

2020

# Embracing entrepreneurship: occupational therapy's introduction to design-thinking for innovation

---

<https://hdl.handle.net/2144/39313>

*Boston University*

BOSTON UNIVERSITY  
SARGENT COLLEGE OF HEALTH AND REHABILITATION SCIENCES

Doctoral Project

**EMBRACING ENTREPRENEURSHIP:  
OCCUPATIONAL THERAPY'S INTRODUCTION TO  
DESIGN THINKING FOR INNOVATION**

by

**GIGI JORDAN**

B.S., Boston University, 2013  
M.S., Boston University, 2015

Submitted in partial fulfillment of the  
requirements for the degree of  
Doctor of Occupational Therapy

2020

© 2020 by  
GIGI JORDAN  
All rights reserved

Approved by

Academic Mentor

---

Karen Jacobs, Ed.D., OT, OTR, CPE, FAOTA  
Associate Dean for Digital Learning & Innovation  
Clinical Professor of Occupational Therapy

Academic Advisor

---

Karen Jacobs, Ed.D., OT, OTR, CPE, FAOTA  
Associate Dean for Digital Learning & Innovation  
Clinical Professor of Occupational Therapy

## **ACKNOWLEDGMENTS**

I would like to thank Karen Jacobs, OT, Ed.D., OTR, CPE, FAOTA. Her encouragement, feedback, and mentorship have been essential to my professional growth as an occupational therapy practitioner and for helping this project come to life.

I would like to thank the faculty members of the Boston University Department of Occupational Therapy, especially to Karen Duddy, OTD, OT, OTR for her thoughtful feedback and always encouraging my out-of-the-box thinking.

I would like to thank my classmates in the post-professional OTD program, especially my peer mentor Roni Amivor, OTD, OTR/L. Your support throughout this journey was very meaningful.

I would like thank Midge Hobbs, MA, OTR/L and David McGuire, OTR/L for their constant support and inspiration through my creative and entrepreneurial endeavors.

Finally, a special thank you to my parents and partner John, for their unconditional love, patience, and encouragement throughout this journey.

**EMBRACING ENTREPRENEURSHIP:  
OCCUPATIONAL THERAPY’S INTRODUCTION TO  
DESIGN-THINKING FOR INNOVATION**

**GIGI JORDAN**

Boston University Sargent College of Health and Rehabilitation Sciences, 2020

Major Professor: Karen Jacobs, OT, Ed.D., OTR, CPE, FAOTA, Associate Dean for  
Digital Learning & Innovation, Clinical Professor of Occupational  
Therapy

**ABSTRACT**

Occupational therapy graduate programs are not successfully equipping students to be innovative leaders or take advantage of entrepreneurial opportunities in the changing healthcare landscape. Within the evidence literature, very few studies document the inclusion of innovative entrepreneurial concepts in occupational therapy education or examples of entrepreneurial success in practice.

*The American Occupational Therapy Association (AOTA) Blueprint for Entry-Level Education* states that “business fundamentals” and “entrepreneurial skills” are required in entry-level graduate programs. However, a review of the top 10 occupational therapy programs’ curriculum revealed only half the of these programs were including these concepts, majority of which focused on business plan creation. Furthermore, very few continuing education (CE) opportunities for the occupational therapy practitioner exist on entrepreneurship. The majority of current coursework focuses on private practice ownership and does not expose occupational therapy practitioners to other entrepreneurial methods or prepare them for a non-linear path towards entrepreneurship.

Recent evidence within the literature suggests traditional pedagogical approaches and a focus on business plan creation in entrepreneurship education are not effective. Rather an increased emphasis should be put on opportunity recognition, creative thinking, and interdisciplinary collaboration to link entrepreneurial learning with personal development.

The proposed program, *Embracing Entrepreneurship: Occupational therapy's introduction to design-thinking for innovation*, is an evidence-based CE course that teaches occupational therapy entrepreneurs to research and build innovative solutions to problems they are passionate about solving. This doctoral project (1) investigates evidence and best practices in entrepreneurship education for health professionals, (2) proposes a teaching model for OT entrepreneurship education that draws parallels between the occupational therapy and design-thinking processes, and (3) proposes delivery of course content informed by adult learning theory.

This project recognizes that not every practitioner may desire to be an entrepreneur but opportunity to build entrepreneurial awareness is critical for the advancement of the profession. Therefore, *Embracing Entrepreneurship* offers an open-source mini-course that provides an introduction to entrepreneurial idea generation for OT practitioners. The full-length *Embracing Entrepreneurship* CE course guides participants through application of the design-thinking process through multimedia content, weekly assignments, and virtual discussions. The self-guided modules are designed to be completed at the learner's own pace and allows them to develop a unique entrepreneurial venture addressing a need they find personally meaningful. By surveying course takers of both the mini and full-length courses, the program will gain insights into

practitioners' interests, motivations, and potential barriers to pursuing entrepreneurship. *Embracing Entrepreneurship* will equip OT practitioners to be innovative, creative, collaborative problem-solvers capable of solving some of the populations' most complex health challenges.



## TABLE OF CONTENTS

ABSTRACT.....	v
TABLE OF CONTENTS .....	viii
LIST OF TABLES.....	ix
LIST OF FIGURES.....	x
CHAPTER ONE - Introduction .....	1
CHAPTER TWO – Project Theoretical and Evidence Base .....	5
CHAPTER THREE – Description of the Program.....	46
CHAPTER FOUR – Evaluation Plan.....	59
CHAPTER FIVE – Funding Plan .....	70
CHAPTER SIX – Dissemination Plan .....	81
CHAPTER SEVEN – Conclusion.....	93
APPENDIX A: Causal model of the problem .....	96
APPENDIX B: Search strategy report for Factor 1.....	97
APPENDIX C: Search strategy report for Factors 2 & 3.....	98
APPENDIX D: Courses offered at the Top 10 occupational therapy graduate programs relevant to entrepreneurship.....	100
APPENDIX E: Logic Model.....	105
APPENDIX F: Examples of Mini-Course reflection activities.....	106
EXECUTIVE SUMMARY.....	108
FACT SHEET.....	120
REFERENCES.....	122
CURRICULUM VITAE.....	137

## LIST OF TABLES

Table 3.1. Embracing Entrepreneurship mini-course outline .....	49
Table 3.2. Embracing Entrepreneurship full-course outline.....	51
Table 4.1. Embracing Entrepreneurship program evaluation goals.....	60
Table 4.2. Mini-course evaluation questions.....	63
Table 4.3. Full-course evaluation questions.....	66
Table 5.1. Y1 fiscal budget.....	73
Table 5.2. Y2 projected revenue.....	75
Table 5.3. Y2 fiscal budget.....	77
Table 5.4. Potential funding sources.....	78
Table 6.1. Embracing Entrepreneurship primary audience learner personas.....	83
Table 6.2. Descriptions of dissemination plan activities.....	88
Table 6.3. Dissemination plan budget.....	90
Table 6.4. Indicators of success for dissemination plan activities.....	91
Table 6.5. Indicators of goal attainment for dissemination plan activities.....	92

## **LIST OF FIGURES**

Figure 1.1. Explanatory model of the problem.....	3
Figure 3.1. Five-step process for OT entrepreneurial idea generation.....	48
Figure 3.2. Proposed model for integration of OT process and design-thinking.....	52

## **CHAPTER ONE – Introduction**

The landscape of healthcare is ever changing. Over the past millennium, no single force has had more of an impact on quality of life across society than technology (Smith, 2017). The advancement of technology within healthcare continues to provide occupational therapy practitioners with opportunities to implement change and provide services to populations in need in more untraditional ways. As the world of healthcare continues to evolve, occupational therapy is in need of abstract thinkers, risk takers, and problems solvers more than ever.

Occupational therapy practitioners are trained to utilize a framework that encompasses a unique client-centered approach, incorporating a deep understanding of needs and motivations in order to create meaningful change in clients' lives. However, occupational therapy practitioners are consistently called upon to advocate for the distinct value of their profession. Since the profession has emerged, occupational therapy practitioners have been constantly challenged to think innovatively, push the status-quo, and become creative problem solvers in order to validate their worth within the healthcare field. Today, practitioners continue to face the same challenges.

