach to a variety of learning styles (visual, auditory, kinesthetic, etc.)	.507	.362
I change my lessons to give students additional explanation if necessary.	.439	.378
I deliver lectures that keep students engaged and interested.	.519	.454
I invite guest speakers into the classroom to provide students with relevant work or practice information.	.381	.334
I use visuals (graphics, pictures, videos, etc.) when presenting students concepts or ideas.	.456	.333
I use up-to-date or current materials, scenarios and stories in my lectures.	.476	.413
I regularly provide students an opportunity to ask questions so I can clarify the lesson, activity or content.	.462	.415
When I write my syllabus, I outline the course learning outcomes of the course.	.494	.434
When I write my syllabus, I outline how students can meet the course requirements.	.420	.378
I use a university-provided syllabus.	.300	.268
I review the course learning outcomes and student expectations with the students in class.	.435	.374
I clearly outline course and institutional policies regarding my attendance and late assignments on my syllabus.	.517	.550
I clearly outline students' rights and available disability accommodations in my syllabus.	.383	.375
I clearly outline specific policies regarding appropriate student behavior in my syllabus.	.493	.527
I utilize appropriate methods to respond to disruptive students or disruptive student behaviors that occur during the class period.	.423	.309
I motivate students to meet their learning goals.	.513	.475
I communicate expectations in a clear and understandable way.	.513	.460

	Initial	Extraction
I provide students with flexible assignment deadlines.	.220	.131

Once communalities were established and the KMO and Bartlett's test confirmed the sample size was adequate for factor analysis, factors were extracted. A scree plot, Kaiser Guttman's eigenvalues criteria, parallel analysis, a pattern matrix and researcher judgment were used to determine the number of factors to extract.

The purpose of a scree plot is to identify the number of factors based on the distinct break in the slope of the plot (Tabachnick & Fidell, 2007, Tay & Jebb, 2017). According to the scree plot in Figure 5, there is a slight break in the slope of the plot between factor four and five and begins sloping horizontal. This result would suggest retaining four factors (see Figure 5).
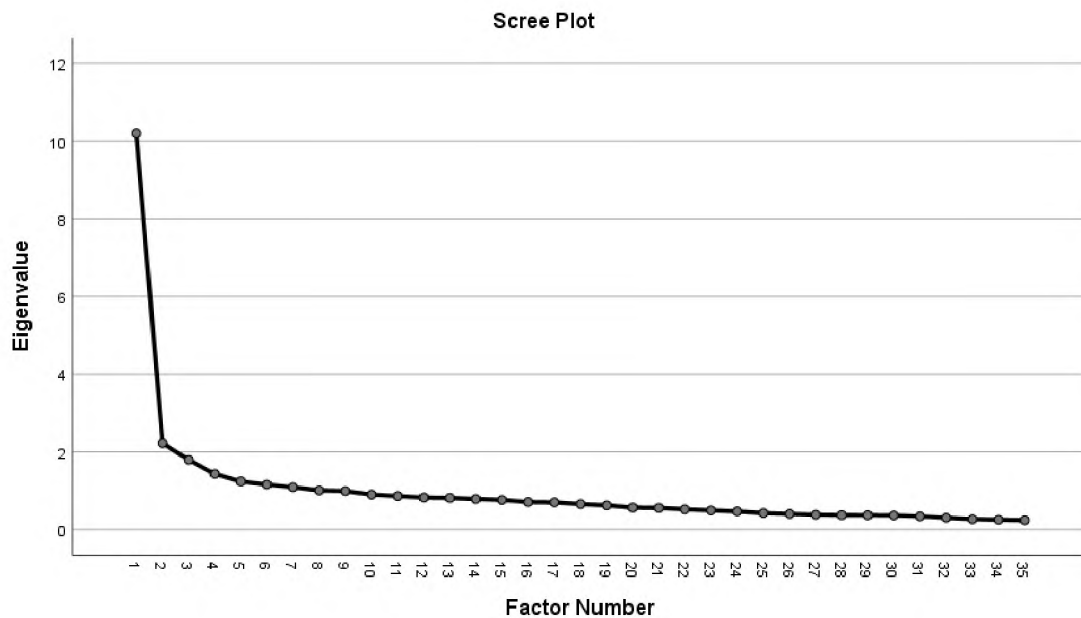
Figure 5: *Scree Plot for the Formal Higher Education Teaching Practices Inventory study*

The Kaiser Guttman's eigenvalues criteria suggests retaining factors with 'Eigenvalues greater than one' (Guttman, 1954; Kaiser, 1970). With this criterion in mind, the results suggest retaining 8 factors which account for 57.53% of the variance being accounted for (see Table 12).

Table 12

Kaiser Guttman's Eigenvalues Criteria For The Formal Higher Education Teacher Practices Inventory Study

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings			
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	10.206	29.159	29.159	9.686	27.673	27.673	5.295
2	2.221	6.346	35.505	1.695	4.843	32.516	2.040
3	1.793	5.124	40.629	1.315	3.757	36.273	4.088
4	1.430	4.086	44.714	0.927	2.648	38.921	5.326
5	1.236	3.530	48.245	0.831	2.375	41.296	4.436
6	1.155	3.301	51.546	0.692	1.977	43.273	4.615
7	1.088	3.107	54.653	0.590	1.684	44.957	4.465
8	1.005	2.873	57.526	0.530	1.514	46.471	3.246
9	0.989	2.824	60.351				
10	0.897	2.562	62.913				
11	0.859	2.454	65.367				
12	0.822	2.347	67.714				
13	0.810	2.313	70.027				
14	0.783	2.238	72.265				
15	0.760	2.171	74.436				
16	0.704	2.012	76.448				
17	0.697	1.990	78.438				
18	0.652	1.864	80.302				
19	0.621	1.773	82.075				
20	0.563	1.608	83.683				
21	0.555	1.585	85.268				
22	0.518	1.481	86.749				
23	0.491	1.403	88.152				
24	0.464	1.326	89.478				
25	0.421	1.204	90.681				
26	0.399	1.141	91.822				
27	0.378	1.080	92.903				
28	0.368	1.052	93.954				

		Initial Eigenvalues			Rotation Sums of Squared Loadings		
Factor	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
29	0.367	1.048	95.002				
30	0.360	1.030	96.032				
31	0.336	0.960	96.992				
32	0.301	0.861	97.853				
33	0.264	0.755	98.608				
34	0.250	0.713	99.321				
35	0.238	0.679	100.000				

Parallel analysis is an additional statistical method used to help researchers determine the number of factors to extract or retain in an exploratory factor analysis (Wood, Gnonhosou & Bowling, 2015). The purpose of a parallel analysis plot is to identify the number of factors which fall above the parallel line that runs parallel to the scree plot without interference. The parallel analysis results suggest retaining 4 factors (see Figure 6).
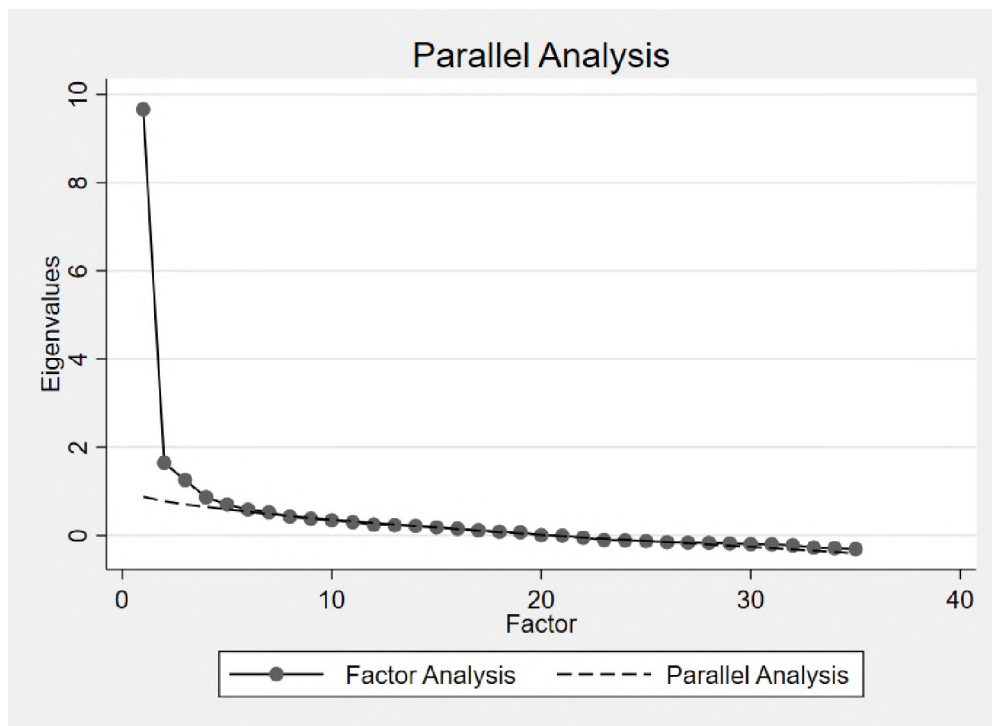
Figure 6: *Parallel Analysis for the Formal Higher Education Teaching Practices Inventory study*

