

FACULTY PERSPECTIVES ON THE DEVELOPMENT OF CREATIVE THINKING IN
ENTRY LEVEL OCCUPATIONAL THERAPY STUDENTS

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BY

LISA GRIGGS-STAPLETON, B.A., M.A., MOT

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DEDICATION

Even the most profound writer could not put into words the gratitude I feel for my family's love, patience, and resolute belief in me. Mark, James, Mom and Dad, this work is dedicated to you.

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ABSTRACT

LISA GRIGGS-STAPLETON

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Creativity has been part of occupational therapy (OT) since the field began (Hall, 1918; Slagle, 1939). Today, creative thinking is still valued in OT but we know little about how practitioners apply it (Fletcher, 2010). We know even less about how creative thinking is taught or viewed in OT education (Boiselle, 2015).

This mixed methods study explores how entry level OT faculty view and teach creative thinking. Participants (N=435) were recruited from entry level masters and clinical doctorate programs across the United States. The faculty provided information on how they seek to stimulate creative thinking in their students. Additionally, faculty members provided descriptions of assignments they felt required creativity. The survey also gathered demographic information including the number of years of experience participants had in clinical practice and teaching.

Quantitative analysis of the data revealed descriptors of an assignment requiring creativity had significant relationships with faculty clinical and academic experience as well as how they evaluated the final product of the assignment. However, the descriptors

and forms of evaluation holding a significant relationship were not always related. This disconnection between the description of the assignment and its evaluation leads to questions about the underlying process of creating an assignment requiring creativity and choosing a grading strategy.

Qualitative analysis of the ways faculty members promote creative thinking yielded 4 primary themes; *assignment instructions and types*, *assignment process*, *environment*, and *instructor influence via interactions*. These themes make up the foundation of the Creative Process of the Occupational Therapy Student. The information derived from this study may serve as a foundation for understanding how occupational therapy faculty seek to encourage creative thinking in their students.

TABLE OF CONTENTS

	Page
COPYRIGHT	iii
DEDICATION	iv
ACKNOWLEDGMENTS	v
ABSTRACT	vii
LIST OF TABLES	xi
LIST OF FIGURES	xii

Chapter	Page
I. STATEMENT OF THE PROBLEM AND SPECIFIC AIMS	1
Statement of Purpose	2
Specific Aims	2
II. BACKGROUND	3
What Is Creativity?	4
Models of Creativity	5
Definitions of Creativity.....	8
Can Individuals Learn Creative Thinking Skills?.....	9
Domain Specificity	11
Teaching Creativity in Higher Education.....	12
Creativity in Occupational Therapy.....	14
Conclusion.....	18
III. METHODS	19

Introduction	19
Participants	19
Instrument.....	20
Procedures	21
Trustworthiness.....	22
 IV. RESULTS	
Participant Demographics	23
Program Information.....	28
Creativity Questions.....	33
Assignment Descriptions.....	35
Qualitative Results	43
Assignment and Instruction Types	46
Assignment Process.....	48
Environment.....	50
Instructor’s Influence via Interactions.....	51
 V. DISCUSSION	 53
Findings.....	53
Faculty View of Creativity.....	53
Teaching Creativity	54
Creative Process of the Occupational Therapy Student	55
Relationship between Faculty Background and Views on Creativity	57
Educational Implications	58
Limitations and Future Directions	60
 REFERENCES.....	 62
 APPENDICES	
A. Survey.....	70
B. IRB Exemption Letter	77

LIST OF TABLES

Table	Page
4.1. Highest Degree Attained by Participants Based on Program Type.....	25
4.2. Comparison of Highest Faculty Degree Attained by CCHIE Rating.....	25
4.3 Years of Clinical Practice and Teaching Experience.....	26
4.4 Years of Clinical Practice by CCHIE Rating.....	27
4.5 Participant years of Experience in Teaching Based on CCHIE Rating Group....	28
4.6 Number of Programs Based on CCIHE Classification and Program Type	30
4.7 Application Requirements Based on Program Type	31
4.8 Application Requirements Based on CCIHE Classification.....	32
4.9 Faculty Responses to Questions on the Important of Creativity in OT Practice and in The Classroom.	34
4.10 Faculty Evaluation Criteria for Assignments.	36
4.11 Logistic Regression of Assignment Descriptors and Assignment Evaluation of “Solved Problem Effectively“	39
4.12 Logistic Regression of Assignment Descriptors and Assignment Evaluation of “Creative Thought Present“	40
4.13 Logistic Regression of Assignment Descriptors and Assignment Evaluation of “Product was Original“	41
4.14 Logistic Regression of Assignment Descriptors and Assignment Evaluation of Number of Years OT Clinical Experience	42
4.15 Logistic Regression of Assignment Descriptors and Assignment Evaluation of Number of Years Teaching Experience	43

LIST OF FIGURES

Figure	Page
4.1 Participants by Region	24
4.2 Program Type by Region	29
4.3 Type of Creative Assignment Chosen by Participants to Describe.....	36
4.4 Assignment Descriptors Chosen by Faculty	37
4.5 The Creative Process of the Occupational Therapy Student.....	46

CHAPTER I

STATEMENT OF THE PROBLEM AND SPECIFIC AIMS

Creative thinking is a highly-regarded asset studied in many disciplines including psychology, business, and the health sciences. In the health sciences, occupational therapy (OT) practitioners value creativity, although they may describe it as adaptation, innovation, clinical reasoning, or problem solving (Schmid, 2004). Although OT places value on creativity, there is minimal research available on the use of creative thinking by OT practitioners (Blanche, 2007; Fletcher, 2010; Schmid, 2004).

Even less evidence exists to guide the development of creative thinking skills during OT education. One early study found OT students can improve in skills related to creativity during their educational program (Fox & Fox, 1968). Studies have shown OT students value the creative process in assignments and feel it will enhance their skills as an OT (Collins, Harrison, Mason, & Lowden, 2011). Boisselle (2015) continued this area of research by investigating student and faculty perceptions of creative thinking in entry-level OT programs. While these studies offer a starting point, this dearth of evidence specific to OT education limits our ability to provide evidence based teaching of creative thought.

Statement of Purpose

The intent of this project was to extend Boisselle's (2015) study and the limited available literature to include a deeper examination of how faculty in entry-level OT programs view and teach creative thought.

Specific Aims

This study expands on previous research to develop an understanding of how entry level OT faculty view creative thinking. The study will examine the relationship between several factors including faculty background and their views on creativity. Additionally, we sought to begin to understand how faculty in entry level OT programs encourage the development of creative thinking in their courses and academic programs.

The specific research questions we sought to address included:

- a) How do educators in entry-level OT programs view creative thinking in OT?
- b) How do entry level OT faculty teach creative thinking?
- c) Is there a relationship between an instructor's professional background, such as amount of clinical or educational experience, and their views on creativity?
- d) Does an instructor's professional background, such as amount of clinical or educational experience, influence the way creative thinking is taught?

CHAPTER II

BACKGROUND

The modern study of creativity is often traced to J. P. Guilford's address to the American Psychological Association (APA) in 1950. In this address he discussed the difficulties of studying creativity as venturing into a complex subject where psychologists "fear to tread." (Guilford, 1950, p. 444). He recognized the complexity of a topic that includes questions such as: What is creativity? How does one become creative? Can creativity be taught? Does creativity mean the same in every discipline? At the time, Guilford suggested factorial studies as a means of investigating the pieces of the creativity puzzle. He believed creative thinking was made up of many different elements. Further, he did not believe creativity was a special gift possessed by only a few.

Fortunately, Guilford helped open a conversation in psychology at the moment society around him was demanding innovations at a startling rate (as cited in Vernon, 1970). Technological competition between the United States and the U.S.S.R. was heating up. Sputnik launched in 1957 and the space race began (Jolly, 2009). The United States wanted to win; but they needed creative and innovative scientists to do it. Congress aided the United States' entry into the space race through The National Defense Education Act (NDEA) of 1958 (P.L. 85-864). The NDEA appropriated funding to identify qualified students and provide training to turn them into scientists. Through this

funding, Congress also provided the means to develop testing to find individuals with aptitudes for science. Eventually that aptitude testing began to include creativity. But in order to test for a construct such as creativity, one must first define it.

What is Creativity?

Multifaceted theories and definitions for creativity exist; many begin in the field of psychology (Guilford, 1950). Guilford, in his 1950 APA presidential address described creativity through behavior. He declared someone to be participating in creative activities if they include “inventing, designing, contriving, composing, and planning” (Guilford, 1950, p. 444). Later he suggested a three-dimensional model, the structure of intellect, (as cited in Vernon, 1970). Guilford’s model distinguishes between memory, cognition, and evaluation. More importantly to scholars of creativity, it also differentiates between divergent thinking and convergent thinking. Convergent thinking moves one toward one right answer, such as multiple choice questions on a test. However, divergent thinking provides a number of possible correct answers. A question requiring divergent thinking on the same test might appear as an open-ended essay item. Fluency, flexibility, elaboration, and originality are all components of divergent thinking (Clapham, 2011). Fluency is the ability to yield multiple ideas in a restricted amount of time. Flexibility refers to how many different categories of an idea or word someone can produce. Embellishing is the elaboration of a concept while originality describes the novelty of it.

Scholars suggest there are other aspects of creativity beyond divergent and convergent thinking. In everyday life people solve problems that may or may not be

recognized by anyone but themselves. This is often referred to as creativity with a “little c” (Clapham, 2011). The problem finding and solving skills these everyday difficulties require are part of the creative process. While it is generally agreed that the “little c” typically involves problem solving, some scholars of creativity suggest the “big C” is different in scope. The “big C” includes creative works most often associated with renowned artists such as Tchaikovsky or Da Vinci, not the small problems solved in pedestrian life. Runco (2014a) argued the “big C/little c” discussion is a false dichotomy that places an emphasis on the popularity of a creative work which is not part of the creative process or product.

Models of Creativity

Boden (2013) suggests there are actually three types of creativity; combinational, exploratory and transformational. Combinational is the creativity most often seen. It involves the combination of two concepts into a novel product such as the combination of the technology of the cell phone and computer to create the Blackberry device. Exploratory creativity involves taking another step within existing rules. An example would be the use of the Blackberry leading to the development of the iPhone. Finally, transformational creativity is the rarest of the three. It is an idea or notion that makes concepts previously thought impossible, possible. Following our examples in technology, this would be the creation of the solid state transistor, completely eliminating the need for vacuum tubes. It was a leap in technology developed through the creation of a solution previously unseen.

Types of creativity are one form of framework for scholars. Other scholars study the stages of creativity. Wallas (as cited in Runco, 2004) suggested the creative activity is a progression of steps including preparation, incubation, illumination and verification. Creative thinking moves from preparation comprising problem identification to the processing of the information about the problem, or incubation. The moment of insight occurs during illumination and is followed by verification of the solution. Theorists have built on Wallas' work and now suggest additional process based models.

The Process Analytics Model of Creative Capacities is another multi-stage model beginning with problem construction (Mumford, Mobley, Uhlman, Reiter-Palmon, & Doares, 1991). The process continues into the information encoding phase and then organization of that information. The information may be reorganized several times during this process and again after the idea is evaluated. Once the creator believes the idea is ready, it is implemented and then monitored to determine if it successfully solved the problem. If not, the process begins again. This is a dynamic model and the steps are assumed to influence each other in a forward and backward fashion.

A model of creativity commonly seen in business literature is the Componential Model of Creativity. This model describes creativity seen through a social psychology perspective as a product of four components that work together to influence creativity (Amabile, 1996; Amabile & Pillemer, 2012). Three of the components are specific to the individual and include domain relevant skills, creativity-relevant processes and intrinsic motivation. In this theory, each of these components must exist for creativity to take

place. Additionally, the social environment influences the three intra-individual components. Components are seen in five stages starting with problem identification in the first stage and moving to preparation for solving the problem in the second stage. In the third stage, response generation, the creator determines what outcome possibilities exist. The potential solutions are evaluated in the fourth stage and finally, in the fifth stage the outcome is evaluated based on the success or failure at solving the problem. In later works affect was recognized in the model as having negative and positive influences on creativity (Amabile, Barsade, Mueller, & Staw, 2005).

Process based stage models are one of many types of models available to scholars of creativity. Other models are organized around parts of the creativity whole. The most common of these is the Four Ps; press, person, product, and process (Runco, 2004). Press describes the effect of the environment on an individual's creativity. The nurturing effect a feeling of social safety seems to have on creativity is part of the press. The influence of personality characteristics such as motivation or intelligence are part of the 'person' in this model. Features of the end product and the creativity process itself make up the final two areas. The Four Ps model offers a broad view of creativity shared by other models, including the 'COCO' model (Treffinger, Schoonover, & Selby, 2013). The first C in the COCO model is characteristics. These are personality traits, skills, or abilities. O stands for operations, including methods and tools used to perform creatively. Context, the second C, is defined as the internal or external attributes hampering or encouraging creativity. Internal contexts include habitual thinking patterns, motivation, and

confidence. External contexts are socially based, including organizational culture, leadership and team work. The authors offer one of the many definitions of creativity as well; “the ability to produce novel and appropriate outcomes to problems, challenges or opportunities” (Trefinger et al., 2013, p. 32).