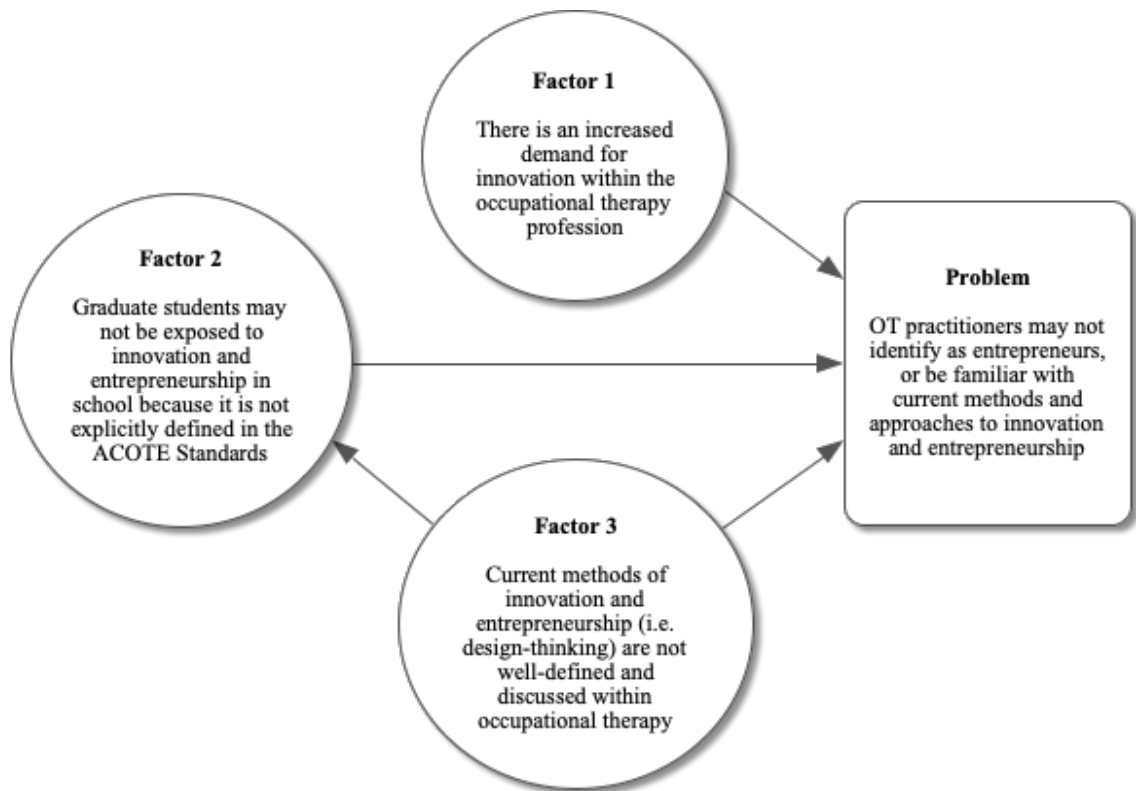
In order to move beyond the confines of the medical model and gain the recognition the profession deserves, occupational therapists must learn to think entrepreneurially, to develop innovative and creative ways to enhance people's lives (McClure, 2011). Innovative professional roles encompass a blend of competency and expertise, which incorporate elements of entrepreneurship and leadership (Holmes & Scaffa, 2009). In order to meet these innovative demands, occupational therapists must

possess the necessary skills and feel empowered to do so. A handful of occupational therapy leaders have developed programs to equip health practitioners with the skills needed to open a private practice. However, majority of the available resources and programs focus on developing a business utilizing the traditional client treating model. Despite the need for innovation in healthcare today, there are limited entrepreneurial resources designed specifically for occupational therapy practitioners who wish to pursue entrepreneurial endeavors other than owning a private practice, such as designing a product, mobile application, or offering their services in a new innovative way. Additionally, opportunities to learn from experienced OT entrepreneurs, and connect with innovative individuals are highly limited.

An explanatory model was developed to understand the relationship between attributing factors and the problem this program intends to address: occupational therapy practitioners may not identify as entrepreneurs or be familiar with current approaches to innovation and entrepreneurship. Figure 1.1 is a visual representation of three proposed factors likely influencing occupational therapy practitioner's unfamiliarity with innovation, entrepreneurship, and their unlikelihood to identify as an "entrepreneur". A description of this explanatory model is explained next.

**Figure 1.1**

*Explanatory model of the problem*



With the occupational therapy profession, there has been an increased demand for innovation and leadership (Factor 1) without a parallel advancement of evidence for inclusion of innovative entrepreneurial methods in occupational therapy education (Factor 2). There is scarce evidence that supports the inclusion of entrepreneurship and innovative teaching methods in occupational therapy education, which is likely because current methods of innovation and entrepreneurship are not well-defined or discussed within the literature (Factor 3). As a result, OT practitioners are not familiar with innovative approaches to entrepreneurship, and likely do not consider themselves

entrepreneurs (Problem).

The increased demand for innovation and leadership within the profession (Factor 1) is influenced by the current culture of rapid change and innovation, technology's influence on everyday occupation, and the creation of new occupations (Hinojosa, 2007). As a result, the role of the occupational therapy practitioner has evolved significantly in order to meet the changing needs of the populations served. Due to limited inclusion of innovative approaches to entrepreneurship in occupational therapy graduate school (Factor 2), current methods of innovation and entrepreneurship are not well-documented, defined or discussed within the literature (Factor 3). In this explanatory model, the Factors 2 and 3 hold an interrelated relationship. If occupational therapy entrepreneurship is not documented within the literature (Factor 3), inclusion of innovative approaches to entrepreneurship may not be identified as a priority in graduate occupational therapy programs (Factor 2). As a result, occupational therapy practitioners may not identify as entrepreneurs, or be aware of their entrepreneurial potential (Problem).

The following chapters will outline propose a theoretical base to inform this project, review the evidence in support of the problem, review current evidence-based best-practices for adult entrepreneurship education, review previous attempts to address the problem, and propose a continuing education program for early stage OT entrepreneurs. This program will aim to increase occupational therapy practitioners' awareness of their entrepreneurial potential, and provide them with the opportunity to apply novel approaches to entrepreneurship to develop innovative solutions, services, programs, or products addressing a need they find personally meaningful.

## **CHAPTER TWO – Project Theoretical and Evidence Base**

As with any new business, program, or service, it is important to first research and define the problem it intends to address before beginning to develop a solution. In this chapter, a deeper understanding of factors attributing to unfamiliarity with innovative approaches to entrepreneurship within the occupational therapy profession is developed.

This chapter is organized into three sections. The first section discusses the theoretical framework that informs this doctoral project. The second section provides a synthesis of the evidence literature search conducted to validate the proposed explanatory model of the problem. Finally, the third section provides an evidence-based summary of current approaches to entrepreneurship education in healthcare and beyond.

### **Section One: Theoretical Framework to Inform the Program**

Adult Learning Theory has been defined as the art and science of helping adults learn (Knowles, 1984). This theory provides a framework to help educators identify distinct features of adult learners and guide them to create meaningful and engaging material for their audience (Pappas, 2013).

According to Adult Learning Theory, there are five assumptions that make adult learners unique and may motivate them to learn about a specific topic of interest (Knowles, 1984). Adult learners (1) have a variety of past experiences to draw upon, which (2) leads them to develop a mature self-concept and increased confidence in their skills. Adults are likely to (3) develop a desire to learn about a particular topic in order to continue to grow personally and professionally (Knowles, 1984; Merriam, 2001). Over time, adult learners (4) develop an innate desire to continue learning, and (5) desire to



participate in practical learning applications to expand their wealth of knowledge (Knowles, 1984; Merriam, 2001).

Over time, individuals undoubtedly acquire a vast body of personal and professional experiences that will shape who they are and who they become. Through these experiences, they become more established within their roles and develop a more secure identity and self-concept is developed (Knowles, 1984). As one develops more confidence in their skills, it is natural to seek opportunities for growth and leadership within their career. It is also likely they engage in some level of self-reflection on their personal and professional growth in order to determine their career objectives (Pappas, 2013). Through this reflection, adults may identify skill sets that they wish to further develop in order to meet their goals, or a growing interest in a particular subject. It is also possible they will develop a feeling of frustration if they realize there are limited opportunities for the growth they desire within their current roles. It is these moments of realization that ultimately lead adult learners to seek out novel learning experiences to expand their knowledge.

Using an Adult Learning Theory framework, educators are better equipped to understand what has drawn students to expand their knowledge in a specific subject, how they prefer to learn, and what they hope to take away from a particular learning experience (Knowles, 1984; Merriam, 2001). This allows educators to create meaningful, relevant, and engaging learning experiences that align with student's personal and professional objectives.

Using Adult Learning Theory as a framework to inform the creation of

Embracing Entrepreneurship will result in a well-developed curriculum that will address the entrepreneurial knowledge gap occupational therapists may perceive. This framework will help the course creator choose teaching methodologies relevant to the desired audience in order to build their confidence and equip them with the skills necessary to evaluate and begin building a new entrepreneurial venture.

### **Section Two: Evidence Base to Support the Project**

To further investigate the problem this program intends to address, an extensive search of the evidence-based literature on innovation and entrepreneurship in occupational therapy education and practice was conducted. Three research questions were formed in correspondence to the attributing factors proposed in the explanatory model.

#### **Research Questions**

1. Is there evidence of an increased demand for leadership and innovation within occupational therapy?
2. Is there evidence that occupational therapy students have limited exposure to innovation and entrepreneurship in graduate school?
3. Is there evidence that examples of occupational therapy practitioners' entrepreneurial success are not well-documented, defined or discussed?

#### **Search Strategy**

This literature search was conducted using the databases PubMed, CINAHL, PsychInfo, Education Full Text, and the online search engine for the American Journal of Occupational Therapy (AJOT). Evidence was reviewed related to: (1) leadership and

innovation in occupational therapy (keywords: leadership, innovation, occupational therapy, and (2) entrepreneurship in occupational therapy education and practice (keywords: occupational therapy, occupational therapy education, entrepreneur, entrepreneurship, innovation, business fundamentals, critical thinking, and strategic planning). Initially, entrepreneurship in occupational therapy education and practice were to be researched separately (Questions 2 & 3), however due to the limited body of literature on entrepreneurship and occupational therapy, these searches led to the same results. To further examine entrepreneurship in education and practice, the search terms “innovation”, “business fundamentals”, “critical thinking”, and “strategic planning” were also included to determine if common entrepreneurial principles were being taught or practiced in occupational therapy, but not explicitly defined as “entrepreneurship” in the literature. Search Strategy Reports for Question 1 and Questions 2 & 3 can be found in *Appendices B and C*, respectively.