An important feature of using factor analysis is factor rotation. Factor rotation allows for the axes of the factors to be rotated in order to make the output of the factor analysis more understandable (DeVillis, 2017, Tabachnick & Fidell, 2018, Yong & Pearce, 2013). Using the results of the scree plot and parallel analysis as a guide, the researcher conducted the principle factor analysis using oblique rotation, specifying the number of factors to be retained as four. Oblique rotation provides the researcher with results that include a pattern matrix. A pattern matrix contains the item loadings by factor and provides a correlation matrix that includes the correlations between the factors (DeVillis, 2017, Yong & Pearce, 2013). The pattern matric indicates how strongly each item is related to the factor (see Table 13).

Table 13

Pattern Matrix For The Formal Higher Education Teacher Practices Inventory Study

Item	Factor			
	1	2	3	4
I deliver lectures that keep students engaged and interested.	.700	-.045	-.046	.039
I use up-to-date or current materials, scenarios and stories in my lectures.	.650	.032	-.028	-.026
I encourage students to think critically about what they are learning.	.604	-.023	.094	.016
I encourage students to reflect on the application of what they are learning rather than memorize what they are learning.	.603	.037	.143	-.018
I motivate students to meet their learning goals.	.583	.091	.052	.098
I regularly provide students an opportunity to ask questions so I can clarify the lesson, activity or content.	.579	-.003	.157	-.097
I communicate expectations in a clear and understandable way.	.514	-.157	.250	.138
I change my lessons to give students additional explanation if necessary.	.510	.163	.053	-.017
I use visuals (graphics, pictures, videos, etc.) when presenting students concepts or ideas.	.501	.107	-.083	.142
I provide detailed feedback (oral or written) to students on how well they are learning.	.496	-.019	-.004	.213
I assess learning by using questioning techniques such as clarification questions (e.g. How does this relate?) or questions that probe reasons and evidence (e.g. What would be an example?)	.471	.182	.057	-.038
When I write my syllabus, I outline how students can meet the course requirements.	.378	.065	.306	-.009
I adapt my lesson plans as a result of student assessment outcomes.	.374	.232	-.096	.294

Item	Factor			
	1	2	3	4
When I write my syllabus, I outline the course learning outcomes of the course.	.335	-.065	.328	.227
I summarize classroom lessons at the end of each class session.	.290	.136	.089	.227
I use a fun activity on the first day of class so students can get to know each other.	-.060	.639	.084	.000
I use hands-on learning assignments in my classroom.	.134	.582	.007	.026
I invite guest speakers into the classroom to provide students with relevant work or practice information.	.168	.520	-.039	-.051
I use a university-provided syllabus.	-.274	.474	.081	.179
I encourage students to share their personal and professional experiences in class as it relates to what is being taught.	.237	.437	.172	-.127
I relate course content to the work environment.	.307	.407	.059	-.123
I use videos or movies in class to reinforce what I am teaching.	.229	.376	.063	-.043
I write lessons or create lesson plans that teach to a variety of learning styles (visual, auditory, kinesthetic, etc.)	.178	.373	.039	.213
I assign projects in class that relate to the material being taught.	.184	.365	.249	-.078
I provide students with flexible assignment deadlines.	.024	.287	-.129	.164
I utilize appropriate methods to respond to disruptive students or disruptive student behaviors that occur during the class period.	.209	.225	.141	.205
I clearly outline specific policies regarding appropriate student behavior in my syllabus.	-.061	.135	.686	.071
I clearly outline course and institutional policies regarding my attendance and late assignments on my syllabus.	.192	-.124	.645	.043

Item	Factor			
	1	2	3	4
I clearly outline students' rights and available disability accommodations in my syllabus.	-.031	.108	.605	-.040
I clearly outline grading policies for each assignment.	.081	-.118	.504	.247
I review the course learning outcomes and student expectations with the students in class.	.101	.298	.298	.155
I use assessment tools such a scoring sheet or a rubric when grading assignments.	-.023	-.019	.136	.617
I design my own scoring sheets or rubrics that outline what is required for each assignment.	.173	-.029	.158	.550
I conduct pre-tests to determine what students already know about what they will be learning.	.059	.253	-.005	.325
I write lessons or create lesson plans for each class session.	.229	.075	.113	.240
Eigenvalues	10.206	2.221	1.793	1.430

Factor loadings indicate the extent each item represents the underlying factor. There are many recommendations regarding factor loading cutoffs. It is recommended that items "(a) load onto their primary factor above.40, (b) load onto alternative factors below.30, and (c) demonstrate a difference of .20 between their primary and alternative factor loadings" (Howard, 2016, p. 57). The researcher decided in order to arrive at a final factor structure that limited cross loadings of items, only items with a loading of greater than .4 were retained (see Table 13). Items that may have loaded on more than one factor were removed. Items 3, 7, 8, 10, 15, 17, 18, 19, 26, 27, 29 and 33 were removed.

Lastly, the final step in exploratory factor analysis involves interpreting and labeling the factors identified from the analysis. The researcher believed the items would

be organized into four themes; Adult Learning Theory, Classroom Management Strategies, Classroom Facilitation Methods and Assessment of Learning Strategies and expected the items to load in a similar way. After conducting an exploratory factor analysis, reviewing the scree plot, evaluating Kaiser Guttman's eigenvalues criteria, conducting a parallel analysis, and reviewing item loadings in the pattern matrix, the researcher determined the number of factors to extract to be four. Factor one contained 11 items and was named "Facilitate Learning Strategies". Factor two contained 6 items and was named "Adult Learning Engagement". Factor three contained 4 items and was named "Communicating Classroom Policies". Factor four contained 2 items and was named "Assessment Tools". The items contained in each factor are in the table below (Table 14).

Table 14

Items By Scale For The Formal Higher Education Teacher Practices Inventory Study

Item	Factor			
	1	2	3	4
I deliver lectures that keep students engaged and interested.	.700			
I use up-to-date or current materials, scenarios and stories in my lectures.	.650			
I encourage students to think critically about what they are learning.	.604			
I encourage students to reflect on the application of what they are learning rather than memorize what they are learning.	.603			
I motivate students to meet their learning goals.	.583			
I regularly provide students an opportunity to ask questions so I can clarify the lesson, activity or content.	.579			
I communicate expectations in a clear and understandable way.	.514			
I change my lessons to give students additional explanation if necessary.	.510			
I use visuals (graphics, pictures, videos, etc.) when presenting students concepts or ideas.	.501			
I provide detailed feedback (oral or written) to students on how well they are learning.	.496			
I assess learning by using questioning techniques such as clarification questions (e.g. How does this relate?) or questions that probe reasons and evidence (e.g. What would be an example?)	.471			
I use a fun activity on the first day of class so students can get to know each other.		.639		
I use hands-on learning assignments in my classroom.		.582		
I invite guest speakers into the classroom to provide students with relevant work or practice information.		.520		
I use a university-provided syllabus.		.474		
I encourage students to share their personal and professional experiences in class as it relates to what is being taught.		.437		
I relate course content to the work environment.		.407		
I clearly outline specific policies regarding appropriate student behavior in my syllabus.			.686	
I clearly outline course and institutional policies regarding my attendance and late assignments on my syllabus.			.645	
I clearly outline students' rights and available disability accommodations in my syllabus.			.605	

127

| | Factor | | | |
Item	1	2	3	4
I clearly outline grading policies for each assignment.			.504	
I review the course learning outcomes and student expectations with the students in class.				
I use assessment tools such a scoring sheet or a rubric when grading assignments.				.617
I design my own scoring sheets or rubrics that outline what is required for each assignment.				.550

Internal Consistency. In order to confirm the internal consistency reliability of each of the new factor scales, Cronbach's coefficient alpha was measured (Table 15). The coefficient alpha was calculated on the 4 sub-scales; Facilitate Learning Strategies, Adult Learning Engagement, Communicating Classroom Policies and Assessment Tools. The Facilitate Learning Strategies sub-scale consisting of 11 items resulted in a reliability measure coefficient alpha of .870. This indicates the internal consistency of the sub-scale is strong. The Adult Learning Engagement sub-scale consisting of 6 items resulted in a reliability measure coefficient alpha of .717. This indicates the internal consistency of the sub-scale is satisfactory. The Communicating Classroom Policies sub-scale consisting of 4 items resulted in a reliability measure coefficient alpha of .747. This indicates the internal consistency of the sub-scale is satisfactory. The Assessment Tools sub-scale consisting of 2 items resulted in a reliability measure coefficient alpha of .762 (See Table 15). This indicates the internal consistency of the sub-scale is satisfactory. The resulting instrument entitled the "Higher Education Teaching Practice Inventory" contains 23 items.