Definitions of Creativity

Models offer broad descriptions of a complex topic. In order to truly understand a subject it is often best to simplify it to its most basic form. Further, to allow for the study of a phenomenon researchers must be assured they are studying the same thing to allow for comparisons and evaluation of studies. Different definitions emphasize the importance of various parts of creativity. Amabile focuses on the product, “A product or response will be judged as creative to the extent that (a) it is both a novel and appropriate, useful, correct or valuable response to the task at hand, and (b) the task is heuristic rather than algorithmic.” (Amabile, 1996, p. 35). Sternberg built his view of creativity out of his investigation of intelligence and defines creativity in a similar fashion to Amabile, adding that the product must be high in quality as well (Sternberg, 2011).

Other descriptions focus on the person or internal processes. Schmid proposed creativity was innate and “has a major impact on health and well-being.” (Schmid, 2004, p. 31). Csikszentmihalyi (2013) developed his definition of creativity in the context of “flow.” “Flow” is a feeling that occurs during the activity and is related to a “just right challenge” with no fear of failure. In this mental space, where even time becomes distorted, the creation of something novel takes place that can change a domain or create

a new one. Torrance was also process focused in his definition for creative thinking; “sensing difficulties, problems, gaps in information, missing elements, something askew; making guesses and formulating hypotheses about these deficiencies; evaluating and testing these guesses and hypotheses; possibly revising and retesting them; and last communicating the results.”(Torrance, 1993, p. 233).

Researchers analyzed definitions of creativity and found nine different descriptors including; artistic, psychometric, usefulness, stakeholder defined, accessible, divergent thinking, and problem solving (Plucker, Beghetto, & Dow, 2004). Unique was the most common descriptor among the definitions. This led the authors to propose their own definition: “Creativity is the interaction among aptitude, process, and environment by which an individual or group produces a perceptible product that is both novel and useful as defined within a social context.” (Plucker et al., 2004, p. 90).

There are many definitions and Klausen (2010) suggests the very fact that we are unable to agree on a definition is part of the nature of something that is still not completely understood. As we continue to seek an understanding of creativity, scholars are beginning to settle the debate in some areas, such as whether or not creative skills are innate as proposed in Schmid’s definition (2004).

Can Individuals Learn Creative Thinking Skills?

A combination of Guilford’s early ideas on creativity and the patriotic call to enter the space race led to a promotion of teaching creativity in schools (Jolly, 2009). The ideas first spread into science and engineering but soon spilled into other areas such as

business and marketing. Today creativity is recognized as essential to economic growth and individual well-being. Since Guilford's initial remarks on creativity in 1950 the question changed from: Can creative thought be learned? It is now: How do we teach it?

Many creativity training courses contain the fundamentals of problem solving and divergent thinking (Scott, Leritz, & Mumford, 2004). Beyond these common ideas, course syllabi offer insight into the specific items valued by instructors of creativity. Qualitative analysis of syllabi from college level creativity courses and instructor responses demonstrate the importance in these courses of; humor, nurturance of creativity, metacognitive thinking skills, visualization, and metaphorical thinking among others (Bull, Montgomery, & Baloché, 1995). Socially, instructors also provided a safe climate intended to facilitate creativity including the development of the mentor relationship. Instructors also rated highly the importance of dealing with social blocks to creative thinking and designing open classroom environments. The personality characteristics they sought to encourage include enthusiasm, openness, curiosity and self-confidence.

Instructors teaching creativity make many choices regarding what to include in their classes. Some choose to work from a specific model of creativity while others prefer to organize their own ideas. A recent meta-analysis based on four dependent variable categories (divergent thinking, problem solving, performance and attitudes) suggest those choosing to base their training in one model demonstrate higher training effects than those without a specific model (Scott et al., 2004). The amount of practice and training

students receive is also positively correlated to higher training outcomes. The type of techniques including classroom and field exercises and production or performance exercises correlate positively with program success. Additionally, a focus on cognitive skills training has a positive effect.

When looking at only a cognitive approach to creativity, teachers are encouraged to focus on several areas (Cropley, 2007). As expected, instructors should include both divergent and convergent skills as well as general knowledge and knowledge specific to a particular field. The ability to find problems and solve problems is useful when promoting creative thinking as well. An active imagination is another cognitive skill that is valuable. There are also some personal attributes that are valuable to creative thinking. Teachers should encourage persistence, curiosity, risk taking, and a tolerance for ambiguity to improve creative thinking skills. The literature offers support for the idea that creativity training is possible, but should it be different depending on the domain?

Domain Specificity

Skills can be learned in one domain and transferred to another, including creativity. There continues to be questions as to how much can be transferred and how much is domain specific (Kaufman & Baer, 2002). Research in creativity has led to some evidence that transfer may not take place easily between even similar domains. When given training in creative writing of poems, students were then asked to write both a poem and a short story (Owen et al., 2010) The students who received the training were judged to have written more creative poems than peers who did not receive training.

However, there was no difference in the level of creativity in the short stories. A study of musicians and non-musicians also supports the idea of domain specificity (Woodward & Sikes, 2014). When tested on measures of creativity where the prompt was a sound, the musicians were found to be more creative. On more general tests of creativity that did not have sound prompts, musicians did not score significantly higher than non-musicians.

The Amusement Park Theoretical Model of Creativity attempts to merge the domain specificity of creativity with the more general skills needed. The model compares domain specific creativity to a visit to an amusement park (Baer & Kaufman, 2005). The visitor to the park must have the basic requirements to get to the park such as a ticket. In creativity, this would be the initial requirements demanded of the work such as intelligence and motivation. The type of park one chooses to visit is equivalent to the general thematic area of the creative endeavor. Finally, one must pick the specific amusement park to visit and then the rides to enjoy. In creative work this is the equivalent of choosing the domain and the even more specific micro-domain. This model is created to show how the very general level of creativity becomes more and more specialized in creative work.

Teaching Creativity in Higher Education

Many methods exist for instructors in higher education who want to infuse their classes with creativity (Cropley, 2007; Treffinger et al., 2013). In fact, creativity is prominent in the Taxonomy of Educational Objectives, commonly known as Bloom's Taxonomy (Krathwohl, 2002). The revised version of the taxonomy changed the name of

the Synthesis category of objectives to Create and moved it to the top of the pyramid. Now the highest level objective, students who create must systemize information to create a new meaning.

Bloom's Taxonomy is commonly used to shape course objectives for classes in higher education, such as engineering. Engineering is a field that values creativity in practice and a study of classes in an engineering program sought to understand how creativity was being taught (Daly, Mosyjowski, & Seifert, 2014). Analysis of course materials revealed course goals and learning plans often contained elements of creativity including generating and exploring ideas. Yet, these creative concepts were often not present in the methods used to assess learning. However, problem solving was present in course goals and learning assessment materials.

A study of interviews given by doctoral students revealed tension between creative and critical thinking (Brodin, 2014). Students often felt critical thinking was more highly valued than creativity in their scholarly work. Initially themes emerged expressing the use of only critical thinking skills during the beginning of their scholarly careers. The students in Brodin's (2014) study described a need to justify their answers in facts. As they began to feel grounded in their critical thinking skills a transition began from seeking initial approval of their mentors to a more creative process. As the students started to write for publication they began to apply their domain specific creativity along with more critical thinking skills. As those students moved toward developing new knowledge in their field, the use of creative thinking began take precedence.

The doctoral students felt a need to seek approval of their scholarly work before they were willing to branch out into more creative ideas (Brodin, 2014). Interviews with nursing educators substantiate those feelings (Gerrish, Ashworth, & McManus, 2000). The educators valued creativity and expressed a desire to teach creative thinking. In practice, the requirement that students follow the specifics of assignment guidelines could outweigh the desire for creativity on the part of the instructor. Additionally, one instructor believed they told students to be imaginative but “because you have gone down a different road, you have to convince people that it was appropriate and sound.” (Gerrish et al., 2000, p. 837).

Creativity in Occupational Therapy

A survey of over 600 instructors covering most disciplines taught in higher education found health sciences scored the lowest in confidence in teaching creative thinking and in specifying creativity in their course objectives (Marquis & Henderson, 2015). There is a call for more integration of creativity into instructional practices in the health sciences (Bunkers, 2009; Conn, 2002; Doane, 2002; Hydo, Marcyjanik, Zorn, & Hooper, 2007). However, the standards for OT programs have no specific guidelines for the education of students in creativity (AOTA, 2016). In fact, the word “creative” is only in the standards one time as part of a definition of scholarship. As OT programs use these guidelines as their blueprint to create courses, it appears the choice to incorporate creativity into OT education is left to the discretion of individual programs or instructors.

Yet, OT has always held creativity to be a core value. The field developed out of the use of crafts as a form of occupation in the early 1900s (Hall, 1910; Slagle, 1939). The founders of OT valued the use of crafts and creative media as a form of therapeutic intervention. Today the use of creative media is still a valid form of therapy although it is seen less often than in the past (Tubbs & Drake, 2012). Recently, OT literature suggests there should be a “return to the creative roots of occupational therapy” (Collins et al., 2011, p. 304).

Since the beginning of the profession, OT authors have spoken of pieces of creativity without calling it by name. Fidler and Fidler (1978) discuss the need for patient activities to be something deemed valuable by society, similar to the valued end product described in definitions of creativity (Amabile, 1996; Plucker et al., 2004). The use of time in an enjoyable and productive manner is prominent in the writings of many OT scholars and has parallels to idea of flow (Csikszentmihalyi, 2007; Hall, 1910; Meyer, 1977). A person in a state of flow is immersed in a task that is enjoyable and a “just right” challenge.

The use of creative thinking is most notable in the theory of Occupational Adaptation (OA) (Schkade & McClung, 2001; Schkade & Schultz, 1992; Schultz & Schkade, 1992). OA is built on the foundations of OT but can be viewed as a creative process with similarities to creativity models. The OA model contains a press for mastery of the skill that may come from internal motivation or external environmental sources, similar to the person and press in the 4 Ps model of creativity (Runco, 2004). The

person's attributes continue to be an important piece of the OA model and influence the adaptive response to the task. This is analogous to the process element found in the 4 Ps model. Finally, the product in both models is judged by the person creating it and by society at large for its value. This is comparable to the final steps of completion of the task and evaluation of the outcome found in the Process Analytics Model of Creative Capacities and the Componential Model of Creativity (Amabile, 1996; Amabile & Pillemer, 2012; Mumford et al., 1991)

Everyday occupations offer the possibility of creativity according to participants in a recent qualitative study (Blanche, 2007). Individuals described the experience of creativity in both process and product focused daily occupations. The occupations with a creative element were also pleasurable and left participants energized. Creativity is present in occupations, but how do OTs address it in treatment? Eight occupational therapists (OTs) of varying ages provided their perspective on creativity in occupational therapy (Fletcher, 2010). Analysis of interviews with these OTs suggest that as an OT gains experience, he or she is less likely to view creative results as concrete such as equipment, devices or treatment plans. Instead the participants viewed it as less tangible, but more personal, outcomes such as motivation. Based on the eight interviews, the author also offers a definition of creativity specific to occupational therapy:

Creativity in occupational therapy results from the dynamic interaction of the occupational therapist and context, leading to outcomes that are relevant and satisfying. Creativity in

occupational therapy is both used and experienced by the occupational therapist: It facilitates client outcomes and informs and sustains the occupational therapist. (Fletcher, 2010, p. 255)

Interviews with three occupational therapists yielded five major themes for the meaning of creativity to their practice (Schmid, 2004). One participant suggested it may “go by a different name” (Schmid, 2004, p. 83) as creativity is not always identified as a part of intervention even though it may be present. Participants felt creativity in practice includes using expressive arts and both the therapist and the client take risks during the process. The last two themes encompass aspects of creativity common in the literature; using a conscious approach, including problem solving, and the need for a supportive environment.

While investigating creativity in OT education, researchers gave students the opportunity to participate in a 6-week creative project (Collins et al., 2011). The third year students applied knowledge from different facets of their education and created a project using creative media about an area of human activity or interest. Students felt the project allowed them to engage deeply with the material. Fox and Fox (1968) also investigated creativity in OT education. Students demonstrated improvement on fluency, flexibility, and originality when encouraged to use these skills.

Most recently, OT students and faculty expressed the importance of creativity in OT education (Boiselle, 2015). Faculty described three themes surrounding entry-level OT student’s creative thinking. Student factors included foundational skills and the

ability to tolerate ambiguity and take risks. They also felt the press of social and physical contexts influences the students' creative thinking abilities. Finally, they described the process of creativity as incorporating novelty and reflection in what could be a messy process. The students felt creativity was valued in their program and described it as being "imaginative, innovative, inventive, expressive, artistic, original, and resourceful" (Boiselle, 2015, p. 60). They were more likely to report feeling creative when completing class projects than while completing reading assignments or reports. They also reported valuing creative thinking and felt it important to understanding OT.