To further examine the inclusion of innovation and entrepreneurship in graduate occupational therapy curricula (Question 2), an internet search was also conducted to review the coursework in the top 10 graduate occupational therapy programs (U.S. News World & Report, 2010). Included in this search was the occupational therapy curriculum offered at: Boston University, Washington University in St. Louis, University of Southern California, University of Illinois at Chicago, University of Pittsburgh, Colorado State University, Thomas Jefferson University, Tufts University, University of Kansas Medical Center, and the University of North Carolina at Chapel Hill (U.S. News World & Report, 2010). Abstracts of relevant coursework can be found in *Appendix C*, and will

be discussed further in this chapter. The evidence for each component of the proposed explanatory model of the problem is summarized next.

### **Summary of Evidence in Response to Research Questions**

**1. Is there evidence of an increased demand for leadership and innovation within occupational therapy?** Within the parameters of the search (1) described previously, 14 pieces of literature were found that discuss the need for innovation and leadership within occupational therapy (Anderson & Nelson, 2011; Braveman, 2016; Copolillo, Shepherd, Anzalone & Lane, 2010; Heard, 2014; Hinojosa, 2007; Hinojosa, 2012; Kerr, Bradley, Benton, Hackett, & Daniels, 2015; Lamb, 2016; Lamb, 2017; Lamb, 2018; Leland, Crum, Phipps, Roberts & Gage, 2015; Mitcham, 2014; Moyers, 2007; Stoffel, 2015).

Ten of these articles are inspiring “calls to action” from several profound occupational therapy leaders. These include the American Occupational Therapy Association (AOTA) presidential addresses from the last four years (Lamb, 2016; Lamb, 2017; Lamb, 2018; Stoffel, 2015), two Eleanor Clarke Slagle Lectures (Hinojosa, 2007; Mitcham, 2014), two American Journal of Occupational Therapy (AJOT) Health Policy Perspective editorials (Braveman; 2016; Leland et al., 2015), and two The Issue is... editorials published in the American Journal of Occupational Therapy (AJOT) (Anderson & Nelson, 2011; Hinojosa, 2012). The remaining four pieces of literature discuss the creation of the leadership curriculum in a graduate occupational therapy program (Copolillo et al., 2010), provide an abstract for an entrepreneurship seminar for entry-level graduate students in the United Kingdom (UK) (Kerr et al., 2015), examine the

factors that influence one's decision to pursue a leadership role (Heard, 2014), and discuss the need for innovation and creative thinking within the profession in order to meet the demands of the “exponential economy” (Moyers, 2007).

The scholarly analysis of leadership in occupational therapy has been very limited (Heard, 2014). In his qualitative study, Heard examined why occupational therapists chose the path of leadership, and traits of leadership they valued (2014). Of the 10 occupational therapists interviewed, the desire to make more of an impact and move past their clinical roles were common themes for choosing a path of leadership (Heard, 2014). Competent leadership in healthcare will always be in demand (Heard, 2014). The challenge for the profession moving forward will be to enable future leaders with application of the most current leadership theories and ideas in practice (Heard, 2014).

Serving as the President of the AOTA is a position arguably reserved for some of the most prestigious occupational therapy leaders and change agents within the profession. Each year at the annual AOTA conference, the AOTA President has the opportunity to inspire thousands of practitioners and students by reflecting on their vast experience and knowledge of the profession, discussing historical trends, and outlining strategic priorities to occupational therapy the profession forward. Analysis of the Presidential Addresses over the last five years revealed common themes of: 1) innovation, 2) open-mindedness to new ways of thinking, and 3) creation of professional culture that encourages exploration, curiosity, and creativity (Lamb, 2016; Lamb, 2017; Lamb, 2018; Stoffel, 2015).

In the words of Stoffel (2015), when [occupational therapy] attracts and prepares

a workforce that is empowered to lead, shape, and embrace exploration and innovation, [the profession] thrives. Throughout the forthcoming years, Lamb (2016, 2017, 2018) echoes this sentiment. In order to remain relevant in the systems in which practitioners work, occupational therapy must evolve its education, practice, and research (2016), practitioners must stop following the trail of reimbursement and practitioners must begin innovating in their daily work (2017) by asking questions, exploring possibilities, and taking action (2018). The occupational therapy profession is opening up to creative possibilities, and as long as we remain grounded in desires of the people, populations, and communities we serve, our ideas can evolve into the right solutions (Lamb, 2018).

As the health care system embraces a new paradigm shift towards value-based care, both Braveman (2016) and Leland et al. (2015) argue in their *AJOT Health Policy Perspective* editorials that it is imperative the occupational therapy profession defines its distinct value and unique role in achieving the “triple aim” of healthcare, improving population health outcomes, enhancing consumer satisfaction and reducing health care costs (Braveman, 2016; Leland et al., 2015). This will require occupational therapy practitioners, educators, and researchers to work together (Leland, et al. 2015). Braveman (2016) argues that there is significant room to update the models used to guide practice at the population level outlined within the *Occupational Therapy Practice Framework* (2016) in order to meet the needs of *Population Health*. In order to stay relevant in the shift towards value-based care occupational therapy practitioners must collaborate with diverse disciplines (Braveman, 2016; Leland et. al., 2015). Examples of this in action, such as advocating for changes in policy and education, sitting on

government planning commissions, and helping design new public spaces should be described in the AOTA's *Occupational Therapy Practice Framework* (Braveman, 2016). Leland et al. (2015) also highlights the need for occupational therapy to be a part of cutting-edge interdisciplinary research, such as that of emerging electronic health record (EHR) software that enables the profession to measure its outcomes and build the evidence base of its valuable contributions. Interdisciplinary collaboration with government planning commissions, urban planners, and software developers are a few examples of the innovation the occupational therapy needs to be a part of (Braveman, 2016; Leland et. al., 2015).

The *Eleanor Clarke Slagle Lectures* delivered by Hinojosa (2007) and Mitcham (2014), highlight the need to prepare future practitioners to address the quickly changing needs of the clients and populations they serve. In order to do so, Mitcham (2014), argues that occupational therapy graduates must develop both hard and soft skills. These include hard cognitive skills to search for new information as it unfolds, and hard pragmatic skills to adopt a wide range of technologies in practice (Mitcham, 2014). She argues they also need soft skills to communicate, collaborate, think critically, create solutions, and change the status quo (Mitcham, 2014). A theme of rapid change and change in the status quo of occupational therapy education was also highlighted by Hinojosa (2007) seven years prior. Hinojosa (2007) and Mitcham (2014) agree that innovation is essential for positive change. Hinojosa (2007), urge educators to explore alternative teaching and learning theories beyond the domain of occupational therapy in order to develop new curricula that give students the knowledge and skills to succeed in a rapidly changing world.

Similarly, Mitcham (2014) suggests that the occupational therapy profession tends to “cling to informing rather than reforming or even transforming” (p. 639). It is the responsibility of educators to identify where and how they are falling short and whether sufficient attention has been paid to inclusion of 21st-century skills (Mitcham, 2014).

Moyers, who also served as AOTA President from 2007-2010, clearly echoes Hinojosa’s call to action for innovation, creativity, and leadership within the occupational therapy profession to meet the changing demands of the “exponential economy” (Hinojosa, 2007; Moyers, 2007). Twelve years ago, she argued that the healthcare system was entering a period of revolution, and that exponential growth and use of technology would lead to a new wave of opportunities (Moyers, 2007). Moyers also argued that an improved healthcare system would require a significant departure from current practice, including radical change in service design and in the business models used to support new methods of service delivery (2007, p. 292).

In 2012, Hinojosa builds upon his previous call to action in our era of exponential growth in an AJOT *The Issue is...* editorial, by encouraging practitioners to develop a personal mission statement and individual strategic plan for the rapidly changing future. Future oriented planning includes examining not only what we do with clients, but how we exercise leadership during collaboration with other professions.

In the same editorial column a year prior, Anderson & Nelson (2011), argued that in order for occupational therapy to become more powerful and widely recognized, the profession should encourage occupational therapy entrepreneurship. Anderson & Nelson (2011), interviewed several occupational therapy practitioners, who are innovators and



entrepreneurs. Many interviewees agreed that occupational therapy practitioners are well positioned to pursue entrepreneurship because of the fundamental nature of their service: making a match between complex people and complex environments so that function and positive adaptation are maximized (Anderson & Nelson, 2011). Although this may be true, occupational therapy practitioners are not as involved in entrepreneurial opportunities as other healthcare professionals (Anderson & Nelson, 2011). During their interviews, Anderson and Nelson found occupational therapy entrepreneurs overwhelmingly agree they received inadequate business education and limited professional support, which has led to increased self-learning (2011). Recommendations included: 1) revision of the ACOTE Education Standards to include entrepreneurship, 2) providing entry-level occupational therapy students desiring special business and entrepreneurial training access to relevant electives or tracks, 3) access to more continuing education courses specific to occupational therapy entrepreneurship, 4) the need for more entrepreneurial resources and opportunities from AOTA for its members, and 5) to develop a culture of entrepreneurship in which occupational therapy entrepreneurs share their successes and educate others (Anderson & Nelson, 2011).