Table 15

Cronbach's Coefficient Alphas By Sub-scale For The Formal Higher Education Teacher Practices Inventory Study

Sub-scale	Number of Items	Cronbach Coefficient Alpha
Facilitate Learning Strategies	11	.870
Adult Learning Engagement	6	.717
Communicating Classroom Polices	4	.747
Assessment Tools	2	.762

Multivariate Analysis of Variance (MANOVA) Analysis

A multivariate analysis of variance (MANOVA) was conducted to determine to what extent does faculty type differ in these sub-scales. A multivariate analysis of variance (MANOVA) is an inferential statistical test that determine if multiple groups of data have statistically significant differences in the mean scores of each group using the covariance between the outcome variables. Simply put, a MANOVA is more complex than an ANOVA and generally is employed when there is more than one dependent variable that are on continuous scales of measurement. ANOVA, or Analysis of Variance, tests for the mean differences between two or more groups. MANOVA tests for the difference into or more vectors of means.

A MANOVA will be used to determine if contingent faculty differ from permanent faculty as to their perceptions of effective teaching practices within each sub-scale (Hahs-Vaughn, 2017). The MANOVA analysis is examining one independent variable, faculty type, against the four dependent variables; the sub-scales or factors. Faculty type included contingent faculty (faculty hired on a non-permanent basis) and

permanent faculty. The null hypothesis was that contingent faculty and permanent faculty would have similar responses on each of the sub-scales in the instrument.

A one-way multivariate analysis of variance (MANOVA) was conducted to test the hypothesis that there would be one or more mean differences between faculty type (contingent and permanent faculty) and sub-scale scores. A statistically significant MANOVA effect was obtained, Pillai's Trace = .083, F (4, 258) = 5.866, $p < .001$. The multivariate effect size was estimated at .083, which implies that 8.3% of the variance in the canonically derived dependent variable was accounted for by faculty type.

The homogeneity of variance assumption was tested for all four sub-scales. Based Levene's F tests, the homogeneity of variance assumption was met although only two of the four Levene's F tests were statistically significant ($p > .05$) (see Table 16). While the Levene's F test suggested that the variances associated with the communicating classroom policies and assessment sub-scales were not homogenous, the standard deviations (see Table 17) showed none of the largest standard deviations were more than four times the size of the corresponding smallest standard deviation (Howell, 2009).

Table 16

Levene's F Tests For The Formal Higher Education Teacher Practices Inventory Study

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	Facilitate Learning Strategies	1.012[a]	1	1.012	5.798	0.017	0.022
	Adult Learning Engagement	2.574[b]	1	2.574	6.063	0.014	0.023
	Communicating Classroom Policies	.729[c]	1	0.729	2.398	0.123	0.009
	Assessment Tools	1.905[d]	1	1.905	2.659	0.104	0.010
Intercept	Facilitate Learning Strategies	3220.592	1	3220.592	18454.846	0.000	0.986
	Adult Learning Engagement	2271.522	1	2271.522	5350.272	0.000	0.953
	Communicating Classroom Policies	3199.071	1	3199.071	10521.999	0.000	0.976
	Assessment Tools	2696.293	1	2696.293	3763.123	0.000	0.935
Faculty Rank	Facilitate Learning Strategies	1.012	1	1.012	5.798	0.017	0.022
	Adult Learning Engagement	2.574	1	2.574	6.063	0.014	0.023
	Communicating Classroom Policies	0.729	1	0.729	2.398	0.123	0.009
	Assessment Tools	1.905	1	1.905	2.659	0.104	0.010
Error	Facilitate Learning Strategies	45.548	261	0.175			

131

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
	Adult Learning Engagement	110.811	261	0.425			
	Communicating Classroom Policies	79.354	261	0.304			
	Assessment Tools	187.008	261	0.717			
Total	Facilitate Learning Strategies	3278.648	263				
	Adult Learning Engagement	2411.789	263				
	Communicating Classroom Policies	3291.924	263				
	Assessment Tools	2891.000	263				
Corrected Total	Facilitate Learning Strategies	46.559	262				
	Adult Learning Engagement	113.385	262				
	Communicating Classroom Policies	80.083	262				
	Assessment Tools	188.913	262				

Table 17

Descriptive Statistics For The Higher Education Teacher Practices Inventory Formal Study Sub-scales

Sub-scale	Mean	Std. Deviation	N
Facilitate Learning Strategies	3.4828	0.44491	297
Adult Learning Engagement	2.9377	0.65834	297
Communicating Classroom Policies	3.4883	0.55456	293
Assessment Tools	3.1881	0.86761	295

A series of one-way ANOVA's on each of the four dependent variables were conducted as a follow-up test to the MANOVA. As can be seen in Table 18 below, two of the ANOVA's were statistically significant; Facilitate Learning Strategies and Adult Learning Engagement. There was a significant effect on faculty type on Facilitate Learning Strategies at the $p < .05$ level for the three conditions $F(1, 266) = 5.675$, $p = 0.018$ and there was a significant effect on faculty type on Adult Learning Engagement at the $p < .05$ level for the three conditions $F(1, 266) = 4.728$, $p = 0.031$.

Table 18

ANOVA's For The Formal Higher Education Teacher Practices Inventory Study Sub-scales

		Sum of Squares	df	Mean Square	F	Sig.
Facilitate Learning Strategies	Between Groups	0.983	1	0.983	5.675	0.018
	Within Groups	46.081	266	0.173		
	Total	47.064	267			
Adult Learning Engagement	Between Groups	2.026	1	2.026	4.728	0.031
	Within Groups	113.951	266	0.428		
	Total	115.976	267			
Communicating Classroom Policies	Between Groups	0.671	1	0.671	2.207	0.139
	Within Groups	79.655	262	0.304		
	Total	80.326	263			
Assessment Tools	Between Groups	2.070	1	2.070	2.840	0.093
	Within Groups	192.370	264	0.729		
	Total	194.440	265			

Post-hoc analyses to examine individual mean difference comparisons across faculty type were unable to be performed as there were only two faculty types; contingent and permanent. In order to determine the mean difference comparisons across faculty type, t tests were conducted. Each of the four sub-scale factors extracted were analyzed using the t-test. The results of Levene's Test for factor one, $F(266) = 3.97$, $p = .047$, indicates that the variances of the two groups are assumed to be approximately unequal. Therefore, the alternative t-test results are used. Factor number one, the Facilitate

134

Learning Strategies sub-scale, did have a statistically significant difference, $t(265.9) =$ -2.413, $p = .017$. Contingent Faculty ($M = 3.45$, $SD = .44$), on average, scored lower than permanent faculty ($M = 3.57$, $SD = .37$) on factor one. Contingent and permanent faculty utilize different facilitate learning strategies. Cohen's d was estimated at .29 which is a small effect based on Cohen's (1992) guidelines.

The results of Levene's Test for factor two, $F(266) = .068$, $p = .795$, indicates that the variances of the two groups are assumed to be approximately equal. Therefore, the standard t test results are used. Factor number two, the Adult Learning Engagement sub-scale, did have a statistically significant difference, $t(266) = 2.174$, $p = .031$. Contingent Faculty ($M = 3.04$, $SD = .64$), on average, scored higher than permanent faculty ($M = 2.86$, $SD = .66$) on factor two. Cohen's d was estimated at .27 which is a small effect based on Cohen's (1992) guidelines. Contingent faculty responses indicated that they had more Adult Learning Engagement than permanent faculty.