Conclusion

Creativity is clearly valued by occupational therapy practitioners, faculty and students and is present in daily occupations (Drolet & Desormeaux-Moreau, 2016; Blanche, 2007; Royeen, 2015). The profession asks OT programs to teach students to use creativity to develop solutions to clinical problems in unique and novel ways using evidenced based practices. Yet, there still exists a dearth of research on creativity in OT practice and education. Previous studies suggest some pieces of creative thinking may be domain specific (Baer & Kaufman, 2005). Entry level education seems to be the natural place to learn domain specific skills valued in the profession. This investigation will provide understanding of how OT faculty value creativity in the profession and in the classroom. Additionally, the study will provide a window into the methods OT faculty use to teach creative thinking in their entry level classes.

CHAPTER III

METHODS

Introduction

This was a descriptive study using data obtained through surveys completed by faculty members in entry level occupational therapy (OT) programs. The use of a survey allowed for the non-experimental gathering of data from a defined group (Kielhofner & Fossey, 2006). A mixed methods design, using both quantitative and qualitative methods, offered researchers the ability to analyze faculty perceptions of what is important in creative thinking in OT and how it is taught in entry level OT programs. Approval from the Internal Review Board for Texas Woman's University was obtained prior to initiation of data collection.

Participants

Faculty teaching at entry level masters or doctoral programs in OT were asked to participate in this convenience sample. Participants were recruited through emails sent to their university addresses and through a posting on social media for OT educators. The email and posting requested participation in the survey and offered participants the opportunity to win a \$50 amazon.com gift card.

Based on annual data collected by AOTA in 2013, there were approximately 1900 potential participants (AOTA, 2014a). Entry level master's and clinical doctorate OT program websites yielded 1,358 valid email addresses.

Instrument

The survey developed for this study is based on previous work by Boisselle (2015) and other literature on creative thought (Bull et al., 1995; Runco, 2004). Three occupational therapy faculty and one nursing faculty member reviewed the survey and their feedback was incorporated into the final product. The survey was divided into three sections and used skip logic to determine which sections each participant would complete. The first section consisted of one question to ensure the responder taught in an entry-level OT program. If the participant did not teach in an entry-level clinical doctorate or master's program, a message appeared thanking them for their time and terminating the survey.

The second section included questions requesting demographic information including degrees held and number of years of teaching. The second section ended with questions to determine if the participant believed creativity was valuable in OT practice and education. These questions used a seven point Likert scale to increase variance in answers and two questions incorporated reverse wording to protect against acquiescence bias. Two of the five questions were included in the skip logic. If a 1 "strongly disagree" or 2 "disagree" rating was given to "assignments in my classes include creative thinking"

or “students in occupational therapy should learn how to think creatively,” the survey ended with a message thanking the participant. Ratings of 3 or higher on these questions continued the survey.

In the final section participants answered questions about how they promote creative thinking among their students. Participants were asked to identify which items on a list of creativity terms would be expected in an assignment requiring creative thought. The list of terms contained common words and phrases from creativity literature and also included 15 terms OT students identified as associated with creative thinking (Boisselle, 2015; Bull et al., 1995; Runco, 2014b). To encourage completion of surveys, the list of questions was intentionally kept to a minimum to keep the amount of time required to complete the survey below 15 minutes.

Procedures

Institutional Review Board approval was obtained from Texas Woman’s University prior to initiation of data collection (IRB; see Appendix B). The final version of the survey was administered through Psychdata, a password protected web delivery system. The web link was delivered to faculty members via an email request and in a posting on the AOTA Member Forum for Education. Completion of the survey served as verification of informed consent. Faculty had a 12-week window for survey completion beginning with the first email request in September, 2016. Reminder emails were sent at three, six and ten weeks following the initial email. Response numbers for each question

varied as the only questions that required answers were those that used skip logic to determine if they were allowed to complete the entire survey. Investigators stored all data on password protected computers. Quantitative data was analyzed using Microsoft Excel 2013 and SAS 3.6.

Qualitative data analysis was performed on answers from two questions and was based in grounded theory data analysis. The primary investigator and a second team member with a background in creativity research independently coded the data into categories using open coding, a process of analyzing small sections of text for themes (Creswell, 1998). The themes that emerged were reanalyzed and sorted using axial coding to bring those categories together by making connections. In the final step, selective coding was used to determine the central categories and relate them to other categories through relationships and examples. The researchers employed constant comparison between the data and existing categories during data analysis.

Qualitative analysis for the answers to the two questions was initially done separately. However, analysis revealed categories for each set of data with very few differences. Due to this similarity, the answers were grouped together for selective coding and for analysis of the relationships between the categories.

Trustworthiness

To demonstrate dependability for this study, themes were included only if two or more participants mentioned it in their response (Lincoln & Guba, 1985). As an

additional trustworthiness check, two researchers independently analyzed data based on themes using Microsoft Excel 2013. The researchers then came together and agreed on each theme for the final results. Finally, the primary investigator maintained a log of data analysis decisions to establish an audit trail.

CHAPTER IV

RESULTS

Participant Demographics

The first question of the survey eliminated ten of the 453 participants as they were not teaching in an entry level master's or doctoral OT program. The 443 participants that taught at entry level master's or doctoral programs continued the survey. Of those participants, 435 completed the majority of the questions in the demographic section. Analysis of data through descriptive statistics yielded a gender makeup of 11% males (n=49) and 89% females (n=386). The majority of the participants (84%) taught in master's degree programs (n=367) while only 16% taught in doctoral programs (n=68). Licensed occupational therapists/therapy assistants made up 96% of the participants (n=419).

Participants represented diverse regions of the country as seen in figure 4.1. The highest number of instructors from master's programs were from the South (n=134) and the Midwest was the most heavily represented by doctoral program instructors. The majority of doctoral (n=56) and master's (n=310) level faculty were employed full-time by their program. There were 18 part-time and nine adjunct faculty members teaching in master's programs. There were only four part-time faculty and two adjuncts teaching in doctoral programs.

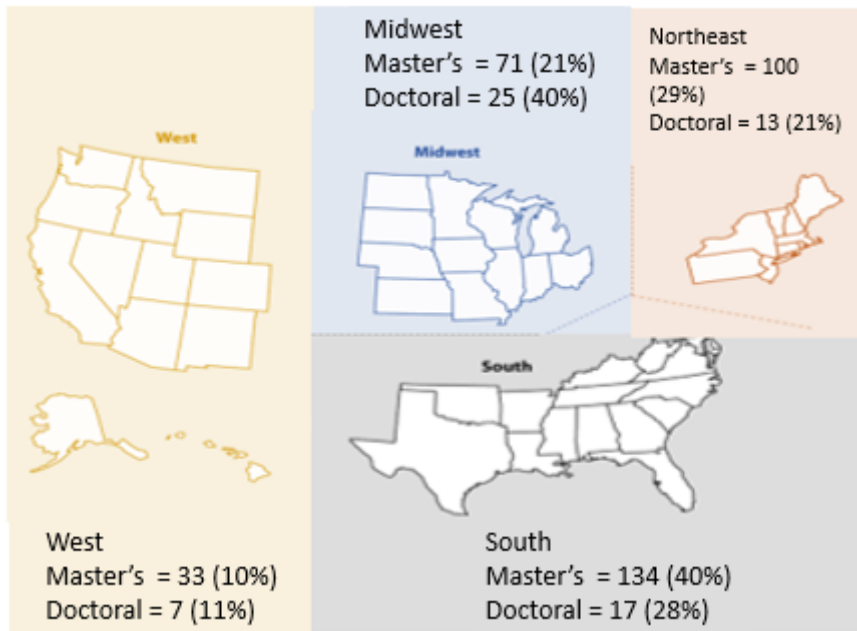


Figure 4.1 Participants by region.

Table 4.1 provides detail on the highest degree attained by faculty in each type of program. Faculty in each program held a similar percentage of PhDs with master's level faculty holding 37% and doctoral holding 36%. A greater percentage of those teaching in doctoral programs (53%) held clinical doctorates than those in master's programs (23%). Twenty-four percent of the participants from master's programs held a master's degree as the highest level completed. Fewer doctoral faculty listed a master's as their highest degree (3%).

Table 4.1

Highest Degree Attained by Participants Based on Program Type. N=358

	OTD <i>n</i> (% of total)	Master's <i>n</i> (% of total)
Master's in OT	2 (3%)	59 (16%)
Master's in Other Field	0 (0%)	30 (8%)
OTD	36 (53%)	85 (23%)
PhD	25 (37%)	134 (36%)
EdD	3 (4%)	24 (7%)
Other	2 (3%)	35 (10%)

Comparison of faculty degrees by Carnegie Classification of Institutes of Higher Learning (CCHIE) ratings was completed using groupings as seen in table 4.2 (Indiana University School of Education, 2017). Faculty members at doctoral level universities as defined by CCHIE (R1, R2, R3) were grouped together. The same groupings were made for faculty at master's level (M1, M2, M3) and special focus institutions. For all three groupings the highest percentage of faculty held PhDs, followed by OTDs in doctoral and master's categories for faculty teaching at special focus institutions.

Table 4.2

Comparison of Highest Faculty Degree Attained by CCHIE Rating. N=358

CCHIE Rating Group	R1, R2, R3 n=112 <i>n</i> (% of total)	M1, M2, M3 n=190 <i>n</i> (% of total)	Special Focus n=56 <i>n</i> (% of total)
Master's in OT	14 (13%)	24 (13%)	13 (23%)
Master's in Other Field	5 (4%)	14 (7%)	4 (7%)
OTD	34 (30%)	54 (28%)	8 (14%)
PhD	45 (40%)	65 (34%)	20 (36%)
EdD	7 (6%)	15 (8%)	3 (5%)
Other	7 (6%)	18 (9%)	8 (14%)

Level of experience in both teaching and clinical practice demonstrated similarities across program types. As seen in table 4.3, the majority of faculty in both programs reported 20 or more years of clinical experience. In both types of programs, the highest percentage of respondents reported five or less years teaching experience in OT and teaching in general.

Table 4.3

Years of Clinical Practice and Teaching Experience Based on Program Type

Program Type	Clinical Practice		Teaching in OT		Teaching in Any Program		
	Master's	OTD	Master's	OTD	Master's	OTD	
Years							
0-5	<i>n</i>	6	4	118	28	102	23
	% Total	2%	6%	32%	41%	28%	34%
6-10	<i>n</i>	42	11	77	10	77	9
	% Total	12%	17%	21%	15%	21%	13%
11-15	<i>n</i>	37	11	45	3	50	7
	% Total	11%	17%	12%	4%	14%	10%
16-20	<i>n</i>	75	6	53	9	49	10
	% Total	21%	9%	14%	13%	13%	15%
20+	<i>n</i>	192	34	73	18	88	19
	% Total	55%	52%	20%	26%	24%	28%

Based on CCHIE grouping the highest percentage of faculty reported they have 20 or more years of clinical experience (Table 4.4) in all groups. The smallest percentage of respondents in all groups reported five or less years of clinical practice.

Table 4.4

Years of Clinical Practice by CCHIE Rating

CCHIE Group		R1, R2, R3	M1, M2, M3	Special Focus
Years				
0-5	<i>n</i>	5	2	0
	% Total	5%	1%	0%
6-10	<i>n</i>	13	24	7
	% Total	13%	13%	13%
11-15	<i>n</i>	16	13	9
	% Total	15%	7%	16%
16-20	<i>n</i>	23	34	9
	% Total	22%	18%	16%
20+	<i>n</i>	47	112	30
	% Total	45%	61%	55%

There were also some similarities when comparing the number of years of teaching experience across groups (Table 4.5). Faculty at special focus institutions were most likely to report they had 20 or more years of teaching experience in general (29%) and in OT (27%). However, faculty in CCHIE rated doctoral or master's programs were most likely to report less than 5 years of experience teaching OT (33% and 35% respectively) and with teaching in general (27% and 29% respectively).

Table 4.5

Participant Years of Experience in Teaching Based on CCHIE Rating Group

		Teaching in OT			All Teaching		
		R1, R2, R3	M1, M2, M3	Special Focus	R1, R2, R3	M1, M2, M3	Special Focus
Years							
0-5	<i>n</i>	37	66	13	30	56	15
	% Total	33%	35%	23%	27%	29%	27%
6-10	<i>n</i>	29	36	8	28	36	6
	% Total	26%	19%	14%	25%	19%	11%
11-15	<i>n</i>	12	15	13	18	17	10
	% Total	11%	8%	23%	16%	9%	18%
16-20	<i>n</i>	14	28	7	10	28	9
	% Total	13%	15%	13%	9%	15%	16%
20+	<i>n</i>	20	45	15	26	53	16
	% Total	18%	24%	27%	23%	28%	29%

Program Information

The participants represented 125 unique programs from all four regions of the United States (Centers for Disease Control, 2017). No requirement for completion of many questions on the survey allowed 21 participants to identify their region but not their program. Figure 4.2 offers a summary of the location of the master's (n=123) and doctoral (n=24) programs represented. The Southern region had the highest number of master's programs (n=46) and the Midwest had the highest number of doctoral programs (n=9) represented.