Within the literature for this search question, two pieces of literature were found documenting the inclusion of innovation, leadership, and entrepreneurship in graduate curricula (Copolillo et al., 2010; Kerr et al. 2015). A five course leadership series was developed in the post-professional doctorate program at Virginia Commonwealth University (VCU) to enhance leadership skills that extend beyond the boundaries of occupational therapy practice (Copolillo et al., 2010). In this course series, an emphasis is

placed on the development of innovative programs from start to finish including developing fundable projects, presenting a formal proposal to community stakeholders, and implementation in the community (Copolillo et. al., 2010). A seminar held at the Annual Conference and Exhibition of the College of Occupational Therapists in England discussed the development of an innovative curriculum to develop entrepreneurial and employability skills at the University of Derby in the United Kingdom, where students conduct a literature review and occupational analysis, and prepare a business plan to organize a volunteer opportunity of their choice (Kerr et al., 2015). Traditionally, a conference seminar abstract would not be noteworthy in a literature search of this nature, however the mere visibility of this abstract within the literature alludes to the extremely small body of available evidence on innovation, leadership, and entrepreneurship in occupational therapy curricula.

The cumulation of the AOTA literature reviewed through this literature search also strongly supports the need for innovation and leadership within the profession, and makes a case for a greater “paradigm shift” in the way we think as occupational therapy practitioners and in the methodologies included in graduate occupational therapy curricula (Anderson & Nelson, 2011; Braveman, 2016; Hinojosa 2007; Hinojosa, 2012; Lamb, 2016; Lamb, 2017; Lamb, 2018; Leland et al. (2015); Mitcham, 2014; Moyers, 2005; Stoffel, 2015). There is a need to advance occupational therapy education to include more innovative approaches open-mindedness to new ways of thinking, and to create a professional culture that encourages exploration, curiosity, and creativity (Lamb, 2016; Lamb, 2017; Lamb, 2018; Mitcham, 2014; Moyers, 2005; Stoffel, 2015). Graduate

education should equip practitioners with the skills needed to address the complex needs of populations (Braveman, 2016; Lamb, 2016; Lamb, 2017; Lamb, 2018; Stoffel, 2015), and change the status quo (Lamb, 2016; Mitcham, 2014). There is a need to collaborate with subject matter experts outside of healthcare, such as with software developers (Leland et al., 2015) or product designers (Stoffel, 2015). There is a need to embed leadership, innovation, and entrepreneurship into graduate curricula in order to meet the ever- changing needs of complex systems and populations.

A large limitation of this literature search is the significant lack of evidence that: 1) clearly defines innovation and leadership specific to occupational therapy (Heard, 2014), and 2) documents the effectiveness of innovative approaches in graduate curricula. Only two of the articles retrieved through the literature search provide evidence of these skills being incorporated into occupational therapy curricula, one of which was a conference abstract in the United Kingdom (Copolillo et al., 2010; Kerr et al., 2015). Due to the visionary and “call to action” nature of the majority of the publications this literature search yielded, one can argue that leadership and innovative ways of thinking must not only be integrated into occupational therapy curricula, but that there is also a critical need for the outcomes of innovative teaching approaches in graduate programs to be documented within the literature.

Despite the variety of publication forms found through this literature search, there appears to be a unanimous agreement over the last decade that there is an increasing demand for leadership and innovation in occupational therapy (Anderson & Nelson, 2011; Braveman, 2016; Copolillo et al., 2010; Heard, 2014; Hinojosa, 2007; Hinojosa,

2012; Kerr et al., 2015; Lamb, 2016; Lamb, 2017; Lamb, 2018; Leland et al., 2015; Mitcham, 2014; Moyers, 2007; Stoffel, 2015). In fact, the literature reviewed suggests beyond an increased demand for innovation and leadership there is a sense of urgency—it is imperative to the future of the occupational profession (Anderson & Nelson, 2011; Hinojosa, 2007; Moyers, 2007; Lamb; 2018).

**2. Is there evidence that entry-level occupational therapy students have limited exposure to innovation and entrepreneurship in graduate school?** The first step in this search was to review the AOTA’s *Blueprint for Entry-Level Education*, which serves as a curriculum content guide and outlines key topics required in every entry-level graduate occupational therapy program (AOTA, 2010). “Business Fundamentals”, a requisite for entrepreneurship, are listed within *Professional and Interpersonal Factors* (p.194, Section IV, AOTA, 2010). “Entrepreneurial skills” were listed among the “Skills” associated with *Business Fundamentals*. These “Skills” also included the following: Critical thinking, reflection, and problem-solving skills; emerging areas of practice; undertakes self and business assessment to identify opportunities; possesses cognitive astuteness, technical expertise, and emotional intelligence to create success; uses analytical skills to assess business concepts and create clear vision and implementation strategies; flexibility and commitment; policy and legal framework analysis; and advocacy (p.194, Section IV, AOTA, 2010).

The concept of “innovation” was not explicitly discussed within the *Blueprint for Entry-Level Education*. However some may argue that “innovation” could be implicitly applied through other “Skills” and “Concepts” relevant to: 1) *Communication*: Conflict

resolution, teamwork, communicating with lay audiences; and 2) *Professional Development*: Lifelong professional development, applies analytical reasoning in order to choose or create alternative solutions to clinical problems; uses analytical skills to adapt evidence-based guidelines to unique and novel situations ( p.193, Section IV, AOTA, 2010).

***Evidence of innovation and entrepreneurship in graduate curriculum.*** The literature search (2) described previously was then conducted to determine to what extent entrepreneurship was documented in the occupational therapy literature, which yielded extremely limited results, see *Appendix C*. This search yielded several articles previously found relevant to Factor 1, two articles discussing innovation (Brandt, 2014; Collins, Harrison, Mason, & Lowden, 2011) and two discussing entrepreneurship (Latcher & Szymanska, 2016; McClure, 2011).

Entrepreneurship, as well as interprofessional competencies, are necessary to meet the changing needs of clients and enhance occupational therapy's leadership in healthcare (McClure, 2011; Latcher & Szymanska, 2016). Entrepreneurs and occupational therapy practitioners share similar traits, in that they are opportunity focused, risk-takers, resourceful, are innovators who see opportunities when faced with problems, and have an ongoing desire to add value to people's lives (McClure, 2011). Entrepreneurship has historically been interpreted as starting a new business, but the ultimate goal is teaching students to adopt the "entrepreneurial mindset" and be an agent of change (McClure, 2011). In an increasingly tough employment market, social entrepreneurship is vital for occupational therapy graduates; it can allow them to

demonstrate essential leadership skills in order to secure a job (McClure, 2011). While McClure (2011) described the importance of developing entrepreneurial skills in occupational therapy students, she did not provide evidence of the effectiveness of such curricula, or provide concrete suggestions for educators.

Latchter & Szymanska (2016) developed an eight-week learning activity where graduate occupational therapy and undergraduate management students worked in teams to apply learned entrepreneurial concepts, and create a business plan to develop a new healthcare service meeting an unmet need. Evaluation of this activity revealed significant changes in the pre- and post- testing using their researcher developed Entrepreneurship Concept Learning (ECL) assessment, and eighty percent of participating students found this activity to be “helpful” or “very helpful” (Latchter & Szymanska, 2016).

Two relevant examples of “innovation” in occupational therapy education were found. Collins et. al (2011), provided an example of an innovative six-week creative project that provided 3rd year occupational therapy graduate students in Australia with the opportunity to explore the complexities and interactions between theories of occupational science and the use of creative media. Under the presumption that learning and authentic engagement are more likely to occur if students connect with the subject and it has interest to them, this project enabled students to have 72 hours of self-directed, diverse learning experiences with weekly mentorship. By linking creativity to the study of human occupation, students developed a stronger professional identity through this program (Collins et. al, 2011).

Brandt (2014), provided a different example of innovation within a rural

occupational therapy assistant program. by developing a novel approach to program design with the primary goal of promoting economic development in rural communities. In order to optimize retention of health professionals in rural areas, the Missouri Health Professions Consortium (MHPC) developed collaborative partnerships with local employers of occupational therapy practitioners to develop curriculum content specific to the needs of the local community (Brandt, 2014). Brandt demonstrated sustainable innovation in MHPC's OTA program by identifying a need for this change, developing strategic partnerships, modifying curriculum based on current needs, and engaging local students through experiential learning in their rural community (2014). Although Collins et al. (2011) and Brandt (2014) are two very different examples of innovation in occupational therapy education, they both demonstrate incorporation of experiential learning through innovative curricula through inclusion of self-directed creative projects (Collins et al., 2011) and developing a sustainable and prepared workforce in rural areas through community partnerships (Brandt, 2014).

***Innovation and entrepreneurship in top 10 occupational therapy graduate programs.*** Next, an internet search was conducted to determine to what extent innovation and entrepreneurship is included in current coursework offered at the top ten entry-level graduate programs in the United States (U.S. World Report, 2016). Available information and course abstracts from these universities is summarized in *Appendix C*.

This search revealed that only two of the top 10 graduate programs explicitly mention entrepreneurship in their curriculum abstracts (Boston University, n.d.; Jefferson College of Rehabilitation Sciences, n.d.) and three implicitly describe inclusion of

entrepreneurship in their curriculum (i.e. business fundamentals, marketing, financial planning) (Tufts University, n.d.; USC Chan Division of Occupational Science and Occupational Therapy, n.d.; University of Illinois at Chicago, n.d.).