The results of Levene's Test for factor three, $F(262) = .613$, $p = .434$ indicates that the variances of the two groups are assumed to be approximately equal. Therefore the standard t test results are used. Factor number three, the Communicating Classroom Policies sub-scale, did not have a statistically significant difference, $t(262) = -1.486$, $p = .139$. Contingent faculty ($N = 142$, $M = 3.45$, $SD = .54$), on average, scored lower than permanent faculty ($N = 122$, $M = 3.54$, $SD = .57$) on factor number three. Cohen's d was estimated at .18 which is a small effect based on Cohen's (1992) guidelines. Contingent and permanent faculty were similar in their responses about their ability to communicate classroom policies.

The results of Levene's Test for factor four, $F(264) = .737$, $p = .391$ indicates that the variances of the two groups are assumed to be approximately equal. Therefore the standard t test results are used. Factor number four, Assessment Tools sub-scale, did not have a statistically significant difference between contingent and permanent faculty, $t(264) = -1.685$, $p = .093$. Contingent faculty ($N = 144$, $M = 3.12$, $SD = .89$), on average, scored less than permanent faculty ($N = 122$, $M = 3.30$ $SD = .81$) on factor four. Contingent and permanent faculty were similar in their responses about their use of assessment tools. Cohen's d was estimated at .21 which is a small effect based on Cohen's (1992) guidelines.

Because of the MANOVA results, combined with the t-test analyses, factor one "Facilitating Learning Strategies" and factor two "Adult Learning Engagement" had statistically significant differences between contingent and permanent faculty, the null hypothesis was rejected. The two remaining factors, factor three "Communicating Classroom Policies" and factor four "Assessment Tools", did not have a statistically significant difference, so the researcher failed to reject the null hypothesis as it relates to these sub-scales.

CHAPTER V

DISCUSSION OF THE FINDINGS

This chapter discusses the results and implication of the findings of the research study along with the limitations, recommendations for future research, and areas of application. The purpose of this research study was to identify characteristics of effective teaching practices in higher education based on the classroom teaching experiences of contingent and permanent faculty. Limited research exists on how contingent faculty learn how to teach in the higher education classroom. Most contingent faculty come from professional practice and receive little, if any, teacher training prior to teaching. The purpose of this study was to develop a valid and reliable instrument to measure higher education teaching practices in the area of understanding of adult learning theory, assessment of learning strategies, classroom facilitation strategies and classroom management strategies. This instrument could be used as a preventative measure by higher education administrator and faculty to assess the need for professional development, to aid with decisions regarding faculty utilization, and as a self-reflection tool regarding personal effective teaching practices.

The following research questions guided this study:

1. What factors in the areas of understanding of adult learning theory, assessment of learning strategies, classroom facilitation strategies and classroom management strategies are necessary to develop a measure of effective teaching practices in higher education?

2. To what extent does faculty-type differ in these sub-scales.

Compiling and processing data using exploratory factor analysis (Bartholomew, Knott, & Moustaki, 2011; Behar-Horenstein, Beck, & Yu Su, 2018; Polit & Beck, 2017; Powell, 2014) provided the researcher the opportunity to identify the factors in the areas of understanding of adult learning theory (Conti & Fellenz, 1991; Cox, 2015; Galbraith, 2004; Merriam et al., 2007; Merriam & Bierema, 2013; Wagner, 1987), assessment of learning strategies (Atkinson & Lim, 2013; S. Brown & Race, 2012; Cydis et al., 2017; Elder, 2014; Payton, 2015; Rawlusyk, 2018), classroom facilitation strategies (Anne & Ian, 2007; Aquino et al., 2016; Galbraith, 1992; Martin et al., 2018; Muneja, 2015; Speed et al., 2015; Stephen, 1986) and classroom management strategies (Bernstein, 2010; Clark, 2017; Hainline et al., 2010; Henderson, 2016; Kim & Lundberg, 2016; Nugroho, 2016; Van Der Sijde & Tomic, 1993; Wasley, 2008) are necessary to develop a measure of effective teaching practices in higher education based on the perceptions of higher education faculty. Survey results for 364 faculty members were included to arrive at the descriptive statistics. Once the sub-scales were identified and descriptive statistics were completed, the data was analyzed using an independent samples t-test to determine if significant differences existed between faculty groups (contingent faculty and permanent faculty) on the four sub-scales

138

identified (dependent variables). The results of this analysis provided the researcher

with viable comparison information (Chen, 2015; G. M. Johnson & Association for

Institutional Research, 2010; Woodard et al., 2019; Zimmerman et al., 2016).

Discussion of Major Findings

The development of the Higher Education Teacher Practices Inventory was an

iterative process using exploratory factor analysis (Bartholomew, Knott, & Moustaki,

2011; Behar-Horenstein, Beck, & Yu Su, 2018; Polit & Beck, 2017; Powell, 2014). To

answer research question one that asks "What factors in the areas of understanding of

adult learning theory, assessment of learning strategies, classroom facilitation strategies

and classroom management strategies are necessary to develop a measure of effective

teaching practices in higher education", four factors of effective teaching practice

emerged from the synthesis and analysis of the data from the formal survey, pilot survey

and item review process presented in chapter four. The first factor entitled Facilitating

Learning Strategies, aligns with ACUE's Effective Practice Framework (*ACUE's*

Effective Practice Framework©, 2017) area entitled *Using Active Learning Techniques*

and with the LINCS Adult Education Teacher Competencies Domain 3, entitled

Effectively communicates to motivate and engage learners. The items contained in the

Facilitating Learning Strategies factor are:

- I deliver lectures that keep students engaged and interested.

- I use up-to-date or current materials, scenarios and stories in my lectures.

- I encourage students to think critically about what they are learning.

- I encourage students to reflect on the application of what they are learning rather than memorize what they are learning.

- I motivate students to meet their learning goals.

- I regularly provide students an opportunity to ask questions so I can clarify the lesson, activity or content.

- I communicate expectations in a clear and understandable way.

- I change my lessons to give students additional explanation if necessary.

- I use visuals (graphics, pictures, videos, etc.) when presenting students concepts or ideas.

- I provide detailed feedback (oral or written) to students on how well they are learning.

- I assess learning by using questioning techniques such as clarification questions (e.g. How does this relate?) or questions that probe reasons and evidence (e.g. What would be an example?)

These items reflect effective teaching practices in facilitating learning strategies by using active learning techniques, delivering effective lectures and facilitating engaging class discussions, communicating in a clear and understandable way, motivating students to meet their goals, engaging in active listening, and questioning to facilitate and support learning (ACUE's Effective Practice Framework©, 2017; Anne & Ian, 2007; Aquino et al., 2016; Chickering & Gamson, 1987; Davis, 2013; Galbraith, 1992, Howard, 2016; LINCS Adult Education Teacher Competencies, 2015; Martin et al., 2018; Muneja, 2015; Nilson, 2003; Rieg & Wilson, 2009; Speed et al., 2015; Stephen, 1986). Examples of facilitating learning strategies include encouraging students to take more control of their learning process. Professor's facilitate discussions and provide resources that support

learners to achieve their learning goals. Facilitating learning strategies empower students to collaborate and control their own growth and development.

The second factor entitled Adult Learning Engagement, aligns with adult learning theory as described by Malcom Knowles (1970). The items contained in the Adult Learning Engagement factor are:

- I use a fun activity on the first day of class so students can get to know each other.

- I use hands-on learning assignments in my classroom.

- I invite guest speakers into the classroom to provide students with relevant work or practice information.

- I use a university-provided syllabus.

- I encourage students to share their personal and professional experiences in class as it relates to what is being taught.

- I relate course content to the work environment.

These items reflect adult learning theory which states that adults prefer problem-centered learning experiences that are relevant, immediately impactful and can be applied in practice. (Conti & Fellenz, 1991; Cox, 2015; Galbraith, 2004; Knowles, 1970; Merriam et al., 2007; Merriam & Bierema, 2013; Paoletta, 2016; Pavlova & Sanger, 2016; Wagner, 1987). Examples of adult learning engagement include intentionally providing relevancy to what you are teaching and connecting theory to work practice, providing opportunities for small group activities that allow students to explore the subject matter collaboratively and share their own personal experiences,

and providing assignments that reinforce the real-world application of the learning content.

The third factor entitled Communicating Classroom Policies, relates to the ACUE's Effective Practice Framework (ACUE's Effective Practice Framework©, 2017) areas of *Designing an Effective Course and Class*, and *Promoting Higher Order Thinking* as well as with adult learning and classroom management literature. The items contained in the Communicating Classroom Policies factor are:

- I clearly outline specific policies regarding appropriate student behavior in my syllabus.

- I clearly outline course and institutional policies regarding my attendance and late assignments on my syllabus.