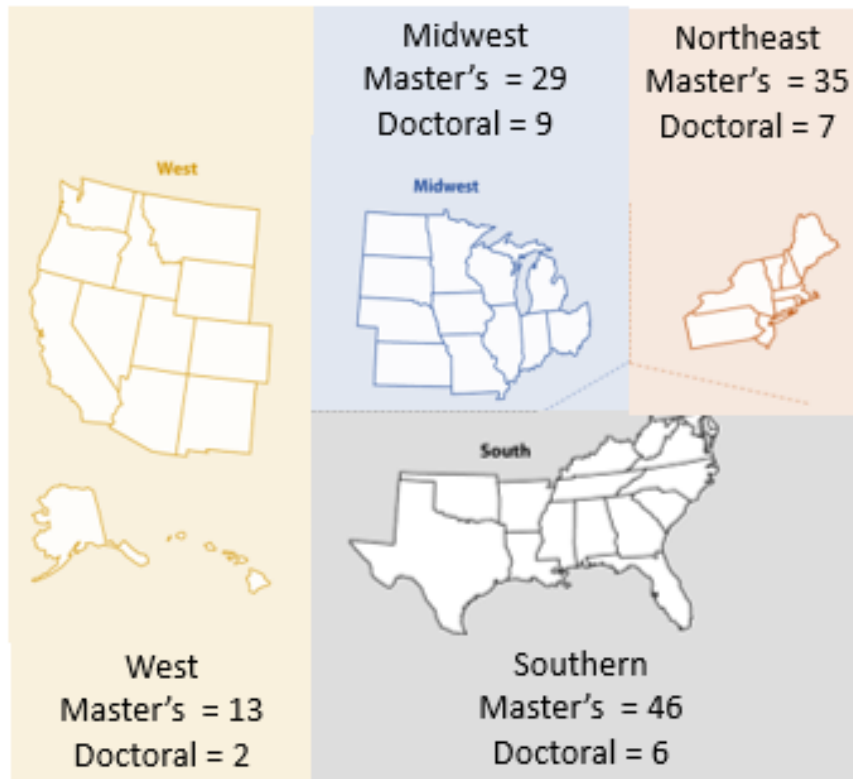


Figure 4.2 Program type by region.

Table 4.6 details the number of CCIHE programs for master's (n= 104) and doctoral (n=21) programs identified in this study. Six programs were not listed in the CCIHE and were not included in any analysis requiring the CCIHE. As the table depicts, while a program may be a doctoral level or master's level program, the school where the program exists may belong to the opposite CCIHE rating group.

Table 4.6

Number of Programs Based on CCIHE Classification and Program Type

	OTD n = 21	Master's n = 104
CCHIE Rating		
Master's Colleges & Universities: Larger Programs (M1)	7	39
Master's Colleges & Universities: Medium Programs (M2)	1	8
Master's Colleges & Universities: Small Programs (M3)	1	6
Doctoral Universities: Highest Research Activity (R1)	6	16
Doctoral Universities: Higher Research Activity (R2)	4	5
Doctoral Universities: Moderate Research Activity (R3)	0	8
Special Focus Four-Year: Medical Schools & Centers (SpMed)	0	11
Special Focus Four-Year: Other Health Professions Schools (SpOth)	1	6
Not listed in the CCIHE	1	5

Analysis of the program application requirements was based on program type and the CCIHE classification for the program. Responses were averaged within each individual program and each program is represented only once in the analysis. As seen in Table 4.7, the requirement of a GRE score demonstrated the largest difference between programs types with 76% of doctoral programs requiring it while only 51% of the master's programs. All other requirements were differentiated by no more than 10%.

The "other" category drew 87 responses including extemporaneous essays, group interviews and service hours. Standardized tests such as the Health Sciences Reasoning Test or the Scholastic Aptitude Test were listed by 20% of the respondents using the "other" category. An additional 10% listed prerequisites as another application requirement.

Table 4.7

Application Requirements Based on Program Type

	OTD n = 21 n (% of total)	Master's n = 104 n (% of total)
Application Requirement		
GPA	20 (95%)	101 (97%)
GRE	16 (76%)	53 (51%)
Interview	12 (57%)	53 (51%)
Essay	21 (100%)	94 (90%)
Observation Hours	16 (76%)	86 (83%)
Letters of Recommendation	20 (95%)	94 (90%)
Other	5 (24%)	30 (29%)

For analysis purposes the programs were grouped into three groups by CCIHE classification as seen in Table 4.8, doctoral level (R1, R2 or R3), master's Level (M1, M2 or M3) and Special Focus (SpMed or SpOth). The application requirements based on CCIHE classification in Table 4.8 show some variability in the Interview requirement with R1, R2 or R3 level programs less likely to require it (38%) compared to M1, M2 or M3 programs (53%) or Special Focus programs (72%).

Table 4.8

Application Requirements Based on CCIHE Classification

	R1, R2, or R3 n = 39 n (% of total)	M1, M2, or M3 n = 62 n (% of total)	SpMed or SpOth n = 18 n (% of total)
Application Requirement			
GPA	37 (95%)	61 (98%)	17 (94%)
GRE	25 (64%)	31 (50%)	10 (56%)
Interview	15 (38%)	33 (53%)	13 (72%)
Essay	35 (90%)	58 (94%)	16 (89%)
Observation Hours	30 (77%)	52 (84%)	15 (83%)
Letters of Recommendation	35 (90%)	57 (92%)	16 (89%)
Other	9 (23%)	22 (35%)	1 (6%)

Responses to questions regarding the program's requirements for elective or required research classes demonstrated little variability across CCHIE group. Program rating revealed 76% (n=16) of doctoral program required a research component while 77% (n=81) of master's and 78% (n=14) Special Focus institutions required it. Elective research was offered in 38% (n=8) of the doctoral programs while 32% (n=33) offered it in master's programs. Only five of the programs in Special Focus institutions (13%) offered elective research opportunities.

Additionally, there was little variability in research requirements between the types of programs. Doctoral programs required research 76% (n=16) of the time and offered it as an elective 38% (N=8) of the time. Master's programs required it 78% of the time (n=81) and had a research elective available 32% of the time (n=33).

Creativity Questions

Participants were asked to describe their feelings about creativity in the classroom and in clinical practice on a scale of one to seven with 1 meaning “strongly disagree” and 7 defined as “strongly agree.” As seen in Table 4.9, responses showed little variability on questions of creativity in practice or in the classroom. Faculty strongly disagreed with statements suggesting OTs do not use creativity in practice (65%) and that students would not need to learn how to use creativity in sessions (82%). The participants strongly agreed with the ideas that creativity is part of OT practice (78%) and that students should learn how to think creatively (76%). Faculty members were less likely to strongly agree that assignments in their classes included creativity (41%). However, 43% of faculty also chose the category one step below strongly agree.

Table 4.9

Faculty Responses to Questions on the Important of Creativity in OT Practice and in the Classroom

	1 Strongly Disagree	2	3	4 Neither Agree nor Disagree	5	6	7 Strongly Agree
	n (% of total)	n (% of total)	n (% of total)	n (% of total)	n (% of total)	n (% of total)	n (% of total)
Occupational therapists do NOT use creativity during occupational therapy sessions. N=399	259 (65%)	69 (17%)	18 (5%)	10 (3%)	20 (5%)	12 (3%)	11 (3%)
Creativity is part of occupational therapy practice. N=399	10 (3%)	0 (0%)	2 (1%)	1 (0%)	11 (3%)	65 (16%)	310 (78%)
Students in occupational therapy should learn how to think creatively. N=399	4 (1%)	3 (1%)	1 (0%)	0 (0%)	22 (6%)	64 (16%)	305 (76%)
Assignments in my classes include creative thinking. N=398	1 (0%)	3 (1%)	2 (1%)	7 (2%)	51 (13%)	170 (43%)	164 (41%)
Students do NOT need to learn how to use creativity in occupational therapy sessions. N=399	328 (82%)	54 (14%)	5 (1%)	5 (1%)	3 (1%)	1 (0%)	3 (1%)

Assignment Descriptions

Section III of the survey asked faculty to answer questions related to an assignment from one of their classes that requires creative thinking. The majority of faculty described the assignment as a “face to face” assignment (n=332, 90%) and 1% identified it as an “online” assignment (n=6). Only 9% of participants chose to describe an assignment that was a hybrid of the two types (n=32). Group assignments represented 58% (n=218) of the total, while individual assignments accounted for the other 42% (n=157).

Participants were also asked to choose the type of assignment. The majority of the assignments were categorized as presentations (n=60) as seen in Figure 4.3. The smallest category held only one person who chose to describe an exam. The other category included a wide range of assignment descriptions such as practicum, community project, portfolio, and a combination of assignment types.

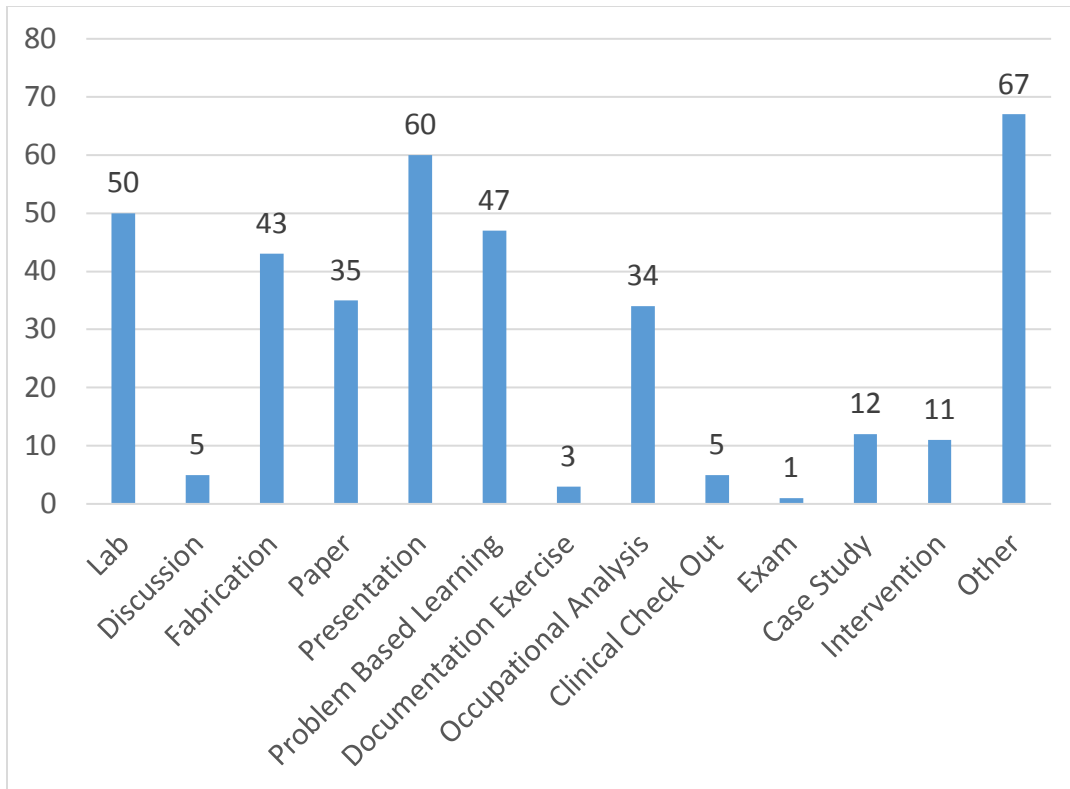


Figure 4.3 Type of creative assignment chosen by participants to describe

Faculty also described how they evaluated an assignment. As seen in Table 4.10, the most common form of evaluation was a determination of how well the final product met the assigned criteria (n=303). Originality was the least chosen form of evaluation (n=82).