Review of these curricula revealed that Thomas Jefferson University had the strongest innovative and explicitly entrepreneurial curriculum. Offering *OT815 Emerging Practice & Entrepreneurship*, where students apply entrepreneurial framework to developing the role of occupational therapy in health maintenance and promotion... to develop programs for non-traditional practice settings (Jefferson College of Rehabilitation Sciences, n.d.). Most notably however, they offer an *Advanced Practice Certificate: Using Design in Healthcare Delivery*, which provides post-professional OTD students with the option to enroll in this certificate program and directly apply its credits towards their degree (Jefferson College of Rehabilitation Sciences, n.d.). This certificate program includes four courses: *Design Approaches in Healthcare*, *New Methods for Assistive Technology Creation*, *Scaling Up and Finding a Market*, and *Quality Improvement through Design* (Jefferson College of Rehabilitation Sciences, n.d.).

**Conclusion.** In summary, the AOTA Blueprint for Education (2010) suggests “*Entrepreneurial skills*” and “*Business Fundamentals*” are taught in graduate occupational therapy programs, however the evidence literature documenting occupational therapy graduate students’ exposure to entrepreneurship is quite limited. Only three pieces of literature were found documenting the effectiveness of curriculum including entrepreneurship (Latcher & Szymanska, 2016) and innovation (Brandt, 2014; Collins et al., 2011). The internet search of the top 10 occupational therapy graduate



program curricula revealed that only 5 out of 10 programs mention “entrepreneurship” or imply “business fundamentals” are being taught to occupational therapy graduate students (Boston University, n.d.; Jefferson College of Rehabilitation Sciences, n.d.; Tufts University, n.d.; USC Chan Division of Occupational Science and Occupational Therapy, n.d.; University of Illinois at Chicago, n.d.).

This research report found limited evidence that occupational therapy students are explicitly exposed to entrepreneurship and innovation in graduate programs (Brandt, 2014; Collins et al., 2011, Latchter & Szymanska, 2016). This immensely limited body of evidence inversely supports the claim that occupational therapy students have limited exposure to innovation and entrepreneurship in graduate school.

**3. Is there evidence that examples of occupational therapy practitioners’ entrepreneurial success are not well-documented, defined or discussed?** As shown previously, there is an extremely small body of published literature on entrepreneurship in occupational therapy. The literature search described previously was expanded to include “critical thinking” and “strategic planning” to determine if entrepreneurial practitioners were publishing research on innovative practices, but not explicitly defining it as entrepreneurship, see *Appendix C.* Further investigation of “critical thinking” literature was found irrelevant to this question, totaling five relevant articles (Deisher, 2013; Foto, 1998; Gilbert & Hunt, 2017; Holmes & Scaffa, 2009; Stickley & Hall, 2017).

Over 20 years ago, Foto (1998), argued that practitioners' ambitions are increasingly exceeding that of successful clinical practice. Although the role of the entrepreneur is gaining increasing interest, the necessary competencies are little

understood and not well-defined within the profession (Foto, 1998). Furthermore, the number of practitioners engaging in entrepreneurial pursuits is not well-documented in the literature, or through employee surveys (Foto, 1998). When functioning in an entrepreneurial capacity on behalf of hospitals, clinics, institutions, and the companies they work for, few practitioners are cognizant of being in that role, and may not use the label “entrepreneur” to describe themselves or their activities (Foto, 1998). For instance, if a practitioner launches a community-based program or begins to provide services in a new way, they may see themselves merely as someone driven by desire to advance the profession (Foto, 1998). As a result, practitioners tend to perceive themselves simply as allied health professionals who have discovered opportunities to practice occupational therapy in new contexts, when in reality they have stepped into the role of an entrepreneur (Foto, 1998).

Practitioners must stay relevant and equipped to address emerging areas of practice. Evidence has shown that entrepreneurship, community collaboration, and program development are critical competencies for addressing new practice areas (Holmes & Scaffa, 2009; Gilbert Hunt, 2017). In order to develop innovative solutions in practice, practitioners must develop partnerships in order to understand the ever-changing needs of consumers (Gilbert Hunt, 2017).

In order to set the precedent of innovation for future practitioners, the occupational therapy profession needs to celebrate innovative work done across the continuum of care (Foto 1998; Gilbert Hunt, 2017). This may encourage practitioners to use their occupational knowledge to create systems, and start businesses that grow in

collaboration with the consumer (Gilbert Hunt, 2017).

One example of disruptive innovation through partnerships in practice is the development of “Hireup”™, a national online platform that enables people with disabilities to select and manage their own support workers who have similar interests, that was co-founded by an occupational therapist (Gilbert Hunt, 2017). However, it is important to note that in the literature examples such as this were not explicitly labeled as entrepreneurship (Foto, 1998; Gilbert Hunt, 2017).

Two other examples of implicit entrepreneurship in practice were revealed through this literature search (Deisher, 2013; Stickley & Hall, 2017). Deisher (2013), an occupational therapist and certified hand therapist (CHT) describes a program she developed for patients with carpal tunnel and cubital tunnel by stepping into a leadership role and using a systematic approach for program development (SWOT analysis) to facilitate a ‘systems change’. She argues that in order to continue to facilitate systems change within organizations, more leaders must initiate the development of programs through strategic planning (Deisher, 2013). In her research, Deisher assumed the role of an entrepreneur by developing her program and urged practitioners to do the same. However, not once did she identify her innovations as entrepreneurship or identify herself as an entrepreneur.

Similarly, in their exploratory study, Stickley & Hall (2017) collected data from eight occupational therapy practitioners working within social enterprises to launch community programs in the UK. This study revealed that these occupational therapy practitioners experienced job satisfaction and professional autonomy, however these

authors did not acknowledge them as social entrepreneurs (Stickley & Hall, 2017).

**Conclusion.** The summation of this literature reveals a common theme in support of this research question: occupational therapy practitioners are developing innovative technologies, products, services, and programs; however, these achievements are seldom recognized explicitly as entrepreneurship (Deisher, 2013; Foto, 1998; Holmes & Scaffa, 2009; Gilbert Hunt, 2017; Stickley & Hall, 2017). Developing a program to address community and population-based needs through program development are indeed acts of entrepreneurship, however within the occupational therapy literature it appears they are not explicitly defined as such. It can be argued that if innovative practitioners are developing new products, services, or solutions to address complex problems for client populations and not defining these as acts of entrepreneurship, occupational therapy practitioners may not identify as entrepreneurs or be aware of their entrepreneurial potential.

### **Summation of the Evidence in Response to Research Questions**

Answers to the three proposed research questions were affirmative: there is evidence, or lack thereof, that supports each element of this explanatory model.

Currently, the literature provides evidence that need for occupational therapy entrepreneurs is growing, and practitioners demonstrating entrepreneurship may not identify as entrepreneurs. While there is limited evidence available on the inclusion of innovation and entrepreneurship in occupational therapy education, there is an increasing demand for it. Furthermore, the desire of the profession to articulate its role in addressing the “Triple Aim” of Healthcare and addressing the needs of *Population Health*, further

justify the need for an innovative entrepreneurial curriculum developed for occupational therapy practitioners.

### **Implications for Evidence Base to Support the Project**

In order to gather more information about current methods and approaches to innovative entrepreneurial instruction and previous attempts to address the problem, it is suggested that an internet search including common occupational continuing education (CE) provider websites first be conducted to examine current continuing education courses available relevant to entrepreneurship for occupational therapy practitioners. If courses similar to the one proposed exist, it is possible they have not documented in the evidence literature.

It is also suggested that the evidence for entrepreneurship education best practices be reviewed beyond occupational therapy entrepreneurship. This should include an evidence search for allied health and healthcare entrepreneurship education, as well as current innovative trends in the broad topic of entrepreneurship education.

### **Section Three: Synthesis of Current Approaches and Methods**

#### **Existing CE Courses on Innovation and Entrepreneurship**

To investigate what continuing education courses on innovation and entrepreneurship are currently available to occupational therapy practitioners, two search strategies were employed: 1) investigating popular CE providers: AOTA Learning Portal, Summit Education, and Occupationaltherapy.com with the keywords “entrepreneur”, “innovation”, “business”, and “private practice” and 2) an internet search for “occupational therapy entrepreneur online course” and “allied health entrepreneur online

course”.

Within the AOTA learning portal, no courses on entrepreneurship or private practice were found. One “business” course, “Setting up a Home Modifications Business” was found (Ainsworth & Wagenfeld, 2016). No relevant courses were found on Summit Education. On Occupationaltherapy.com, three courses on entrepreneurship were available: Entrepreneurship for the OT Professional (Covell-Pierson, n.d.), The Mindset of a Social Entrepreneur (Knowlton, n.d.), and Assistive Technology: From Design to Market (Knowlton, n.d.), and two on private practice: Starting a Private Practice Part 1 & 2 (Kornblau, n.d.; Kornblau, n.d.).

The internet search for “occupational therapy entrepreneur online course” and “allied health entrepreneur online course”, which yielded three more online courses: “Wanted: Innovative and Out of the Box Entrepreneurs in Occupational Therapy (Richardson, 2019), Growing potential: Creating a sustainable, flourishing business (Gash, n.d.), and Certificate in starting your own business in health and healing (Crossroads Hospice, n.d.). Upon further investigation, Richardson (2019) was determined to be a “live interactive course” and not delivered online. However, its content and course objectives will still be reviewed due to the limited number of available courses. It should be noted “private practice” was not included in this internet search, because the content of this proposed project is fundamentally different than that needed to start a private practice.

Due to the small number of CE courses available to occupational therapy practitioners on innovation and entrepreneurship, the *Advanced Practice Certificate for*

*Healthcare Professionals: Using Design in Healthcare Delivery* offered at Thomas Jefferson University (TJU) will also be reviewed (TJU, n.d.). Common curriculum themes from these courses will be discussed next.