- I clearly outline students' rights and available disability accommodations in my syllabus.

- I clearly outline grading policies for each assignment.

These items focus on providing clear directions and explanations, having transparent grading practices, creating and maintaining a classroom environment that supports learning and providing students with access to services that can help them achieve the course learning goals (ACUE's Effective Practice Framework©, 2017; Adult Education Teacher Competencies, 2014; Bernstein, 2010; Caffarella & Daffron, 2013; Chickering & Gamson, 1987; Clark, 2017; Fink, 2013; Hainline et al., 2010; Hanson, 2016; Henderson, 2016; Kim & Lundberg, 2016; Nugroho, 2016; Struthers, et al., 2018; Svinicki & McKeachie, 2014; Van Der Sijde & Tomic, 1993; Wasley, 2008). Examples of communicating classroom policies include clearly documenting classroom behavior

expectations in your syllabus, providing clear, detailed instructions regarding the accommodations available, and clearly defining assignments including due dates and attendance policies. Classroom policies should also be clearly communicated in writing and explained verbally with opportunity for students to ask clarifying questions if necessary. Clearly communicating classroom policies will help students understand what is expected of them and increase the likelihood of their success.

The fourth factor entitled Assessment Tools, relates to the ACUE's Effective Practice Framework (ACUE's Effective Practice Framework©, 2017) area entitled *Assessing to Inform Instruction and Promote Learning*. The items contained in the Assessment Tools factor are:

- I use assessment tools such a scoring sheet or a rubric when grading assignments.

- I design my own scoring sheets or rubrics that outline what is required for each assignment.

These items focus on developing grading tools that best align to the assigned task and using rubrics and checklists (ACUE's Effective Practice Framework©, 2017). (ACUE's Effective Practice Framework©, 2017; Adult Education Teacher Competencies, 2014; Atkinson & Lim, 2013; S. Brown & Race, 2012; Cydis et al., 2017; Elder, 2014; Panadero & Jonsson, 2013; Payton, 2015; Rawlusyk, 2018). Examples of assessment tools include scoring sheets and rubrics that explicitly outline assignment expectations and criteria for grading.

Combined, the four factors identified through this research study; Facilitating Learning Strategies, Adult Learning Engagement, Communicating Classroom Policies

and Assessment Tools provide a reliable and valid measure of higher education effective teaching practices. Interestingly, these four factors as closely aligned to the researcher's original groupings of items; adult learning theory, assessment of learning strategies, classroom facilitation strategies and classroom management strategies.

The second research question strives to answer the problem as it relates to the use of contingent faculty in higher education. It asks, "to what extent does faculty-type differ in these sub-scales?" Each factor was analyzed using faculty type. Faculty type was defined by those faculty who work on a contingent basis; part-time instructors, adjunct instructors, associate, assistant and visiting professors and those that work on a permanent basis; tenured professors and professors of practice. Upon examination of these groups, two factors indicated that faculty-type did contribute to differences in teaching practices between contingent and permanent faculty; the Facilitating Learning Strategies and Adult Learning Engagement factors. While these differences are small, they are supported by literature.

According to the analysis, contingent faculty on average scored lower in the area of facilitating learning strategies than their permanent faculty counterparts. This finding confirms a study by Banasik and Dean (2015) that found the teaching strategies of part-time contingent faculty varied from full-time contingent faculty and tenure track faculty (Banasik & Dean, 2016). Baldwin and Wawrzynski (2011) also found that contingent faculty are more likely to employ subject-centered teaching strategies over learner-centered teaching strategies (Baldwin & Wawrzynski, 2011, p. 494). Studies have found that contingent faculty structure their courses and prepare for class differently than their permanent faculty counterparts (Umbach, 2007). Contingent faculty also tend to

144

"interact with students less frequently, use active and collaborative techniques less often, spend less time preparing for class, and have lower academic expectations than their tenured and tenure-track peers" (Umbach, 2007, p. 110).

The analyses also found that permanent faculty on average scored lower in the area of adult learning engagement than their contingent faculty counterparts. This finding is also supported by literature. Sissel, Hansman and Caswell (2001) found that higher education faculty are not prepared to address the diverse needs of their adult students" and the learning needs of adult students have been neglected (Sissel et al., 2001; Thomas, 2005). Whereas, contingent faculty are often industry professionals with current practice experience and bring relevant industry knowledge to the classroom (Curtis, 2014; Kezar & Sam, 2011, Landrum, 2009).

Practical Contributions to Research

Many researchers have examined and studied the numerous qualities of teacher effectiveness in K-12 and adult education (Michael & Libarkin, 2016; Robinson & Hope, 2013). This research study brought together theory and research in the areas of teacher effectiveness in order to further examine effective teaching in higher education. A new faculty self-assessment instrument entitled the Higher Education Teacher Practice Inventory has been developed based on the factor analysis results from this research study. This HETPI instrument can be used to support future research and increase the education field's understanding of teacher effectiveness in higher education in the areas of facilitating learning, adult learning strategies, communicating classroom policies and assessment tools which will help with creating a more engaging classroom environment. The Higher Education Teacher Practices Inventory instrument also can be used by higher

education administrators and faculty to assess the need for professional development and as a self-reflection tool regarding personal effective teaching practices. This tool can be used prior to faculty teaching assignments to allow academic chairs and deans to identify areas of strength and areas of professional development in their faculty. This tool can also be used by faculty development centers to create evidence-based courses to assist faculty with their effective teaching practices (Robinson & Hope, 2013; Santisteban & Egues, 2014; Smollin & Arluke, 2014).

The research results also indicated a need for additional training in facilitation skills for contingent faculty prior to teaching in higher education (Banasik & Dean, 2016; Baldwin & Wawrzynski, 2011). This could be accomplished by expanding graduate programs to include a course on teaching skills (Dolan et al., 2013). Expanding graduate programs to include courses on teaching skills will allow scholars and those hoping to pursue teaching in academia with the skills and knowledge required to teach effectively. Additionally, universities could require contingent faculty to participate in professional development courses on effective teaching prior to teaching in higher education. This would provide a foundation of effective teaching practices for new faculty which will enable them to be more productive on day one.

The research results also indicated a need for additional training in adult learning engagement for permanent faculty prior to teaching in higher education. This could be accomplished by expanding faculty development programs to include work-based practicums which provide permanent faculty practical experience. Enabling permanent faculty access to work-based practicums provide current and relevant work experience faculty which will not only aid in their teaching effectiveness but will enhance their

research efforts. Additionally, universities could encourage permanent faculty to participate in professional development courses in adult learning and development prior to teaching in higher education. Having permanent faculty to learn about adult learning and development theories and practices will allow them to be better equipped to teach adult learners (Robinson & Hope, 2013; Santisteban & Egues, 2014; Smollin & Arluke, 2014).

Limitations of the Research

This research study utilized a relatively reasonable sample size (n = 364), but still had several limitations. The scales identified as a result of this research study were derived from a survey of faculty practicing primarily in two states in the midwestern region of the United States which impacts the generalizability of the findings. The research would benefit from additional participants who are more diverse, and representative the entire faculty population. Also, the contingent faculty group was larger than the permanent faculty group. This also could have affected the findings in this study. Also, the contingent faculty group included both part-time faculty and full-time non-tenured faculty. The research would benefit by analyzing these groups separately.

Another limitation is the low number of items in two of the sub-scales; the Communicating Classroom Policies sub-scale and the Assessment tools sub-scale. The Communicating Classroom Policies sub-scale has only four items and the Assessment Tools sub-scale has only 2 items. Both sub-scales could be strengthened with additional items for future research.

Additionally, the diversity of the sample may have been a limitation in the study. The study was limited to three urban universities in the mid-west region. Expanding the

sample to include suburban, rural and private universities both inside and outside of the midwestern region of the United States could strengthen the instrument. Also, this study also did not consider digital instruction. This study could be enhanced by exploring effective teaching practices in higher education by including digital literacy items.

Implications for Future Research

Creating a new instrument to measure teacher effectiveness in higher education provides several opportunities for future research. The results of this research study are only an exploratory step in assessing the validity of the underlying constructs studied. Future research opportunities related to teacher effectiveness in higher education include further testing, refinement and confirmation of the Higher Education Teacher Practice Inventory that resulted from this exploratory research, as well as future research using this Higher Education Teacher Practice Inventory to impact professional practice. Also, revising the Higher Education Teacher Practice Inventory to include online teaching practice items is also a future research opportunity. It would also be interesting to conduct a comparison/contrast study between student satisfaction outcomes (Hill, 2014; Messemer & Hansman 2012) and the Higher Education Teacher Practice Inventory.