Table 4.10

Faculty Evaluation Criteria for Assignment

Criteria	Number of Faculty	Percent of Faculty
Final Product Met Assigned Criteria	303	81%
Creative Thought Present	180	48%
Final Product was Original	82	22%
Final Product Solved a Problem Effectively	200	53%
Other	47	13%

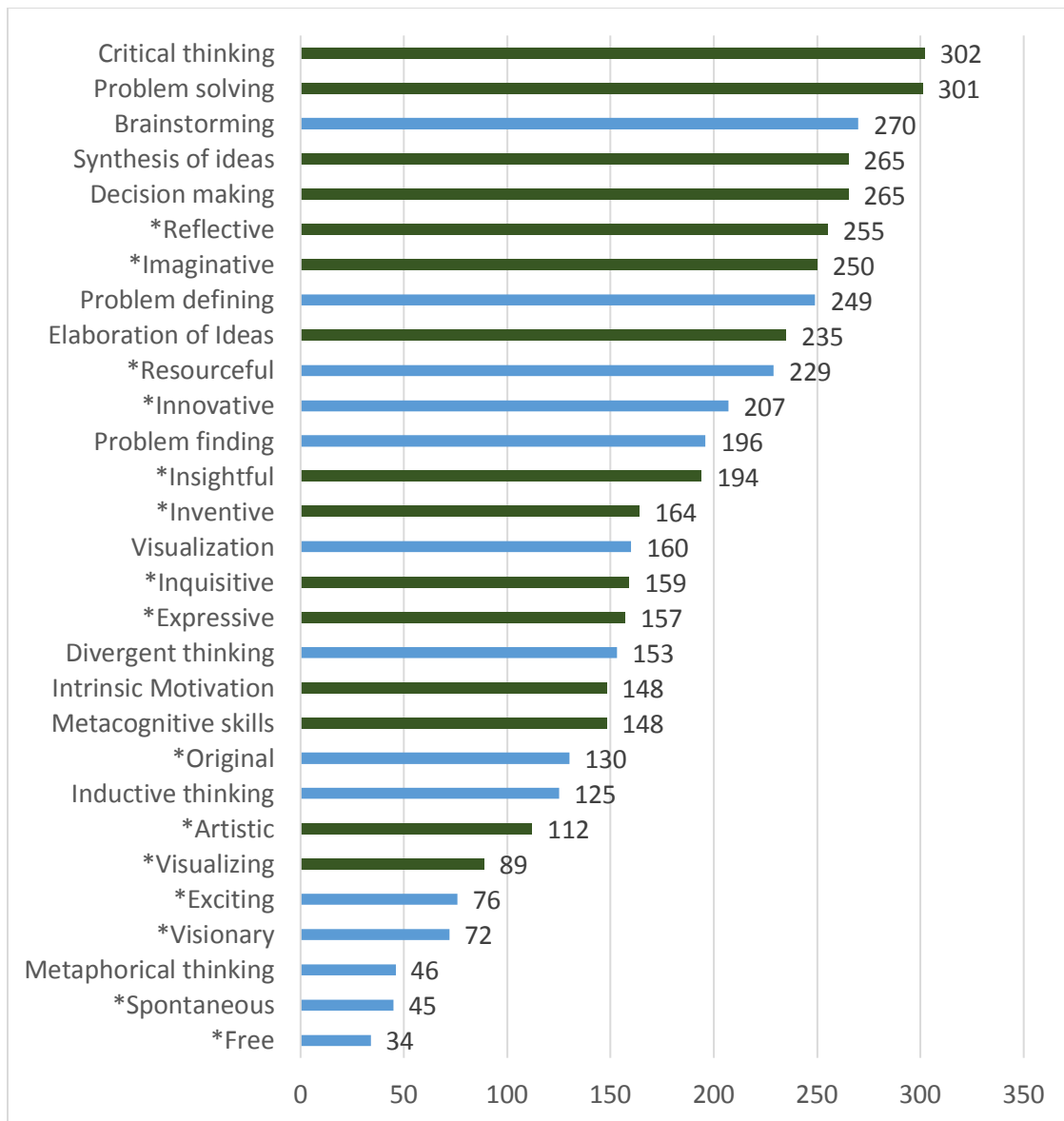


Figure 4.4 Assignment descriptors chosen by faculty (N=357). Starred items were chosen by students in previous literature to describe creativity (Boiselle, 2015).

Participants were asked to choose an assignment and describe it by choosing from a list of descriptors. These descriptors were a combination of a list developed from creativity literature and the list of descriptors students chose to describe creativity in

previous research (Boiselle, 2015). As seen in figure 4.4, faculty were most likely to cite “critical thinking” and “problem solving.” The highest ranked descriptor used by students in Boiselle’s (2015) work to describe creativity appears in the faculty list as the seventh most frequently chosen item, “reflective.”

The faculty’s method of assignment evaluation and the assignment descriptors were analyzed using a logistic regression to determine the nature of the relationship. Backwards selection was employed to determine the best model by removing the assignment descriptors that did not have relationship greater than $p < .30$ with the assignment evaluation method. The assignment evaluation “final product solved problem effectively” demonstrated a significant global relationship, $X^2(21, N=375) = 103.63$, $p < .0001$ and $R^2 = .27$. The non-significant variables removed were; metaphorical thinking, reflective, elaboration of ideas, brainstorming, exciting, imaginative, inventive, and metacognitive skills. There were 21 descriptors remaining in the final model with seven demonstrating a significant relationship (Table 4.11). The variables demonstrating an inverse significant relationship with the evaluation criteria were problem defining, divergent thinking, original, innovative, and inductive thinking. Only visualization and visionary held a positive significant relationship with the criteria of “solved problem effectively.”

Table 4.11

Logistic regression of Assignment Descriptors and Assignment Evaluation of “Solved Problem Effectively.”

Criteria	<i>B</i>	<i>SE B</i>	Wald X^2	<i>p</i>
Problem defining	-0.4517	0.1547	8.526	0.0035
Visualization	0.3477	0.145	5.75	0.0165
Visionary	0.4484	0.1895	5.6001	0.018
Divergent thinking	-0.3173	0.1399	5.141	0.0234
Original	-0.3345	0.1509	4.9157	0.0266
Innovative	-0.3063	0.1387	4.8785	0.0272
Inductive thinking	-0.2934	0.1447	4.1138	0.0425
Intrinsic Motivation	0.2701	0.1492	3.2755	0.0703
Spontaneous	0.4034	0.2232	3.266	0.0707
Expressive	0.265	0.1476	3.2232	0.0726
Visualizing	-0.2957	0.1719	2.9593	0.0854
Decision making	-0.2332	0.1486	2.4638	0.1165
Problem solving	-0.2669	0.1737	2.3621	0.1243
Free	-0.3729	0.2593	2.0689	0.1503
Inquisitive	-0.1994	0.1445	1.9043	0.1676
Artistic	0.2124	0.157	1.8305	0.1761
Synthesis of ideas	-0.1777	0.1491	1.4206	0.2333
Insightful	-0.1666	0.1463	1.2966	0.2548
Critical thinking	-0.2025	0.1793	1.2758	0.2587
Resourceful	-0.1483	0.136	1.1877	0.2758
Problem finding	-0.1494	0.1391	1.154	0.2827

Note: Bolded items demonstrated a significant relationship. *B* is the estimate. *SE B* is the standard error of the estimate.

“Creative thought present” as the assignment evaluation criteria also

demonstrated a significant global relationship, $X^2(13, N=375) = 48.67, p < .0001$ and $R^2 = .$

12. The 16 non-significant variables removed were; problem solving, metaphorical

thinking, brainstorming, artistic, synthesis of ideas, inquisitive, critical thinking, elaboration of ideas, metacognitive skills, innovative, inventive, visualizing, problem defining, spontaneous, expressive, problem finding. Of the 13 descriptors in the final model, four demonstrated an inverse significant relationship (Table 4.12). No descriptors demonstrated a positive significant relationship.

Table 4.12

Logistic regression of Assignment Descriptors and Assignment Evaluation of “Creative Thought Present.”

Criteria	<i>B</i>	<i>SE B</i>	Wald X^2	<i>p</i>
Reflective	-0.3378	0.1303	6.7236	0.0095
Original	-0.2863	0.1295	4.8847	0.0271
Divergent thinking	-0.2512	0.121	4.3077	0.0379
Visualization	-0.2345	0.1198	3.8317	0.0503
Exciting	-0.2777	0.1539	3.2582	0.0711
Imaginative	-0.2112	0.1276	2.7387	0.0979
Visionary	-0.25	0.1547	2.6107	0.1061
Insightful	-0.19	0.1282	2.197	0.1383
Decision making	0.1714	0.1298	1.7434	0.1867
Inductive thinking	0.1638	0.1303	1.5812	0.2086
Intrinsic Motivation	0.1547	0.1304	1.4057	0.2358
Resourceful	0.1472	0.1242	1.4049	0.2359
Free	0.2271	0.2073	1.2005	0.2732

Note: Bolded items demonstrated a significant relationship. *B* is the estimate. *SE B* is the standard error of the estimate.

Evaluation of the assignment based on originality demonstrated a significant global relationship with the assignment descriptors as well, $X^2(10, N=375) = 55.34$, $p < .0001$ and $R^2 = .14$. Six of the 10 descriptors remaining in the final model demonstrated

a significant predictive relationship with originality. The descriptors original, metaphorical thinking and critical thinking all held a negative significant relationship with the criteria. Intrinsic motivation and imaginative both have a positive significant relationship with the criteria of original. The descriptors removed from the model included; problem finding, problem solving, divergent thinking, elaboration of ideas, synthesis of ideas, artistic, expressive, visualizing, free, reflective, spontaneous, insightful, exciting, metacognitive skills, inductive thinking, inventive, resourceful, inquisitive, and innovative.

Table 4.13

Logistic regression of Assignment Descriptors and Assignment Evaluation of “Product was Original.”

Criteria	<i>B</i>	<i>SE B</i>	Wald X ²	<i>p</i>
Original	-0.8939	0.1607	30.9467	<.0001
Intrinsic Motivation	0.3881	0.1650	5.5306	0.0187
Imaginative	0.3586	0.1586	5.1083	0.0238
Metaphorical thinking	-0.4081	0.1975	4.2712	0.0388
Critical thinking	-0.4136	0.2099	3.8848	0.0487
Decision making	0.2353	0.1612	2.1310	0.1443
Visionary	-0.233	0.1662	1.9649	0.1610
Problem defining	-0.2279	0.1646	1.9162	0.1663
Visualization	-0.1947	0.1478	1.7351	0.1878
Brainstorming	0.2111	0.1650	1.6364	0.2008

Note: Bolded items demonstrated a significant relationship. *B* is the estimate. *SE B* is the standard error of the estimate.

Logistic regressions were also used to analyze the influence of an instructor's clinical and teaching experience on the descriptors chosen to describe the assignment. The final global model of the effect of the number of years of clinical experience in occupational therapy was significant $X^2(7, N=362) = 25.85, p=.0005$ and $R^2=.07$. After removing all variables with a p of less than .30, eight variables remained as seen in table 4.14. Teaching experience also demonstrated significance in the final global model, $X^2(15, N=375) = 39.01, p=.0006$ and $R^2=.11$. Both forms of experience demonstrated a negative significant relationship with metacognitive skills. Clinical experience also held a negative significant relationship with inquisitive while teaching experience had a positive significant relationship with brainstorming (Table 4.15).

Table 4.14

Logistic Regression of Assignment Descriptors and Assignment Evaluation of Number of Years OT Clinical Experience

Criteria	<i>B</i>	<i>SE B</i>	Wald X^2	<i>p</i>
Metacognitive skills	-0.2906	0.1121	6.7237	0.0095
Inquisitive	-0.2608	0.1145	5.1911	0.0227
Spontaneous	-0.3516	0.1892	3.4542	0.0631
Brainstorming	0.1731	0.1179	2.1537	0.1422
Elaboration of Ideas	0.1659	0.1145	2.0975	0.1475
Inductive thinking	-0.1469	0.1179	1.5536	0.2126
Exciting	0.1448	0.1342	1.1634	0.2808

Note: Bolded items demonstrated a significant relationship. *B* is the estimate. *SE B* is the standard error of the estimate.

Table 4.15

Logistic Regression of Assignment Descriptors and Assignment Evaluation of Number of Years Teaching Experience

Criteria	<i>B</i>	<i>SE B</i>	Wald X ²	<i>p</i>
Metacognitive skills	-0.3028	0.1064	8.0971	0.0044
Brainstorming	0.2764	0.1131	5.9737	0.0145
Visionary	0.2469	0.131	3.5541	0.0594
Innovative	-0.188	0.1061	3.1432	0.0762
Visualization	0.1769	0.1039	2.8993	0.0886
Intrinsic Motivation	-0.1826	0.1082	2.8473	0.0915
Synthesis of ideas	0.1839	0.1159	2.5175	0.1126
Resourceful	-0.1499	0.1049	2.0418	0.153
Insightful	-0.153	0.1077	2.0202	0.1552
Elaboration of Ideas	0.1476	0.1077	1.8756	0.1708
Decision making	0.1413	0.1098	1.6556	0.1982
Inventive	-0.1279	0.1053	1.4765	0.2243
Inquisitive	-0.1225	0.1039	1.3912	0.2382
Metaphorical thinking	-0.1635	0.1529	1.1424	0.2851
Divergent thinking	-0.1168	0.1099	1.1298	0.2878

Note: Bolded items demonstrated a significant relationship. *B* is the estimate. *SE B* is the standard error of the estimate.