**Occupational therapy and entrepreneurship.** Of the nine courses reviewed, six of them discussed the role of the entrepreneur in occupational therapy. Two courses discussed different types of entrepreneurship (i.e. social entrepreneurship) and the entrepreneurial mindset (Knowlton, n.d.; Richardson, 2019). Richardson (2019) also discussed the history of innovation and entrepreneurship in occupational therapy, as well as opportunities for entrepreneurship in emerging areas of practice. The three courses on starting a home modifications business or private practice did not discuss the role of the occupational therapy entrepreneur (Ainsworth & Wagenfeld, n.d.; Kornblau, n.d.).

**Business planning.** Six courses discuss creation of a business plan (Ainsworth & Wagenfeld, n.d.; Covell-Pierson, n.d.; Crossroads, n.d.; Gash, n.d.; Kornblau, n.d.; Richardson, 2019). Five of the reviewed courses discussed 3 or more potential business models and implications for financing your business (Covell-Pierson, n.d.; Crossroads, n.d.; Gash, n.d.; TJU, n.d.; Richardson, 2019). Three discussed identifying the need for your business, including surveying the competitive landscape (Gash, n.d.), conducting a SWOT analysis (Covell-Pierson, n.d.), and needs assessment (Kornblau, n.d.). Five courses addressed marketing your business (Covell-Pierson, n.d.; Crossroads, n.d.; Gash, n.d.; Kornblau, n.d.; Richardson, 2019), and only one discussed the need to clearly articulate your unique value proposition (UVP) (Gash, n.d.).

**Use of design principles for innovation and entrepreneurship.** Two of these courses discussed how design principles can be a tool for innovation in occupational therapy (Knowlton, n.d.; TJU, n.d.). These two courses discuss occupational therapy's role on a design team, and the steps toward product development and design (Knowlton, n.d.; TJU, n.d.). The certificate program offered at TJU discusses the design-thinking process, integration of design approaches and methods into healthcare practice, and the benefits gained when healthcare professions expand their tool kit to include application of design concepts in their practice (TJU, n.d.).

### **Evidence Literature Review of Entrepreneurship Education**

Next, a literature review on entrepreneurship education was completed to gather information and evidence regarding current approaches and methods of instruction of entrepreneurship in healthcare and beyond. Based on the identified themes from previous attempts to address the problem, effectiveness of design-thinking as a teaching method for innovation and entrepreneurship is also explored.

### **Research Questions**

1. What methods and approaches are used to teach entrepreneurship education?
2. Is there evidence to support the use of design-thinking in entrepreneurship education?
3. Is there evidence to support the delivery of entrepreneurship education through online learning?
4. Is there evidence to support the use of Adult Learning Theory in online learning, and/or entrepreneurship education?



## **Search Strategy**

Whenever possible, the search was centered on allied health or healthcare students, online learning, and adult education. Otherwise, evidence on graduate entrepreneurship education was reviewed. Evidence was compiled related to many types of entrepreneurship education, including curriculum content, teaching methods, implications for allied health students, use of adult learning theory, social entrepreneurship, as well as implications for online learning. This information will be used to inform the creation of this proposed project (See Chapter 3 for a full description).

The keywords “entrepreneurship education”, “social entrepreneur”, “teaching methods” “curriculum”, “systematic review”, “meta-analysis” were searched to build an understanding of teaching methods and curriculum in entrepreneurship education. Keywords “healthcare”, “nursing”, and “allied health” were also used to find literature relevant to entrepreneurship education in healthcare. Keywords “entrepreneurship education”, “social entrepreneur”, “design-thinking”, and “innovation” were used to find evidence regarding design-thinking as a methodology to teach entrepreneurship. Combinations of keywords “adult learning theory”, “andragogy”, “entrepreneur education”, and “online learning” were used to find evidence regarding the use of Adult Learning Theory in entrepreneurship education. Keywords “online education” “online learning”, “digital learning”, “entrepreneurship education”, and “design-thinking” were explored to find evidence to support delivery of the proposed course in an online format.

Searches were conducted using the engines Academic Search Premier, Business Source Complete, CINAHL, Education Full Text (H.W. Wilson), Google Scholar, and

specific journals related to entrepreneurship (i.e. Journal of Entrepreneurship Education).

Literature was reviewed and chosen based on 1) relevance to adult learning, 2) strong synthesis of existing literature (i.e. preference toward systematic reviews), 3) less than 10 years old, and 4) provision of practical applications for course design. Within each of the search question summaries, key themes will be drawn and summarization of evidence on teaching methods and curriculum specific to healthcare professionals will also be summarized.

### **Summary of Relevant Entrepreneurship Education Evidence**

**1. What methods and approaches are used to teach entrepreneurship education?** Entrepreneurship education is one of the fastest growing fields of education globally (Higgins, Smith & Mirza, 2013; Sirelkhatim & Gangi, 2015; Mehta, Yoon, Kulkarni, & Finch, 2016; Miller, Wesley, Williams, 2012; Vakili, Tahmasebi, Tahmasebi, & Tahmasebi, 2016). In entrepreneurship research, less focus has been placed on effective teaching methods due to the ambiguity around the concept of entrepreneurship and the individualistic approach to the entrepreneurial process (Boore & Porter, 2011; Higgins et al., 2013; Salminen et al., 2014). There is also debate amongst scholars if the “entrepreneurial mindset” or entrepreneurial thinking can be taught (Salminen et al., 2014). As a result, there is little evidence supporting the use of specific teaching methods in entrepreneurship education across all disciplines (Sirelkhatim & Gangi, 2015; Mehta et al., 2016). However, there seems to be a general agreement that a traditional pedagogical approach alone is not a suitable teaching method for the complexities of entrepreneurship (Arnaert et al., 2017; Boore & Porter, 2011; Higgins et

al., 2013; Niccum et al, 2017; Mehta et al., 2016; Miller et al., 2012; Salminen et al., 2014; Sirelkhatim & Gangi, 2015).

A thematic analysis of entrepreneurship education research in regard to 1) teaching methods in entrepreneurship education, 2) curriculum themes in entrepreneurship education, 3) social entrepreneurship education, and 4) entrepreneurship education for healthcare professionals is provided next.

***Teaching methods in entrepreneurship education.*** Research strongly suggests that entrepreneurial learning is more likely to occur through active learning or learning by doing (Higgins et al., 2013; Salminen et al., 2014; Sirelkhatim & Gangi, 2015; Martin, Mazzeo & Lemon, 2016; Mehta et al., 2016; Niccum et al., 2017). This is specifically true for adult learners to enable problem-solving, self-reliance, and self-reflection (Sirelkhatim & Gangi, 2015). Additionally, many non-traditional teaching methods have become more common due to the inherently practical and creative process of entrepreneurship (Higgins et al., 2013; Mehta et al., 2016; Martin et al., 2016).

Methods of teaching discussed within the literature include experiential learning (Higgins et al., 2013; Martin et al., 2016; Mehta et al., 2016; Sirelkhatim & Gangi, 2015), interdisciplinary teaching (Martin et al., 2016; Niccum et al., 2017), group projects (Boore & Porter, 2011; Niccum et al., 2017; Martin et al., 2016; Mehta et al., 2016; Salminen et al., 2014; Sirelkhatim & Gangi, 2015; Salminen et al., 2014), case studies and simulations (Boore & Porter, 2011; Martin et al., 2016; Mehta et al., 2016; Salminen et al., 2014; Sirelkhatim & Gangi, 2015), field visits (Mehta et al., 2016; Niccum et al., 2017; Salminen et al., 2014) interactive projects or internships with existing businesses

(Niccum et al., 2017; Mehta et al., 2016; Sirelkhatim & Gangi, 2015), and guest lectures (Martin et al., 2016; Mehta et al., 2016; Salminen et al., 2014; Sirelkhatim & Gangi, 2015).

The evidence also suggests that providing opportunities for reflection can enhance learning experiences (Higgins et al., 2013; Sirelkhatim & Gangi, 2015; Vakili et al., 2016). Inclusion of peer to peer feedback is also valuable (Sirelkhatim & Gangi, 2015).

***Curriculum themes in entrepreneurship education.*** Entrepreneurship education can be divided into three categories (Pache & Chowdhury, 2012; Sirelkhatim & Gangi, 2015): 1) “About” entrepreneurship: a primarily theoretically-based approach to build awareness of entrepreneurship, encourage students to pursue entrepreneurship and self-employment, 2) “For” entrepreneurship: a skill-based approach to enhance students’ entrepreneurial knowledge and intentions, and encourage students to pursue entrepreneurship in the future, and 3) “Through” entrepreneurship: where students develop real innovative ideas, perhaps through internships with existing businesses, or their own ideas from research to pitching to investors (Pache & Chowdhury, 2012; Sirelkhatim & Gangi, 2015). Recent trends in entrepreneurship education emphasize the need to move away from “about entrepreneurship”, and shift towards instilling students with the personal skills, attributes, and behaviors needed in order to be successful entrepreneurs (Pache & Chowdhury, 2012).

It is not uncommon for a single entrepreneurship course or program to include more than one type of entrepreneurship education. Within this literature search, two articles were found specifically “About” entrepreneurship (Eddy & Stellefson, 2009;

Salminen et al., 2014), two contained information on both “About” and “For” entrepreneurship (Boore & Porter, 2011; Martin et al., 2016) and two contained coursework incorporating all three (Mehta et al., 2016; Niccum et al., 2017).