Further research into teacher effectiveness in higher education is important as the demand for quality instruction in higher education is growing. As evidenced by the Teaching Excellence and Student Outcomes Framework implemented in the United Kingdom in 2017, assessing the quality of undergraduate teaching in universities and other higher education providers is quickly becoming the norm, not the exception (Rudd, 2017). Also, as universities continue to utilize contingent faculty over permanent faculty, continued research into faculty rank and its impact on teaching and learning will be

needed. This research can be used to further information faculty development and faculty orientation efforts (Lindbeck & Darnell, 2008).

Further testing and refinement of the instrument

To further test and refine the instrument, the survey can be tested with faculty teachers in other universities in other states or countries, to look for transferability of the results across and beyond the United States. This is important as the desire for quality in teaching and learning in higher education is universal (Alhija, 2015). Countries like the United Kingdom and Israel are conducting research into effective teaching in higher education towards a possible uniform policy model for advancement of teaching quality in higher education institutions in their countries. Second, the survey can be tested further with other contingent and permanent faculty along with faculty teaching in 2-year associate-level schools to facilitate a more intentionally representative sample (Baldwin & Wawrzynski, 2011; Gray Scott & Jennifer Danley-Scott, 2015; Jaeger & Eagan, 2011; Korgan, 2016; Powers, 2016). This would help to support generalizability to the overall population of faculty in the United States. This expanded sample could also provide additional information on group differences to see if the instrument continues to have significant differences in responses between groups or if those differences disappear as more subjects are added to the study (Sissel et al., 2001; Thomas, 2005).

Implications for Practice

With the continual growth in the use of contingent faculty in higher education and higher education's historical practice of hiring permanent faculty based on their research acumen, the results of the research study indicate a need to refocus faculty orientation efforts (Robinson & Hope, 2013; Lindbeck & Darnell 2008). The results of the survey

indicated that contingent faculty on average scored lower in the facilitating learning strategies sub-scale compared to their permanent faculty counterparts. Simplified, this result highlights the need for contingent faculty to receive training in effective facilitation practices prior to teaching in the higher education classroom (Baldwin & Wawrzynski, 2011; Gray Scott & Jennifer Danley-Scott, 2015; Jaeger & Eagan, 2011; Korgan, 2016; Powers, 2016). Conversely, the results of the survey indicate that permanent faculty on average scored lower in the adult learning strategies sub-scale compared to their permanent faculty counterparts. Simplified, this result highlights the need for permanent faculty to understand adult learning and development practices along with spending time in their field of practice in order to bring the relevant and evolving practice information required for the adult learners in the higher education classroom (Sissel et al., 2001; Thomas, 2005). The Higher Education Teacher Practices Inventory provides a mechanism for all faculty to identify areas of strength and weakness in these areas in order to better serve their students.

Conclusions

When I began this research study I hoped to contribute to the theory and practice of adult learning in higher education by identifying the effective teaching behaviors of higher education faculty that are fundamental to student success. I felt that while aspects of teaching effectiveness have been examined, educational research primarily focused on teaching effectiveness and teacher preparation in the k-12 educational system. This has created a gap in literature and in professional learning opportunities to address the need for faculty to be better understand effective teaching practices in higher education.

The process of designing, constructing and conducting research to validate the Higher Education Teacher Practices Inventory self-assessment instrument has contributed to my own knowledge as a faculty member and a researcher. I appreciated the willingness of faculty to complete this survey and engage in reflection of their own teaching practice. The findings of this study are significant for researchers and practitioners as they identified a gap in effective teaching practices in both faculty groups, contingent and permanent faculty. The results of this exploratory research study confirmed my thinking about the varying effective teaching practices in use by higher education faculty, specifically contingent faculty. The findings of this study also surprised me by exposing a need for improvement in the effective teaching practices of permanent faculty which identified additional questions for future research. Several implications for scholarship and practice emerged, supporting the use of the Higher Education Teacher Practices Inventory as a tool for self-assessment and to guide professional development opportunities.

Overall, this research study generated new knowledge, contributed to theory, and provided new ways of examining effective teaching practices in higher education. I believe that if the higher education system begins to better orient its entire faculty in the areas of effective teaching practices, and build these areas into faculty development and professional development programs, we can see a sustainable shift in academic student success and better prepare higher education students for the future. There is room for additional research to expand on the findings from this research study and to strengthen the Higher Education Teacher Practices Inventory instrument. I look forward to building upon this study's findings and putting the Higher Education Teacher Practices Inventory

instrument into practice in the future. I also encourage additional scholars to develop

empirical research on this topic. The opportunity and need to study higher education

faculty instructional practices is wide open.

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APPENDICES

APPENDIX A
Kolb's Learning Style Inventory

<u>Kolb Learning Style Inventory</u>

The Learning Style Inventory (LSI) is a simple self-description test, based on experiential learning theory, that is designed to measure your strengths and weaknesses as a learner. Experiential learning is conceived as a four-stage cycle:

1. immediate concrete experience is the basis for
2. observation and reflection;
3. these observations are assimilated into a "theory" from which new implications for action can be deduced;
4. these implications or hypotheses then serve as guides in acting to create new experiences.

The effective learner relies on four different learning modes: Concrete Experience (CE), Reflective Observation (RO), Abstract Conceptualization (AC), and Active Experimentation (AE). That is, he must be able to involve himself fully, openly, and without bias in new experiences (CE), he must be able to reflect on and observe these experiences from many perspectives (RO), he must be able to create concepts that integrate his observations into logically sound theories (AC), and he must be able to use these theories to make decisions and solve problems (AE).

A high score on Concrete Experience represents a receptive, experience-based approach to learning that relies heavily on feeling-based judgments. High CE individuals tend to be empathetic and "people-oriented." They generally find theoretical approaches to be unhelpful and prefer to treat each situation as a unique case. They learn best from specific examples in which they can become involved. Individuals who emphasize Concrete Experience tend to be oriented more towards peers and less toward authority in their approach to learning and benefit most from feedback and discussion with fellow CE learners.

A high score on Abstract Conceptualization indicates an analytical, conceptual approach to learning that relies heavily on logical thinking and rational evaluation. High AC individuals tend to be oriented more towards things and symbols and less towards other people. They learn best in authority-directed, impersonal learning situations that emphasize theory and systematic analysis. They are frustrated by and benefit little form unstructured "discovery" learning approaches like exercises and simulations.

A high score on Active Experimentation indicates an active, "doing" orientation to learning that relies heavily on experimentation. High AE individuals learn best when they can engage in such things as projects, homework, or small group discussions. They dislike passive learning situation such as lectures. These individuals tend to be extroverts.

A high score on Reflective Observation indicates a tentative, impartial and reflective approach to learning. High RO individuals rely heavily on careful observation in making

judgments and prefer learning situations such as lectures that allow them to take the role of impartial objective observers. These individuals tend to be introverts.

The following summary of the four basic learning style types is based on both research and clinical observation of these patterns of LSI scores.

The **CONVERGER**'s dominant learning abilities are Abstract Conceptualization (AC) and Active Experimentation (AE). This person's greatest strength lies in the practical application of ideas. A person with this style seems to do best in those situations like conventional intelligence tests where there is a single correct answer or solution to a question or problem. This person's knowledge is organized in such a way that through hypothetical-deductive reasoning this person can focus it on specific problems. Research on this style of learning shows that Converger's are relatively unemotional, preferring to deal with things rather than people. They tend to have narrow technical interests and choose to specialize in the physical sciences. This learning style is characteristic of many engineers.

The **DIVERGER** has the opposite learning strengths of the converger. This person is best at Concrete Experience (CE) and Reflective Observation (RO). This person's greatest strength lies in imaginative ability. This person excels in the ability to view concrete situations from many perspectives. We have labled this style Diverger because a person with this style performs better in situations that call for generation of ideas such as a "brainstorming" idea session. Research shows that Divergers are interested in people and tend to be imaginative and emotional. They have broad cultural interests and tend to specialize in the arts. This style is characteristic of individuals from humanities and liberal arts backgrounds. Counselors, organization development specialists and personnel managers tend to be characterized by this learning style.