Qualitative Results

The qualitative analysis for the final portion of the survey consisted of data from two prompts. The first prompt was: “Thinking back over your student interactions in and out of the classroom, please describe general strategies you use to encourage creative thinking.” This item drew 316 responses. The final item on the survey drew 302 answers to the prompt: “Please provide an example of a teaching method, strategy or technique

you use to encourage student’s creative thinking.” Many of the participants who answered both items stated “same as above” or a similar response to the second prompt. Others entered abbreviated versions of their response to the first prompt. Both questions were initially analyzed separately. However, because of the amount of redundancy in answers, the major themes and subthemes were almost identical, the analysis is presented in one set of themes. The themes form the framework for the proposed model; The Creative Process of the Occupational Therapy Student (Figure 4.5). The model consists of 4 primary themes with subthemes:

- Assignment Instructions and Types
 - Rubric
 - Assignment Type
 - Resource Availability
- Assignment Process
 - Group vs Individual
 - Student Directed Learning
 - Adaptation
 - Novel Situation
 - Role Play
 - Critical Thinking
 - Reflection
 - Synthesis

- Divergent Thinking
- Environment
 - Settings
 - Safe Environment
- Instructor Influence via Interactions
 - Support for the Importance of Creativity
 - Guidance to Resources
 - Mentoring
 - Role Modeling
 - Probing and Open Ended Questions

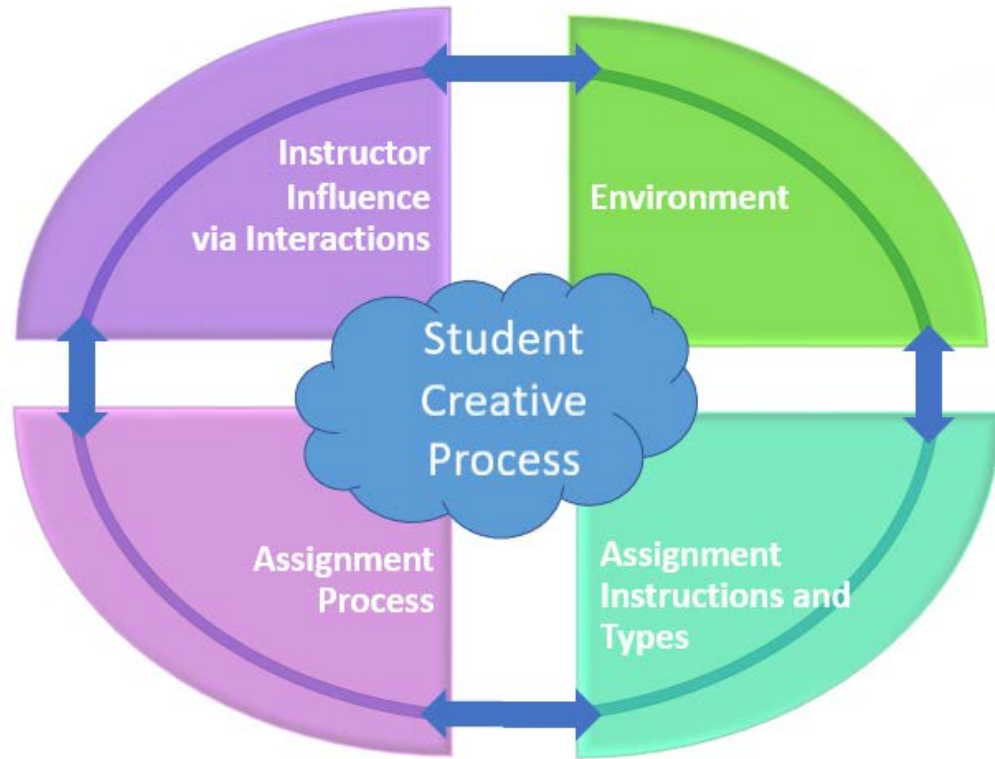


Figure 4.5 The Creative Process of the Occupational Therapy Student

Assignment Instructions and Types

The assignment cycle begins with the *assignment instructions and types* chosen by the instructor and can be viewed as part of the Press in the creative process. The instructor often creates press through a rubric. Some instructors specified the need for originality in the grading criteria. Other instructors used the lack of a specific rubric to promote creativity in their students as this faculty member explained:

Although students often desire more direction and do not always enjoy creative thinking (it is not concrete), I only provide guidance retrospectively instead of

giving detailed instructions and rubrics. I find the less up front directions I give, the more creative thinking prevails.

Participants indicated the type of assignment they discussed in a previous section of the survey and also included it in their open ended responses as well. Case studies, intervention plans, fabrications, and problem based learning were often included as a means creating assignments for students to practice problem solving and problem finding: “Students have to creatively develop home programs for example, clinic programs, to address problems that they have identified.”

The type of assignment often dictated the type of media the students could use. Some of the less structured assignments offered a choice of media to increase creativity. Other participants not only offered a choice of media but required the use of “multiple forms of media.” An integral part of one fabrication assignment included introducing new types of media to students:

We have purchased a 3-D printer to augment their range of design media; and also have invested in basic level virtual reality technology to consider in treatment planning to promote neurological recovery. I also introduce the concepts of app development.

The final subtheme in the *assignment instructions and types* is the availability of resources. Some study members described initially restricting student resources so they could learn to “be resourceful with limited items.” One assignment required students to

use a small budget and they were “provided with a limited number of materials and must design an OT session (using case study) and the materials ONLY that were provided.”

Assignment Process

The *assignment instructions and types* create a structure for the *assignment process* where students begin to explore their own creativity. This is a part of the process of creativity as viewed within the Four Ps model (Rhodes, 1987). Participants were very descriptive of how they worked within this theme which created many subthemes.

Group or individual work was one of the most commonly described parts of the *assignment process*. Many faculty chose to place the creativity process within a large or small group setting to promote discussions, brainstorming sessions, and to allow students to “exchange ideas with one another.” Often participants intentionally set up different processes to include “a range of group sizes” and individual work.

The subtheme of Group vs Individual work is also an excellent example of the interdependence of the themes. The assignment type of Group vs Individual was actually created by assignment instructions but is included here due to the large impact it has on the *assignment process*. It is also included since it would be considered a means of completing the *assignment process* as opposed to being a true type of assignment. This demonstrates the fluidity of these themes and how they work together in a non-linear order to move the student toward completing an assignment containing creative elements.

Group active learning was one example of student directed learning activities, another subtheme of the *assignment process*. Flipping the classroom was mentioned as a means of creating student directed learning opportunities as well. By offering students chances for active learning, faculty supported individuality and creative thinking in the assignments.

The adaptation of tasks, tools or environments as part of the process was a common theme. Participants expressed the desire to help their students “develop a repertoire of adaptive strategies.” These strategies lay a foundation for the use of adaptation and creativity in treatment. Adaptation to novel situations was part of building creative experiences for their students. Creating situations or the use of materials that students were not familiar with helped push the learner to be more imaginative.

Faculty frequently mentioned the use of role play as a method for provoking creative thinking. In one instance, a participant described how role playing through fieldwork issues pushed the students to understand another person’s position. In another assignment, students were asked “to take a position different from their values and beliefs and role play a situation to promote empathy.”

Among our participants, creativity and critical thinking were often referred to as one process; “I will take them through a step by step creative and critical thinking process if they get ‘stuck.’” Faculty spoke of “facilitating their critical thinking” individually and in group processes to promote “team/collaborative critical thinking”. Additionally, case studies were used with incongruities where students were required to “solve the

anomalous part by using critical thinking skills.” An emphasis on the client was often present in the process by encouraging the student to focus “on client-centered care so that the student can creatively implement interventions.”

Reflection and synthesis were complementary parts of the *assignment process*. Reflection took place both individually and in groups. Faculty used self-reflection in general or specific assignments such as a “disability experience” to spark creative thinking. The reflection process took place verbally, in person, and also in written assignments. Synthesis of readings and reflections on experiences were also popular in the process.

Students were also asked to participate in a common form of creativity, divergent thinking. Divergent thinking was enhanced by drawing out thought bubbles and diagrams or other figures to illustrate their “thought map.” Brainstorming and “creating models and maps of content” were also encouraged by faculty. They sought to “promote comfort with ambiguity through acceptance of divergent thinking / answers.” Often this was accomplished by “offering scenarios with complex factors and multiple ‘right’ answers.”

Environment

The effect of each theme on student creativity is not linear. Themes and subthemes affect each other. The *environment* provides a foundation for the other portions of the model but is affected by them as well. The *environment* is a product of the instructor’s influence through interaction and the *assignment instruction and types*. Assignments

“engaging in service learning with population based OT settings” such as “homeless shelters or intergenerational daycares.” provided novel environments for students.

Faculty described service learning designed to take place in a non-traditional OT setting or in community settings. Additionally, faculty created safe environments allowing students “to make mistakes as long as we learn from them.” The freedom to fail, gives students the ability to open themselves to new experiences and ideas and “permission to be creative.”

Instructor’s Influence via Interactions

The final theme is the *instructor’s influence via interactions* and is often described as supporting the importance of student creativity through encouragement and guidance.

This encouragement can be paired with providing a safe environment as one participant described:

I encourage students to try new things. I tell them they will NOT fail. I establish a strong bond/trust and empower students to think "outside the box." The big challenge is changing students' mindset. They've all been conditioned to get top grades to be accepted into our programs and we then turn around and want them to be creative. It takes a lot of convincing for them to step outside their comfort zones to try new things.

The encouragement given by faculty to explore creativity in a safe environment provides support for growth of these new skills.

Through the interactions faculty provide mentoring and access to resources. The mentoring relationship could already be present from previous interactions between the student and the faculty member. The trust built in that relationship allows the student to feel “free to fail.” Through that relationship, the faculty members are able to ask “questions and probe for different ways interventions/materials can be designed and used to achieve a variety of clinical goals.” Questioning by faculty offers the chance to allow the student to explore deeper meaning. One participant frequently asks “Why?” in order “to facilitate justification of idea.” “Open ended questions that provide multiple response or differing opinions” provide students the opportunity to see there can be more than one right answer when working on tasks requiring creativity.

Instructors described serving as mentors and guides to students as well as role models. Some participants actively role model specific skills such as “calculated risk taking” or demonstrating creativity in teaching methods. Guiding students also includes providing resources or instructions on how to find resources. This provides the foundation for students to build on in a creative way while learning about occupational therapy.

CHAPTER V

DISCUSSION

This study achieved the fundamental goal of providing a description of how faculty view and teach creativity in OT education. Quantitative and qualitative descriptions demonstrate OT faculty place a high value on creativity, to such a degree that we were unable to determine if there were differences between those who view creativity as important and those that did not. Additionally, participant data demonstrated some significant relationships between the number of years teaching or clinical experience and the descriptors chosen to describe an assignment requiring creativity. We were also able to begin to build an understanding of how faculty teach and evaluate creative thinking in entry level OT programs.

Findings

Faculty View of Creativity

Faculty expressed strong agreement with the idea that creativity is part of OT practice and should be part of OT education. There was a slightly lower level of agreement with the statement: “Assignments in my classes include creative thinking” which supports the original hypothesis that while OT as a profession values creativity we may not always

be teaching creative thinking. The ACOTE program standards (AOTA, 2016) also validate this position as there is no specific mention of teaching creative thinking in OT program requirements.

Teaching Creativity

Many of the OT faculty members in this study are teaching creativity even if it is not an officially recognized portion of the programs. Faculty typically described the assignments requiring creativity as a lab or presentation that occurred face to face. This agrees with student perceptions that completing projects helped contribute to creative thinking over a more passive activity such as reading (Boiselle, 2015).

The faculty also chose some of the same descriptors for their creative assignment as students used in a previous study to describe creative thinking (Boiselle, 2015). Three of the students' descriptors for creativity were in the faculty's top 10 (reflective, imaginative, and resourceful). Imaginative was the only descriptor in the top 10 responses on both faculty and student lists. Faculty were most likely to select descriptors such as problem solving, critical thinking, brain storming and synthesis of ideas. Students in past research were most likely to pick imaginative, innovative and artistic (Boiselle, 2015).

The purpose in choosing the descriptors may explain the differences. The students were choosing words to define creative thinking versus faculty who were applying it to describe an assignment requiring creative thinking. Additionally, the faculty choice of descriptors offers a view of how faculty feel they are teaching creative thought. They feel

problem solving, elaboration of ideas, and brainstorming are important pieces of creative thought and the creativity literature agrees with them. The common use of Bloom's Taxonomy also encourages the use of this language to describe the word "create" (Krathwohl, 2002). The most often chosen descriptor was critical thinking which seems to confirm findings in previous research that students may feel critical thinking is valued over creativity in graduate level work (Brodin, 2014).