Within the literature, “creating a business plan” is the most commonly mentioned topic within entrepreneurship education (Boore & Porter, 2011; Eddy & Stellefson, 2009; Martin et al., 2016; Miller et al., 2012; Salminen et al., 2014; Sirelkhatim & Gangi, 2015), and is often a step students are taught to do early on in their business ventures. However, within the literature there has been a debate regarding the completion of a formal business plan early one’s venture (Parris & McInnis-Bowers, 2017; Sirelkhatim & Gangi, 2015). Rather, some researchers suggest that it is important to acknowledge the unpredictability of the future by imagining all possible solutions, testing hypotheses and assumptions, researching market needs and readiness, and discussing your venture with future consumers before developing a business plan (Eddy & Stellefson, 2009; Niccum et al., 2017; Parris & McInnis-Bowers, 2017; Sirelkhatim & Gangi, 2015).

Other curriculum topics included introductory entrepreneurship knowledge through basic business concepts (e.g., marketing, financing, business modeling, building teams) (Eddy & Stellefson, 2009; Martin et al., 2016; Niccum et al., 2017; Salminen et al., 2014), discussion of entrepreneurial traits (Boore & Porter, 2011; Sirelkhatim & Gangi, 2015), opportunity recognition (Eddy & Stellefson, 2009; Martin et al., 2016; Miller et al., 2012; Niccum et al., 2017), and ideation exercises (Mehta et al., 2016, Niccum et al., 2017).

Inclusion of topics such as conducting market research (Eddy & Stellefson, 2009;

Martin et al., 2016; Miller et al., 2012; Mehta et al., 2016), positioning your business, product, or service in the marketplace (Eddy & Stellefson, 2009; Niccum et al., 2017; Salminen et al., 2014), financing your venture (Miller et al., 2012; Mehta et al., 2016; Niccum et al., 2017), creating financial projections (Martin et al., 2016; Miller et al., 2012; Niccum et al., 2017), prototyping (Niccum et al., 2017), protecting intellectual property (Mehta et al., 2016), communication/ presentation skills (Martin et al., 2016; Niccum et al., 2017; Mehta et al., 2016; Vakili et al., 2016), forming an effective team (Eddy & Stellefson, 2009; Miller et al., 2012; Martin et al., 2016; Niccum et al., 2017), and forming a business pitch to convey an idea (Martin et al., 2016; Niccum et al., 2017) were also discussed within the literature.

***Social entrepreneurship education.*** Within the literature, there is an increasing global demand for social entrepreneurship programs (Martin et al., 2016; Miller et al., 2012), and a lack of consensus regarding the concepts and competencies necessary for the social entrepreneur (Chou, 2018; Martin et al., 2016; Miller et al., 2012; Pache & Chowdhury, 2012; Parris & McInnis-Bowers, 2017). Several social entrepreneurship education competencies analyzed in Miller et al.'s (2012) systematic review aligned with those of standard entrepreneurship education. However, “innovation and creativity” as well as “desire and ability to create a significant social impact” were also determined to be two of the top 10 social entrepreneurship competencies (Miller et al., 2012).

Although social entrepreneurs do require opportunity and venture specific knowledge to seize new market opportunities, they also face different complexities and must develop a deep understanding of the social issues they intend to address (Pache &

Chowdhury, 2012). For instance, if the clients they intend to serve cannot afford their services, they must coordinate sustainable resource mobilization strategies (Pache & Chowdhury, 2012).

Teaching methods, approaches, and curriculum reviewed within the literature specific to social entrepreneurship included use of design-thinking to develop a social entrepreneurship project (Chou, 2018), collaborative innovation through human-centered design (Parris & McInnis-Bowers, 2017), and allowing students to apply innovative concepts to develop new ways to address a health problem of their choice (Martin et al., 2016).

Solving problems in order to add value to individual's lives is instilled within the core values of health professionals and social entrepreneurs. Building students' awareness of these parallels will provide them with the opportunity to see the direct value of entrepreneurship in practice (Boore & Porter, 2011; Martin et al., 2016).

***Entrepreneurship education for healthcare professionals.*** Entrepreneurship is becoming increasingly important within innovative developments in medical science, research, and policy— all attributing to the rapidly changing healthcare landscape (Boore & Porter, 2011; Niccum et al., 2017). As a result, there is an increasing need for more entrepreneurial thinking and healthcare leaders willing to challenge the status quo and change the current health provider culture in order to drive change and enhance the quality of care (Arnaert et al., 2018; Boore & Porter, 2011; Eddy & Stellefson, 2009; Salminen et al., 2014; Martin et al., 2016; Niccum et al., 2017; Vannucci & Weinstein, 2017).

Entrepreneurship provides opportunities for health providers to not only make a more significant impact, but also achieve greater career satisfaction, improved quality of life, and experience an enhanced sense of empowerment (Boore & Porter, 2011; Salminen et al., 2014; Vannucci & Weinstein, 2017). As entrepreneurship becomes increasingly necessary for innovation, opportunities for entrepreneurship for healthcare professionals will continue to expand (Arnaert et al., 2018; Boore & Porter, 2011; Eddy & Stollefson, 2009; Salminen et al., 2014; Martin et al., 2016; Niccum et al., 2017).

In an effort to improve the health of populations guided by the *Triple Aim*, there is also an increasing need for the development of health promotion and wellness programs (Martin et al., 2016). Inclusion of education “about” entrepreneurship to build students’ awareness of how entrepreneurship can enable them to be innovative change agents, and application of these concepts “for” and “through” entrepreneurship in graduate healthcare education can have the capacity to change the healthcare landscape (Boore & Porter, 2011; Martin et al., 2016; Niccum et al., 2017; Salminen et al., 2014). Investing more in the research and development of programs to address modifiable determinants of health may ultimately have a greater impact on community health than increasing access or quality of care (Martin et al., 2016).

Although there is an increasing need for entrepreneurship education, there is also a significant knowledge gap that needs to be addressed in allied health education (Arnaert et al., 2017; Salminen et al., 2014). One difficulty allied health professionals may face is the interpretation and understanding of business language and jargon, such as “venture capital”, or “market opportunity analysis” (Arnaert et al., 2017; Boore & Porter, 2011;



Salminen et al., 2014; Vannucci & Weinstein, 2017). Additionally, little attention has been paid to the delineation of “social entrepreneurship” or “intrapreneurship”, which may provide students with the opportunity to see how these skills will enable them to create a greater impact at their current practice settings (Boore & Porter, 2011; Salminen et al., 2014). The exclusion of entrepreneurship education in graduate curriculum perpetuates this problem and continues to churn out graduates unaware of the value of entrepreneurial thinking in leadership, and entrepreneurship as a career choice (Arnaert et al., 2017; Vannucci & Weinstein, 2017).

Furthermore, there appears to be an unspoken negative connotation around entrepreneurial providers, particularly in allied health. Employers are often not supportive of such professional growth, and people often respond negatively to the notion of entrepreneurial endeavors (Arnaert et al., 2017). Nurse entrepreneurs are confronted with the tension between a desire for professional growth, developing a business and generating profit, and provision of quality care (Arnaert et al., 2017). The “service mentality” has been an integral part of the nursing profession for so long (Arnaert et al., 2017; Vannucci & Weinstein, 2017), and the same can be argued for the occupational therapy profession. It is imperative that an introduction to innovative entrepreneurial concepts in entry-level education is made, and an option of further specialization in entrepreneurship is made available to those who wish to pursue it (Arnaert et al., 2017).

**2. Is there evidence to support the use of design-thinking in entrepreneurship education?** Recent studies have revealed that traditional pedagogical approaches used to teach entrepreneurship, focusing on business planning and management of a company,

may not foster the growth of entrepreneurial intention (Daniel, 2016; Linton & Klinton, 2019; Nielsen & Stovang, 2015). The entrepreneurial process is incredibly complex, and far from linear (Daniel, 2016; Linton & Klinton, 2019; Mosely, Wright, & Wrigley, 2018). An increased emphasis should be put on opportunity recognition, adaptation, and creation in anticipation of the unknown future, rather than writing a formal business plan when starting a new venture (Daniel, 2016; Linton & Klinton, 2019; Nielsen & Stovang, 2015). As a result, there has been a shift from traditional teaching practices towards a more holistic approach to entrepreneurship linking entrepreneurial learning with personal development (Daniel, 2016; Nielsen & Stovang, 2015). A possible way to do this is through the design-thinking approach (Daniel, 2016; Linton & Klinton, 2019; Nielsen & Stovang, 2015).

Design-thinking is a cross-disciplinary and human-centered approach to problem solving that emphasizes the importance of developing a deep understanding of peoples' needs in order to develop comprehensive and effective solutions, and increasingly being used across diverse professions (Daniel, 2016; Linton & Klinton, 2019; Roberts et al., 2016; Nielsen & Stovang, 2015). The literature makes a strong case for the alignment of design-thinking and entrepreneurial principles (Daniel, 2016; Linton & Klinton, 2019; Nielsen & Stovang, 2015). Several studies have shown the use of the design-thinking teaching methodology as an effective approach to developing entrepreneurial potential (Linton & Klinton, 2019; Mosely et al., 2018; Nielsen & Stovang, 2015).

Connecting entrepreneurship education with design-thinking creates opportunities for students to learn “through” entrepreneurship (Linton & Klinton, 2019). By

participating the design-thinking process, students are able to develop entrepreneurial skills more focused on creativity, collaboration, and problem-solving (Linton & Klinton, 2019).