The **ASSIMILATOR**'s dominant learning abilities are Abstract Conceptualization (AC) and Reflective Observation (RO). This person's greatest strength lies in the ability to create theoretical models. This person excels in inductive reasoning and in assimilating disparate observations into an integrated explanation. This person, like the converger, is less interested in people and more concerned with abstract concepts but is less concerned with the practical use of theories. For this person it is more important that the theory be logically sound and precise; in a situation where a theory or plan does not fit the "facts," the Assimilator would be likely to disregard or re-examine the facts. As a result, this learning style is more characteristic of the basic sciences and mathematics rather than the applied sciences. In organizations this learning style is found most often in the research and planning departments.

The **ACCOMMODATOR** has the opposite learning strengths of the Asssimilator. This person is best at Concrete Experience (CE) and Active Experimentation (AE). This person's greatest strength lies in doing things in carrying out plans and experiments and involving oneself in new experiences. This person tends to be more of a risk-taker than people with the other three learning styles. We have labeled this person "Accomodator" because this person tends to excel in those situations where

one must adapt oneself to specific immediate circumstances.   In situations where a theory or plan does not fit the "facts," this person will most likely discard the plan or theory.   This person tends to solve problems in an intuitive trial and error manner, relying heavily on other people for information rather than on one's own analytic ability. The Accomodator is at ease with people but is sometimes seen as impatient and "pushy." This person's educational background is often in technical or practical fields such as business. In organizations people with this learning style are found in "action-oriented" jobs often in marketing or sales."

APPENDIX B
Focus Group
Item Understanding Instrument

Statements are placed in four areas:

Reviewer #: _____

        a. Adult Learning Theory
        b. Assessment of Learning Strategies
        c. Classroom Facilitation Methods
        d. Classroom Management Strategies

Please indicate using:

- Y= Yes
- N= No
- U= Unclear for each statement

1. Is the statement's meaning understandable?
2. Is the language used in each statement understandable?
3. Does the statement fit into an appropriate area indicated and not into any other area?

Statement	Area	Meaning?	Language?	Appropriate Area?	Comments
I encourage students to think critically about what they are learning.	Adult Learning Theory				
I use hands-on learning assignments in my classroom.	Adult Learning Theory				
I summarize classroom lessons at the end of each class session.	Adult Learning Theory				
I encourage students to think about what they are learning rather than memorize what they are learning.	Adult Learning Theory				

Statement	Area	Meaning?	Language?	Appropriate Area?	Comments
I use a fun activity on the first day of class so students can get to know each other.	Adult Learning Theory				
I encourage students to share their experiences in class.	Adult Learning Theory				
I provide projects in class that relate to the material being taught.	Adult Learning Theory				
I encourage group discussions within the classroom.	Adult Learning Theory				
I use videos in class to reinforce what I am teaching.	Adult Learning Theory				
I relate the course content to the work environment.	Adult Learning Theory				
I design classroom lessons that reflect the needs of adult students.	Adult Learning Theory				
I provide student with flexible assignments.	Adult Learning Theory				
I design classroom activities that align to the needs of adult students.	Adult Learning Theory				
I encourage students to work together in class.	Adult Learning Theory				
I clearly outline grading policies for each assignment	Assessment of learning Strategies				

Statement	Area	Meaning?	Language?	Appropriate Area?	Comments
I use different types of assessments to meet the needs of different types of learners	Assessment of learning Strategies				
I assess learning by using questioning techniques	Assessment of learning Strategies				
I use assessment tools such as scoring sheet when grading assignments	Assessment of learning Strategies				
I design my own assessment scoring sheets that outlines what is required for each assignment	Assessment of learning Strategies				
I conduct pre-tests before each new lesson to see what students already know.	Assessment of learning Strategies				
I use assessments that measure student progress toward learning goals	Assessment of learning Strategies				
I use assessments in the form of quizzes or tests using questions found in textbook materials	Assessment of learning Strategies				
I use assessments in the form of quizzes or tests using questions I wrote myself	Assessment of learning Strategies				

Statement	Area	Meaning?	Language?	Appropriate Area?	Comments
I use assessments in the form quizzes or tests using essay questions	Assessment of learning Strategies				
I use assessments in the form of projects	Assessment of learning Strategies				
I use assessment results to help reach students that are having difficulty	Assessment of learning Strategies				
I use assessment results to adapt my lesson plans	Assessment of learning Strategies				
I provide detailed feedback to students on how well they are learning	Assessment of learning Strategies				
I use assessments that measure the course learning outcomes	Assessment of learning Strategies				
I use assessment results to inform my teaching practice	Assessment of learning Strategies				
I use assessment results to adapt my lesson plans	Assessment of learning Strategies				
I write lessons for each class session	Classroom Facilitation Methods				
I align each lesson's content to student learning goals	Classroom Facilitation Methods				
I write lessons that teach to students' different learning styles	Classroom Facilitation Methods				

Statement	Area	Meaning?	Language?	Appropriate Area?	Comments
I use questioning techniques within my classroom	Classroom Facilitation Methods				
I align teaching activities to learning outcomes	Classroom Facilitation Methods				
I design lessons that help students to think critically to solve problems	Classroom Facilitation Methods				
I teach in a way that helps students to analyze information	Classroom Facilitation Methods				
I change my lessons to give additional explanation if necessary	Classroom Facilitation Methods				
I deliver effective lectures that keep students engaged	Classroom Facilitation Methods				
I invite guest speakers in to provide relevant work information	Classroom Facilitation Methods				
I use visuals when presenting learners with concepts and ideas	Classroom Facilitation Methods				
I design lessons that build on one another	Classroom Facilitation Methods				
I use up-to-date materials, scenarios and stories	Classroom Facilitation Methods				
I require students to use technology to conduct	Classroom Facilitation Methods				

Statement	Area	Meaning?	Language?	Appropriate Area?	Comments
research and give presentations					
I regularly provide check–in points in lesson plans that allows students to clarify the lesson, activity or content	Classroom Management Strategies				
I outline course learning outcomes on the syllabus	Classroom Management Strategies				
I use a course syllabus that outlines how students can meet the course requirements	Classroom Management Strategies				
I use a pre-established vendor or institution provided syllabus	Classroom Management Strategies				
I review the intended learning outcomes and student expectations in my syllabus	Classroom Management Strategies				
I review the intended learning outcomes and student expectations in class	Classroom Management Strategies				
I clearly outline course and institutional policies regarding attendance and late assignments on my syllabus	Classroom Management Strategies				

Statement	Area	Meaning?	Language?	Appropriate Area?	Comments
I clearly outline student rights and available disability accommodations in my syllabus	Classroom Management Strategies				
I outline specific policies regarding classroom civility and appropriate student behavior	Classroom Management Strategies				
I use appropriate methods to respond to disruptive students or disruptive student behaviors	Classroom Management Strategies				
I create incentives to motivate students to complete assignments	Classroom Management Strategies				
I motivate students to meet their learning goals	Classroom Management Strategies				
I communicate expectations in a clear and understandable way	Classroom Management Strategies				
I balance student participation to manage dominate talkers and encourage quiet students	Classroom Management Strategies				

Comments:_____

_____

_____

APPENDIX C
Informed Consent Form

Dear Participant:

My name is Toni Paoletta and I am a doctoral student at Cleveland State University located in Cleveland, Ohio. I am asking you to complete a survey being given to faculty in order collect data to complete my dissertation research. The survey will ask questions regarding the teaching practices of new and experienced faculty teaching instructor-led courses in a higher education environment. It is my hope that information from this survey will contribute to a better understanding of teaching practices in higher education.

Participation is completely voluntary, and you may withdraw at any time without penalty. There is no reward for participating or consequence for not participating. Any risks associated with this research do not exceed those of daily living. The survey should take about 15 minutes to complete.

I have received permission to conduct this survey from Dr. Jonathan Messemer, Dissertation Chair, Dr. Graham Stead, Dissertation Methodologist, Dr. Oya Tukel, Dissertation Committee Member, and Dr. Rachel Wlodarsky, Dissertation Committee Member. For further information regarding this research please contact Dr. Jonathan Messemer at (216) 523-7132, email: J.Messemer@csuohio.edu, or Dr. Graham Stead at (216) 875-9712, email: G.B.Stead@csuohio.edu.

If you have any questions about your rights as a research participant, you may contact the Cleveland State University Institutional Review Board at (216)687-3630.

There are two copies of this letter. After signing them, keep one copy for your records and return the other one. Thank you in advance for your cooperation and support. Please indicate your agreement to participate by electronically signing below.

"I am 18 years or older and have read and understood this consent form and agree to participate."

Signature: _____

Name: _____ (Please Print)

Date: _____

My dissertation title is, "The Untrained Adjunct: Examining Effective Teacher Practices in Higher Education" and I have received permission from Cleveland State University's Internal Review Board (IRB).