Analysis of the relationship between the faculty's assignment evaluation criteria and the descriptors led to noteworthy findings. We found conflicting descriptor associations with all the evaluation criteria we analyzed. A faculty member who described their assignment as problem defining was less likely to evaluate it for problem solving skills and more likely to evaluate it for visualization. The choice to evaluate an assignment for originality held an inverse relationship with the descriptor, original. Also, those who evaluated the assignment for the presence of creative thought were less likely to describe the assignment as original or requiring divergent thinking. Possible explanations for this contradiction between grading criteria and how an assignment is described may be due to faculty using different terms to describe creative thought than are commonly found in the literature. Additionally, faculty may believe they are including the need for originality or divergent thinking but are uncomfortable grading for it.

Creative Process of the Occupational Therapy Student

Faculty offered additional insights into how they teach creative thinking through open ended responses that were examined thorough qualitative analysis. The resulting themes in the CPOTS have a fluid relationship with each other as students work through the process of creative thinking. The themes bear a resemblance to models on creativity that incorporate Press and Process (Runco, 2004) and even more importantly for application in OT, there are similarities to portions of the theory of Occupational Adaptation (Schkade & McClung, 2001; Schkade & Schultz, 1992; Schultz & Schkade, 1992).

The primary parallels between the CPOTS and OA are seen in the occupational environment and creation of the occupational challenge (Schkade & McClung, 2001; Schkade & Schultz, 1992; Schultz & Schkade, 1992). The occupational environment is influenced by three of the themes in CPOTS including *environment*, *instructor influence via interactions* and *assignment instructions and types*. Though the order of the stages in the CPOTS model can be fluid, the *assignment instructions and types* often influence the *student creative process* first and creates the occupational challenge.

The four foundation themes of the CPOTS model drive the *student creative process*. The *student creative process* is also heavily influenced by variables that were not part of this study such as student motivations or desire for mastery, intelligence, previous foundational knowledge and personality characteristics. Further development of

this model should include studies looking at the same creative activity from both the perspective of the instructor and the student to close these gaps in knowledge.

Additionally, the use of a domain specific lens such as OA to view creative education in OT is supported by the literature (Baer & Kaufman, 2005; Kaufman & Baer, 2002; Owen et al., 2010; Woodward & Sikes, 2015). Domain specificity, especially at graduate level education, will allow for the refinement of learning models. These models can describe creativity specifically to serve OTs when they leave school and move into clinical practice.

Relationship between Faculty Background and Views on Creativity

The initial survey was designed to gather the clinical and educational experience levels of the participants. This information was to be analyzed for relationships to their views on creativity. Their outlook on creativity in OT and OT education was collected through Likert scale survey questions. There were so few participants who felt creativity was not important in OT that this analysis was not possible. However, this leads to the overall implication that faculty in entry level OT programs deeply value the importance of creativity. They believe creativity is important in everyday OT practice and therefore students should be educated in creative thinking. They also feel, to a lesser degree, that creative thinking is included in their assignments but only 48% of the participants graded their chosen assignment which required creativity for creative thought.

Analysis investigating the relationship between faculty teaching and clinical experience and how creativity is taught in assignments found little significance. Only two of the descriptors were found to differ significantly by level of experience for both clinical and educational experience. The frequency of the descriptor metacognitive skills decreased as someone gained experience in teaching and clinical practice. The small number of significant relationships found between the descriptors and the faculty's level of experience suggests faculty may not evolve their methods for including creative thinking in assignments based on time and experience in the profession. This is not unexpected when creativity is not a required program objective as defined by ACOTE (AOTA, 2016).

Educational Implications

Participants were clear in communicating how much they value creativity in OT education. The importance of creative thought to OT educators supports the feelings of OT students described in previous studies. Collins et al. (2011) found students felt that participating in an assignment with room for creativity helped them “gain a greater depth of understanding of occupation and the role it plays in their lives” (p. 306).

While faculty may include creativity in their assignments, the profession does not have a systematic method to ensure it is being taught. ACOTE standards are the basis for accreditation for OT programs and the standards do not require the inclusion of creativity (AOTA, 2016). The need to take a licensure examination to practice may move programs and ACOTE toward a focus on concrete skills that can be more easily measured.

However, the importance of creativity to faculty in both OT education and practice is clear from the findings of this study. Fox and Fox (1968) found the instruction of creativity improves elements often associated with creative thinking such as flexibility and originality. Their study also demonstrated the ability to measure these skills in OT students through evaluation criteria which could be incorporated into licensure examinations. Inclusion of the instruction of creative thought in program standards and licensure examinations would bolster the ability of faculty to teach something valued by OT faculty, practitioners and students alike.

Future of Creative Thought in Occupational Therapy Education

A good place to begin the discussion of how to include creativity in OT education is based on the Occupational Therapy Education Research Agenda (AOTA, 2014b). The agenda outlines six categories to drive education related research: “(1) theory building, (2) pedagogy, (3) instructional methods, (4) learner characteristics and competencies, (5) socialization to the profession, and (6) faculty development and resources.” (AOTA, 2014b). The categories in the agenda can provide a systematic way of intentionally including creativity in OT education. This study seeks to address the first two goals by beginning to build a theory of how OT faculty teach creativity to their students and to determine how this may fit into the pedagogy of the profession. The instructional methods described by participants provide a basis for expanding on the methods instructors can use to teach creativity. The fourth category, learner characteristics, can be related to Boiselle’s (2015) work which began to build a foundation in OT student

characteristics while learning creativity. Creativity is valued by OTs as seen in this study and learning its importance is part of socialization into the profession. Finally, faculty development in knowledge of creativity and methods to teach it are essential if we are to integrate creativity into the education of the profession.

Limitations and Future Directions

Creativity is a broad field and given its size the focus of most studies will narrow the breadth to provide a greater depth of knowledge. In this study, the choice to limit the participants to faculty from entry level OT programs eliminated a large portion of the instructors in the field. The faculty in occupational therapy assistant (OTA) programs may view or teach creativity differently. The OT faculty in this study most often described creative by using terms related to problem solving and critical thinking. These are pieces of creative thought but there are other aspects of creativity that are valued as well such as; spontaneity, playfulness, and imagination. Teaching problem solving skills would be very different from ensuring OT or OTA students are able to be playful or spontaneous. Measurement of these skills to ensure student advancement in creative thought would require different tools as well. Future studies investigating the views of OTA program faculty would be valuable in determining how creativity is taught to a large number of OT professionals.

Another limitation of the study was the design of the survey. There were 443 participants that began the demographic portion of the survey but only 399 continued to

the creativity portion of the survey. The loss of 44 participants so early in the survey may have been influenced by boredom with the demographic questions on a survey about creativity. In future studies reducing the number of demographic questions or changing the order of questions may aid in retaining participants to the end of the survey.

Future directions should include a deeper look into the relationship and interactions between faculty and students. There could be a relationship between the number of classes an instructor has with a student and the level of interaction the two pursue. Faculty attempted to provide students with a “safe environment” when teaching creative thinking. If the feeling of safety and trust has been built between a teacher and student through past interactions, the potential may exist for deeper learning in present interactions.

This study sought to answer the high-level view faculty hold of creative thinking and how they try to teach it. This study allows us to see how the faculty seek to use assignment instructions and environment to influence the student’s creative process. Future studies that include both faculty and student perspectives of the same project, would allow for a deeper exploration of how the instructor influences the process through environment, instructions and interactions. It would also allow for the student perspective of these factors and their influence on the assignment. In particular, the influence of a rubric (or lack of one) on the student creativity process would be an area worthy of exploration. Study of this area would yield research translatable to best practices in the classroom.

REFERENCES

- Amabile, T. M. (1996). *Creativity in context*. Colorado: Westview Press, Inc.
- Amabile, T. M., Barsade, S. G., Mueller, J. S., & Staw, B. M. (2005). Affect and creativity at work. *Administrative Science Quarterly*, 50(3), 367-403.
- Amabile, T. M., & Pillemer, J. (2012). Perspectives on the social psychology of creativity. *Journal of Creative Behavior*, 46(1), 3-15. doi:10.1002/jocb.001
- American Occupational Therapy Association, Division of Academic and Scientific Affairs. (2014a). Academic Programs Annual Data Report 2013-2014. Retrieved from: <http://www.aota.org/-/media/Corporate/Files/EducationCareers/Accredit/2013-2014-Annual-Data-Report.pdf>
- American Occupational Therapy Association. (2014b). Research Agenda—Occupational therapy education research agenda. *American Journal of Occupational Therapy*, 68, S83–S86. doi: 10.5014/ajot.2014.685S06
- American Occupational Therapy Association. (2016). *Accreditation Council for Occupational Therapy Education (ACOTE) Standards and Interpretive Guide*. Retrieved from <http://www.aota.org/~//media/Corporate/Files/EducationCareers/Accredit/Standards/2011-Standards-and-Interpretive-Guide.pdf>

- Baer, J., & Kaufman, J. C. (2005). Bridging generality and specificity: The amusement park theoretical (apt) model of creativity. *Roeper Review*, 27(3), 158-163.
doi:10.1080/02783190509554310
- Blanche, E. I. (2007). The expression of creativity through occupation. *Journal of Occupational Science*, 14(1), 21-29.
- Boden, M. A. (2013). Creativity as a neuroscientific mystery. In O. Vartanian, A. S. Bristol & J. C. Kaufman (Eds.), *Neuroscience of creativity* (pp. 3-18). Cambridge, MA: MIT Press.
- Boisselle, A. (2015). Student and faculty perspectives on creative thinking across the master of occupational therapy program (Doctoral dissertation). Retrieved from Proquest Dissertations & Theses Global. (Order No. 3711467).
- Brodin, E. M. (2014). Critical and creative thinking nexus: Learning experiences of doctoral students. *Studies in Higher Education*. doi:10.1080/03075079.2014.943656
- Bull, K. S., Montgomery, D., & Baloch, L. (1995). Teaching creativity at the college level: A synthesis of curricular components perceived as important by instructors. *Creativity Research Journal*, 8(1), 83-89. doi:10.1207/s15326934crj0801_7
- Bunkers, S. S. (2009). Fostering the creative spirit in teaching-learning. *Nursing Science Quarterly*, 22(4), 323-325. doi:10.1177/0894318409344764

- Centers for Disease Control. (2012). [Map and chart representing the census regions of the United States]. Census Regions of the United States. Retrieved from <https://www.cdc.gov/std/stats11/census.htm>
- Clapham, M. M. (2011). Testing / measurement / assessment. In Runco, M. A., & Pritzker, S. R., (Eds.) *Encyclopedia of Creativity, Volume 1-2* (458-470). St. Louis, MO: Academic Press.
- Collins, M., Harrison, D., Mason, R., & Lowden, A. (2011). Innovation and creativity: Exploring human occupation and professional development in student education. *British Journal of Occupational Therapy*, 74(6), 304-308.
doi:10.4276/030802211X13074383958020
- Conn, J. J. (2002). What can clinical teachers learn from Harry Potter and the philosopher's stone? *Medical Education*, 36(12), 1176-1181. doi:10.1046/j.1365-2923.2002.01376.x
- Creswell, J. W. (1998). *Qualitative inquiry and research design: Choosing among five traditions*. Thousand Oaks, California: Sage Publications.
- Cropley, A. J. (2007). *Creativity in education and learning: A guide for teachers and educators*. London, England: Taylor & Francis Group.
- Csikszentmihalyi, M. (2013). *Creativity: The psychology of discovery and invention*. London, England: Harper-Collins.