The instrument will take approximately 10 minutes to complete. Please be assured that survey data will be kept confidential.

Thank you in advance for your participation in this research study. If you have any questions about this dissertation study or would like to receive a copy of the study results, feel free to contact me at (216) 536-6489 or via email at T.Paoletta@csuohio.edu. Sincerely,

Toni Paoletta
Doctoral Candidate

APPENDIX D
Site Approval Letter

[Printed on official letterhead- if available]

Cleveland State University
2121 Euclid Avenue
Cleveland, OH 44115

Subject: Site Approval Letter

To whom it may concern:

This letter acknowledges that I have received and reviewed a request by Toni Paoletta to conduct a research project entitled "The Untrained Adjunct: Examining Effective Teacher Practices in Higher Education" at _____ and I approve of this research to be conducted at our facility.

When the researcher receives approval for his/her research project from Cleveland State University's Institutional Review Board/CSU Sponsored Programs and Research Services, I agree to provide access for the approved research project. If we have any concerns or need additional information, we will contact the Cleveland State University's IRB at (216) 687-3630or sprs@csuohio.edu.

Sincerely,

[name of senior administrator]
[position/title]
[phone/email]

APPENDIX E
Demographic Survey

Demographics Survey (Sample)

Gender
Female
Male
Other (Bi-Gender/Transgender)

Age (years): (Fill-in raw number)

Highest Academic Rank
Adjunct Instructor
Instructor (Visiting or Clinical)
Lecturer/Lecturer (Visiting)
Assistant/Associate Professor
(Non-Tenure or Visiting or Clinical)
Assistant/Associate Professor
(Tenure/Tenure-Track)
Professor (Tenure/Tenure-Track)
Professor
(Non-Tenure or Visiting or Clinical)
Professor of Practice
Other (Fill-in)

Academic Degree
Masters (MBA/ MS/MA/MED
Doctorate (Project-oriented)
Doctorate (Research-oriented)
PhD (Research-oriented Dissertation)
Other (Fill-in)

Area of Study
Business
STEM
Social Science
Education

Humanities

Other (Fill-in)

Teaching Background

Average number of institutions teaching at per
semester: (Fill-in raw number)

Years teaching in Higher Education:
(Fill-in raw number)

Years teaching outside of higher education:
(Fill-in raw number)

Number of instructor-led courses taught each
semester (on average):
(Fill-in raw number)

Number of online courses taught each
semester (on average):
(Fill-in raw number) (Fill-in raw number)

Average number of students in each instructor-
led course:
(Fill-in raw number)

Average number of students in each online
course:
(Fill-in raw number)

Teacher Training Background

Participated in a faculty orientation program: Y/N

If yes, was participation required:

If yes, how often per semester:
(Fill-in raw number)

Participated in a faculty development workshop: Y/N

If yes, was participation required:

If yes, how often per semester:
(Fill-in raw number)

Sought out teaching strategies and tips?

If yes, was it:
Online, with a mentor, with fellow instructor, at the library, other

Participated in a teaching or train-the-trainer program: Y/N

If yes, was participation required:

If yes, how often per semester:
(Fill-in raw number)

Participated in a teacher training program for online teaching: Y/N

If yes, was participation required:

If yes, how often per semester:
(Fill-in raw number)

Higher Education Teaching Practice Inventory

Demographic Questions:

Gender
- ○ Female
- ○ Male
- ○ Other (Bi-Gender/Transgender)

Age (years):_____
(Fill-in raw number)

Academic Degree
- ○ Masters (MBA/ MS/MA/MED
- ○ Doctorate (Project-oriented)
- ○ Doctorate (Research-oriented)
- ○ PhD (Research-oriented Dissertation)
- ○ Other (Fill-in)_____

Highest Academic Rank
- ○ Adjunct Instructor
- ○ Instructor (Visiting or Clinical)
- ○ Lecturer/Lecturer (Visiting)
- ○ Assistant/Associate Professor
- ○ (Non-Tenured or Visiting or Clinical)
- ○ Assistant/Associate Professor (Tenured
- ○ Professor (Tenured)
- ○ Professor (Non-Tenure or Visiting or Clinical)
- ○ Professor of Practice
- ○ Other (Fill-in)

Area of Study
- ○ Business
- ○ STEM
- ○ Social Science
- ○ Education
- ○ Humanities
- ○ Other (Fill-in)_____

Native English Speaker: ○ Yes   ○ No

Teaching Background

1. Average number of institutions teaching at per semester: _____
(Fill-in raw number)

2. Years teaching in higher education:
_____
(Fill-in raw number)

3. Years teaching outside of higher education:
_____
(Fill-in raw number)

4. Number of instructor-led courses taught each semester (on average): _____
(Fill-in raw number)

5. Average number of students in each instructor-led course: _____
(Fill-in raw number)

6. Number of online courses taught each semester (on average): _____
(Fill-in raw number)

7. Average number of students in each online course: _____
(Fill-in raw number)

Teacher Training Background

1. Participated in a faculty orientation
   program: Y/N

   If yes, was participation required:

   _____

   If yes, how often per semester:
   (Fill-in raw number) _____

2. Participated in a teaching training
   program: Y/N

   If yes, was participation required:

   _____

   If yes, how often per semester:
   (Fill-in raw number) _____

3. Participated in a faculty development
   workshop: Y/N

   If yes, was participation required:

   If yes, how often per semester:
   (Fill-in raw number) _____

4. Participated in a teacher training
   program for online teaching: Y/N

   If yes, was participation required:

   If yes, how often per semester:
   (Fill-in raw number) _____

5. Sought out teaching strategies and tips?

   _____

   If yes, was it:
   Online, with a mentor, with fellow
   instructor, at the library, other

Higher Education Teaching Practice Inventory

Use the following 1-6 rating scale to respond to each of the questions
1) Novice: I do not utilize this practice it in my classroom
2) Emerging: I have limited experience utilizing this practice in my classroom
3) Competent: I have demonstrated experience using this practice in my classroom
4) Expert: This is a part of my regular classroom practice and I am very comfortable demonstrating this practice.

Statement	Novice	Emerging	Competent	Expert
I encourage students to think critically about what they are learning.				
I use hands-on learning assignments in my classroom.				
I summarize classroom lessons at the end of each class session.				
I encourage students to reflect on the application what they are learning rather than memorize what they are learning.				
I use a fun activity on the first day of class so students can get to know each other.				
I encourage students to share their personal and professional experiences in class as it relates to what is being taught.				
I assign projects in class that relate to the material being taught.				
I use videos or movies in class to reinforce what I am teaching.				
I relate course content to the work environment.				
I provide students with flexible assignment deadlines.				

Statement	Novice	Emerging	Competent	Expert
I encourage students to work together in small groups during class.				
I clearly outline grading policies for each assignment.				
I assess learning by using questioning techniques such as clarification questions (e.g. How does this relate?) or questions that probe reasons and evidence (e.g. What would be an example?)				
I use assessment tools such a scoring sheet or a rubric when grading assignments.				
I design my own scoring sheets or rubrics that outline what is required for each assignment.				
I conduct pre-tests to determine what students already know about what they will be learning.				
I adapt my lesson plans as a result of student assessment outcomes.				
I write lessons or create lesson plans for each class session.				
I write lessons or create lesson plans that teach to a variety of learning styles (visual, auditory)				
I change my lessons to give students additional explanation if necessary.				
I deliver lectures that keep students engaged and interested.				
I invite guest speakers into the classroom to provide				

Statement	Novice	Emerging	Competent	Expert
students with relevant work or practice information.				
I use visuals (graphics, pictures, videos, etc.) when presenting students concepts or ideas.				
I use up-to-date or current materials, scenarios and stories in my lectures.				
I regularly provide students an opportunity to ask questions so I can clarify the lesson, activity or content.				
When I write my syllabus, I outline the course learning outcomes of the course.				
When I write my syllabus, I outline how students can meet the course requirements.				
I use a university-provided syllabus.				
I review the course learning outcomes and student expectations with the students in class.				
I clearly outline course and institutional policies regarding my attendance and late assignments on my syllabus.				
I clearly outline students' rights and available disability accommodations in my syllabus.				
I clearly outline specific policies regarding appropriate student behavior in my syllabus.				
I utilize appropriate methods to respond to disruptive students or disruptive student behaviors				

Statement	Novice	Emerging	Competent	Expert
that occur during the class period.				
I motivate students to meet their learning goals.				
I communicate expectations in a clear and understandable way.				