- Daly, S. R., Mosyjowski, E. A., & Seifert, C. M. (2014). Teaching creativity in engineering courses. *Journal of Engineering Education, 103*(3), 417-449. DOI 10.1002/jee.20048
- Doane, G. H. (2002). In the spirit of creativity: The learning and teaching of ethics in nursing. *Journal of Advanced Nursing, 39*(6), 521-528.
- Drolet, M. & Désormeaux-Moreau, M. (2016). The values of occupational therapy: Perceptions of occupational therapists in Quebec. *Scandinavian Journal of Occupational Therapy, 23*(4), 272-285. doi:10.3109/11038128.2015.1082623
- Fidler, G. & Fidler, J. (1978). Doing and becoming: Purposeful action and self-actualization. *American Journal of Occupational Therapy, 32* (5), 305-310.
- Fletcher, T. S. (2010). A grounded theory analysis of the relationship between creativity and occupational therapy (Doctoral dissertation). Retrieved from Proquest Dissertations & Theses Global. (Order No. 3405818).
- Fox, J. V., & Fox, F. H. (1968). Exploratory studies on the measurement of creative thinking about occupational therapy. *The American Journal of Occupational Therapy, 22*(3), 180-185.
- Gerrish, K., Ashworth, P. D. & McManus, M. (2000). Some dilemmas of master's level nurse education. *Journal of Advanced Nursing, 32*(4), 834-841.
- Guilford, J. P. (1950). Creativity. *American Psychologist, 5*(9), 444-454.
doi:10.1037/h0063487

- Hall, H.J. (1905). Neurasthenia: A study of etiology. Treatment by occupation. *Boston Medical and Surgical Journal*, *CLIII* (2), 47-49.
- Hydo, S. K., Marcyjanik, D. L., Zorn, C. R., & Hooper, N. M. (2007). Art as a scaffolding teaching strategy in baccalaureate nursing education. *International Journal of Nursing Education Scholarship*, *4*(1), 1-13.
- Indiana University School of Education (2017). The Carnegie Classification of Institutions of Higher Learning: Basic classification description. Retrieved from <http://carnegieclassifications.iu.edu/downloads.php>.
- Jolly, J. L. (2009). The National Defense Education Act, current stem initiative, and the gifted. *Gifted Child Today*, *32*(2), 50-53.
- Kaufman, J. C. & Baer, J. (2002). Could Steven Spielberg manage the Yankees? Creative thinking in different domains. *The Korean Journal of Thinking & Problem Solving*, *12*(2). 5-14.
- Kielhofner, G. & Fossey, E. (2006). The range of research. In G. Kielhofner (Ed.), *Research in occupational therapy: Methods of inquiry for enhancing practice* (pp. 20-35). Philadelphia, PA: F. A. Davis.
- Klausen, S. H. (2010). The notion of creativity revisited: A philosophical perspective on creativity research. *Creativity Research Journal*, *22*(4), 347-360.
doi:10.1080/10400419.2010.523390

- Krathwohl, D. R. (2002). A revision of bloom's taxonomy: An overview. *Theory into Practice, 41*(4), 212-218.
- Lincoln, Y. S. & Guba, E. G. (1985). *Naturalistic inquiry*. Newberry Park, CA: Sage Publications.
- Marquis, E. & Henderson, J. A. (2015). Teaching creativity across disciplines at Ontario universities. *Canadian Journal of Higher Education, 45*(1), 148-166.
- Meyer, A. (1977). The philosophy of occupation therapy. *American Journal of Occupational Therapy, 31* (10):639–642. (Reprinted from the *Archives of Occupational Therapy, 1* pp. 1-10).
- Mumford, M. D., Mobley, M. I., Reiter-Palmon, R., Uhlman, C. E., & Doares, L. M. (1991). Process analytic models of creative capacities. *Creativity Research Journal, 4*(2), 91-122. doi:10.1080/10400419109534380
- Owen, A. M., Hampshire, A., Grahn, J. A., Stenton, R., Dajani, S., Burns, A. S., . . . Ballard, C. G. (2010). Putting brain training to the test. *Nature, 465*(7299), 775-778. doi:10.1038/nature09042
- Plucker, J. A., Beghetto, R. A., & Dow, G. T. (2004). Why isn't creativity more important to educational psychologists? potentials, pitfalls, and future directions in creativity research. *Educational Psychologist, 39*(2), 83-96. doi:10.1207/s15326985ep3902_1
- Rhodes M. (1987). An analysis of creativity. In S. G. Isaksen, (Ed.), *Frontiers of Creativity Research: Beyond the Basics*, (216–22). Buffalo, NY: Bearly.

- Royeen, L. (2015). Embracing creativity in occupational therapy. *The Open Journal of Occupational Therapy*, 3(1). doi: 10.15453/2168-6408.1169
- Runco, M. A. (2004). Creativity. *Annual Review of Psychology*, 55, 657–87. doi: 10.1146/annurev.psych.55.090902.141502
- Runco, M. A. (2014a). "Big C, little c" creativity as a false dichotomy: Reality is not categorical. *Creativity Research Journal*, 26(1), 131-132.
doi:10.1080/10400419.2014.873676
- Runco, M. A. (2014b). Creativity: Theories and themes: Research, development, and practice. *Creativity: Theories and themes: Research, development, and practice* (pp. 1-500) doi:10.1016/C2012-0-06920-7
- Schkade, J. K., & Schultz, S. (1992). Occupational adaptation: Toward a holistic approach for contemporary practice, part 1. *American Journal of Occupational Therapy*, 46(9), 829-837.
- Schkade, J. K., & McClung, M. (2001). *Occupational adaptation in practice: Concepts and cases*. Thorofare, NJ: Slack.
- Schmid, T. (2004). Meanings of creativity within occupational therapy practice. *Australian Occupational Therapy Journal*, 51(2), 80-88. doi:10.1111/j.1440-1630.2004.00434.x
- Schmid, T. (2005). *Promoting health through creativity: For professionals in health, arts and education*. London, England: Whurr Publications.

- Schultz, S., & Schkade, J. K. (1992). Occupational adaptation: Toward a holistic approach for contemporary practice, part 1. *American Journal of Occupational Therapy, 46*(10), 917-925.
- Scott, G., Leritz, L. E., & Mumford, M. D. (2004). The effectiveness of creativity training: A quantitative review. *Creativity Research Journal, 16*(4), 361-388.
- Slagle, E. C. (1939). The training of a therapist for work of mental patients. *Professional and Technical Education in Relation to Mental Health, 408-415*.
- Sternberg, R. J. (2003). *Wisdom, intelligence, and creativity synthesized*. New York, NY: Cambridge Press.
- Torrance, E. P. (1993). Understanding creativity: Where to start? *Psychological Inquiry, 4*(3), 232-234. doi:10.1207/s15327965pli0403_17
- Treffinger, D. J., Schoonover, P. F., & Selby, E. C. (2013). *Educating for creativity and innovation*. Waco, TX: Prufrock Press.
- Tubbs, C. C. & Drake, M. (2012). *Crafts and creative media in therapy*. Thorofare, NJ: Slack.
- Vernon, P. E. (1970). *Creativity*. Middlesex, England: Penguin Books.
- Woodward, J., & Sikes, P. L. (2015). The creative thinking ability of musicians and nonmusicians. *Psychology of Aesthetics, Creativity, and the Arts, 9*(1), 75-80. doi:10.1037/a0038177

APPENDIX A

Creativity in Occupational Therapy Education Survey

Creativity in Occupational Therapy Education

Survey Information and Informed Consent

Texas Woman's University Consent to Participate in Research

Investigator: Lisa Griggs-Stapleton, MOT, OTR/L, PhD Candidate, lgriggsstapleton@twu.edu

Advisor: Mary F. Baxter, PhD, OT, mbaxter@twu.edu

As a faculty member in an entry-level master's or doctoral occupational therapy program, you are invited to participate in an online study entitled *Faculty Perspectives on the Development of Creative Thinking in Entry Level Occupational Therapy Students*. Occupational therapists often view creativity as important to their practice but little is known about how creativity is taught or viewed by OT faculty. The study authors seek to learn more about how faculty view creativity in occupational therapy practice and education.

Participants will take part in a *one-time survey which should only take 15 minutes*. All potential participants are eligible to register for a drawing for one **\$50 amazon.com gift card**. You will not need to complete the survey to participate in the drawing. Your registration will not be connected to your survey answers. To enter the drawing email your name and email address to lgriggsstapleton@twu.edu with the subject line: Survey Drawing. At the end of the study one name will be drawn and the winner will be notified through the email address he or she provided.

The completion of this online questionnaire constitutes your informed consent to participate in this study. You may withdraw from the study at any time. We are using Psychdata to gather survey data. Psychdata provides a safe and confidential environment for your information and we will ensure IP address readers are disabled. You will take this study anonymously as we do not ask for your name or identifying information. You may email the principal investigator to learn about the study findings. Thank you for your help!

Sincerely,

Lisa Griggs-Stapleton, MOT, OTR/L

Mary Frances Baxter, PhD, OT

Continue ONLY when finished. You will be unable to return or change your answers.

Continue »

*1) Do you teach in an Entry Level program conferring a:

Clinical Doctorate in OT

Master's Degree in OT

Neither

Continue ONLY when finished. You will be unable to return or change your answers.

Continue »

***2)** Please indicate your gender:

Male Female

***3)** What is your highest degree attained?

Master's degree in OT
 Master's degree in a field other than OT
 OTD
 PhD
 EdD
 Other (please specify)

***4)** Are you or have you ever been a licensed OT or OTA?

Yes
 No

Continue ONLY when finished. You will be unable to return or change your answers.

***5)** How many years of combined clinical experience do you have as an OT/OTA?

***6)** What other licenses do you or have you ever held?

Physical Therapist
 Speech Therapist
 Psychologist
 None
 Other (please specify)

Continue ONLY when finished. You will be unable to return or change your answers.

7) How many total years of clinical experience do you have?

0-5
 6-10
 11-15
 16-20
 20+

*8) How many years teaching experience do you have in OT?

*9) How many years teaching experience do you have in all fields combined?

Continue ONLY when finished. You will be unable to return or change your answers.

For the following questions, if you teach at more than one college or university, please think of the one that you consider your primary employer.

10) Please list the name of the primary university or college where you are currently teaching (This is to establish the Carnegie Mellon rating of your institution.)

11) Where is your program office located?

12) Where are your classrooms located?

13) Are you adjunct, part-time or full-time faculty at this institution?

14) What information does your program require from applicants (choose all that apply)?

GPA
 GRE
 Interview
 Essay
 Observation Hours
 Letters of Recommendation
 Other (please specify)

15) How many semesters does it take for a full-time student to complete the DIDATIC portion of your program?

Other:

16) Is participation in a research project required for graduation?

yes
 no

17) Do some students complete an elective research project?

yes
 no

18) How many semesters does the typical research project require to complete?

--Select-- ▾

Other:

Continue ONLY when finished. You will be unable to return or change your answers.

Please use the following definition of creativity for the questions in this survey:

Creativity is the interaction between person, process, and environment by which an individual or group produces a perceptible product that is both novel and useful as defined within a social context.

-Modified version of the definition by Plucker, Beghetto & Dow (2004)

With this definition in mind, please rate how much you agree or disagree with the following statements:

	1 - Strongly Disagree	2	3	4 - Neither Agree nor Disagree	5	6	7 - Strongly Agree
*19) Occupational therapists do NOT use creativity during occupational therapy sessions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*20) Creativity is part of occupational therapy practice.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*21) Students in occupational therapy should learn how to think creatively.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*22) Assignments in my classes include creative thinking.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*23) Students do NOT need to learn how to use creativity in occupational therapy sessions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Continue ONLY when finished. You will be unable to return or change your answers.

For the final portion of the survey:
Thinking through the assignments in the courses you teach, please choose one that you feel requires creative thinking.

24) Is this a group or individual assignment?

25) What best describes this assignment?

Other:

26) Which of the following terms would you use to describe the expected process or product required to complete this assignment?(Check the box beside each item that applies.)

- Problem finding
- Problem defining
- Problem solving
- Metaphorical thinking
- Brainstorming
- Divergent thinking
- Elaboration of Ideas
- Visualization
- Critical thinking
- Metacognitive skills
- Decision making
- Inductive thinking
- Synthesis of ideas
- Intrinsic Motivation
- Imaginative
- Innovative
- Artistic
- Inventive
- Insightful
- Expressive
- Original
- Visionary
- Visualizing
- Free
- Resourceful
- Spontaneous
- Exciting
- Reflective
- Inquisitive

27) How do you evaluate the assignment?(May check more than one.)

- Final product met assigned criteria
- Creative thought process was present
- Final product was original
- Final product solved a problem effectively
- Other (please specify)

28) Is this assignment for a(n):

29) Thinking back over your student interactions in and out of the classroom, please describe general strategies you use to encourage creative thinking.

(1000 characters remaining)

30) Please provide an example of a teaching method, strategy or technique you use to encourage student's creative thinking.

(1000 characters remaining)

Continue ONLY when finished. You will be unable to return or change your answers.

Continue »

APPENDIX B

TWU IRB Exemption Letter



Institutional Review Board
Office of Research
6700 Fannin, Houston, TX 77030
713-794-2480
irb-houston@twu.edu
<http://www.twu.edu/irb.html>

DATE: August 19, 2016

TO: Ms. Lisa Griggs-Stapleton
Occupational Therapy - Houston

FROM: Institutional Review Board (IRB) - Houston

Re: *Exemption for Faculty Perspectives on the Development of Creative Thinking in Entry Level Occupational Therapy Students (Protocol #: 19124)*

The above referenced study has been reviewed by the TWU IRB (operating under FWA00000178) and was determined to be exempt from further review.

If applicable, agency approval letters must be submitted to the IRB upon receipt PRIOR to any data collection at that agency. Because a signed consent form is not required for exempt studies, the filing of signatures of participants with the TWU IRB is not necessary.

Although your protocol has been exempted from further IRB review and your protocol file has been closed, any modifications to this study must be submitted for review to the IRB using the Modification Request Form. Additionally, the IRB must be notified immediately of any adverse events or unanticipated problems. All forms are located on the IRB website. If you have any questions, please contact the TWU IRB.

cc. Dr. Patricia Bowyer, Occupational Therapy - Houston
Dr. Mary Frances (Francie) Baxter, Occupational Therapy - Houston
Graduate School