Instructors of design-thinking shift away from “teaching” and toward “facilitating” learning, enabling discussion and collaboration amongst students, and encouraging a creative approach to problem solving that generates novel ideas (Linton & Klinton, 2019; Mosely et al., 2018; Nielsen & Stovang, 2015). Course facilitators guide groups of students through the 5 stages of the design-thinking process: 1) Empathize: use of interviews and observation to collect objective data on the users’ needs, not developing assumptions or solutions too soon, 2) Define: analysis of observational findings and synthesize them to define the problem, 3) Ideate: rapid brainstorming of potential solutions where creativity and “out of the box” thinking is encouraged, 4) Prototype: a few ideas are chosen and prototyped very quickly (i.e. sketched, constructed with paper and tape) in order to gain feedback, and 5) Test: where users are presented with prototypes in order to collect feedback (Beaird, Geist, & Lewis, 2018; Daniel, 2016; Linton & Klinton, 2019; Mosley et al., 2018; Nielsen & Stovang, 2015). This feedback is then integrated, and a new prototype is developed to gain additional feedback. This continuous cycle of prototyping, testing, and integrating user feedback is called a feedback loop, and is a key feature of the design-thinking process (Daniel, 2016).

***Design-thinking in healthcare education.*** Within healthcare education, design-thinking is also being incorporated into a variety of courses including nursing education (Beaird, Geist, & Lewis, 2018), medical school (Niccum et al., 2017), and

interdisciplinary health education courses (Van de Grift & Kroeze, 2016) as a tool to build creative problem solving and empathy. In practice, design-thinking is also an effective framework for improving patient-centered care, fostering a culture of care for patients, families, and staff (Carmel-Gilfilen & Portillo, 2016; Van de Grift & Kroeze, 2016).

At the foundational level design-thinking is concerned with human needs and solving problems (Linton & Klinton, 2019), making it extremely well-suited as an approach to entrepreneurship education for healthcare professionals. Developing empathy for the desired clients or users, participation in radical interdisciplinary collaboration, and engaging in rapid prototyping are core tenets of design thinking that can help solve some of healthcare's greatest and most complex problems (Beaird et al., 2018; Carmel-Gilfilen & Portillo, 2016; Van de Grift & Kroeze, 2016).

**3. Is there evidence to support the delivery of entrepreneurship education through online learning?** Today's classrooms are highly connected and provide both teachers and students more efficient and affordable ways to access information and resources for learning (Al-Atabi & DeBoer, 2014; Vorbach, Poandl & Korajman, 2019; Welsh & Dragusin, 2013). Online learning, also known as digital education, enable more students access to valuable information, such as entrepreneurship education, at a large scale (Al-Atabi & DeBoer, 2014; Anders, 2015; Casile, Lane, & Heriot, 2014; Vorbach et al., 2019; Welsh & Dragusin, 2013). The emergence of Massive Open Online Courses (MOOCs), scalable online courses available on demand, are changing the way online students engage with one another and the way they learn by providing on-demand

interactive content, particularly in entrepreneurship education (Al-Atabi & DeBoer, 2014; Anders, 2015; Vorbach et al., 2019; Welsh & Dragusin, 2013).

The evidence reviewed supports the use of online learning platforms and MOOCs for entrepreneurship education (Al-Atabi & DeBoer, 2014; Anders, 2015; Casile et al., 2014; Vorbach, Poandl, Korajman, 2019; Welsh & Dragusin, 2013). Effective key features of online entrepreneurship education noted in the literature include providing “project pit stops” where students are given feedback and guidance on project progress (Al-Atabi & DeBoer, 2014; Welsh & Dragusin, 2013), providing opportunities for self-quizzing at the end of course modules (Al-Atabi & DeBoer, 2014; Welsh & Dragusin, 2013), providing opportunities peer to peer feedback on assignments (Casile et al., 2014; Welsh & Dragusin, 2013), use of video instruction focusing on specific knowledge points or case examples (Al-Atabi & DeBoer, 2014; Anders, 2015; Vorbach et al., 2019; Welsh & Dragusin, 2013), collaborative learning through communication in active discussion forums by asking questions and sharing resources (Al-Atabi & DeBoer, 2014; Casile et al., 2014; Welsh & Dragusin, 2013), group assignments (Al-Atabi & DeBoer, 2014; Casile et al., 2014), and small daily reflections to inspire creativity and lower the threshold for active participation (Al-Atabi & DeBoer, 2014; Anders, 2015).

Noted limitations of online entrepreneurship education include less interaction with peers and instructors (Vorbach et al., 2019; Welsh & Dragusin, 2013), necessity of self-discipline for completion (Al-Atabi & DeBoer, 2014; Vorbach et al., 2019), and low rates of completion if not provided with incentive (Welsh & Dragusin, 2013).

#### **4. Is there evidence to support the use of adult learning theory in online**

**learning?** The demands of online education require educators to be prepared to facilitate learning in ways that are very different than those of the traditional classroom (Blondy, 2007). Allowing learners to identify their own specific learning goals and promoting organic communication through social discussion channels will allow adult learners to be self-directed (Anders, 2015; Blondy, 2007; Frey & Alman, 2013). Curriculum and assignments should be flexible to allow the learner to accomplish their individual goals within the course framework (Anders, 2015; Blondy, 2007; Frey & Alman, 2013). Coursework should take a process-oriented approach, encouraging learners to build upon past experiences through application of learned concepts, and encouraging them to discuss their work with classmates through projects and interactive discussions (Anders, 2015; Blondy, 2007; Frey & Alman, 2013). Learners should also receive frequent acknowledgement or praise for their contributions to the class in order to maintain motivation (Blondy, 2007; Frey & Alman, 2013).

Online course facilitators understand their students' needs, backgrounds, characteristics, and expectations (Blondy, 2007). Clear expectations regarding online communication should be made to foster online engagement, and curriculum and assignments should be designed for flexibility and welcome learner input (Blondy, 2007; Frey & Alman, 2013). Additionally, it is suggested that consistency within course organizational format be maintained, and a variety of learning styles be considered when developing an online course (Frey & Alman, 2013).

## **Summation of the Current Methods, Approaches, and Evidence**

Although there is a relatively small body of evidence around best practices in entrepreneurial education, there appears to be a general consensus that a traditional pedagogical approach alone is not effective. The evidence suggests that entrepreneurship educators should shift toward application of entrepreneurial concepts, and include opportunities for experiential learning, group projects, and self-reflection. Entrepreneurship education should also provide a clear distinction between social entrepreneurship and intrapreneurship, and educate learners on creating financially sustainable ventures. Using a design-thinking approach in entrepreneurship education can help educators shift away from “teaching” and toward “facilitating” learning, enabling discussion and collaboration amongst students, and encouraging a creative approach to problem solving and generating novel ideas. At the foundational level, design-thinking is concerned with human needs and solving problems, making it extremely well-suited as an approach to entrepreneurship education for occupational therapy practitioners. Developing empathy for the desired clients or users, participation in radical interdisciplinary collaboration, and engaging in rapid prototyping are core tenets of design thinking that can help solve some of healthcare's greatest and most complex problems, including the *Triple Aim* and addressing the needs of *Population Health*. Given the ambiguous nature of entrepreneurship education and the level of self-motivation needed to succeed in becoming an entrepreneur, application of adult learning theory through an online learning environment are supported within the literature.

Furthermore, there are currently an extremely small number of CE courses

designed specifically for occupational therapy entrepreneurs which suggests a program such as *Embracing Entrepreneurship: Occupational Therapy's introduction* to design-thinking for innovation is needed now more than ever.



### **CHAPTER THREE – Description of the Program**

This proposed program *Embracing Entrepreneurship: Occupational therapy's introduction to design-thinking for innovation* is an online continuing education (CE) course that provides an introduction to the design-thinking process to occupational therapy practitioners in order to research and build innovative business solutions to problems they are passionate about solving. Design-thinking is a cross-disciplinary and human-centered approach to problem solving that emphasizes the importance of developing a deep understanding of peoples' needs in order to develop comprehensive and effective solutions, and is increasingly being used by health professions (Daniel, 2016; Linton & Klinton, 2019; Roberts et al., 2016; Nielsen & Stovang, 2015).

The results of the evidence literature search discussed in Chapter Two suggest that very few CE courses exist for occupational therapy entrepreneurs; and current “entrepreneurial” CE courses put heavy emphasis on business plan creation (Covell-Pierson, n.d.; Crossroads, n.d.; Gash, n.d.; Richardson, 2019). The literature also suggests that use of a design-thinking teaching methodology is an effective approach to developing entrepreneurial potential in self-guided adult learners (Linton & Klinton, 2019; Mosely et al., 2018; Nielsen & Stovang, 2015).

Furthermore, the evidence literature reviewed supports the problem that this program intends to address: occupational therapy practitioners may not be familiar with current methods and approaches to innovation and entrepreneurship, or be aware of their entrepreneurial potential (Arnaert et al., 2017; Deisher, 2013; Foto, 1998; Holmes & Scaffa, 2009; Gilbert Hunt, 2017; Stickley & Hall, 2017; Vannucci & Weinstein, 2017).

The purpose of the proposed course is to build entrepreneurial awareness in OT practitioners, provide education on the use of the design-thinking process in entrepreneurship, and provide opportunities to apply these concepts to develop innovative solutions: services, programs, or products. This course also aims to determine if the use of the design-thinking process is an effective tool for innovation and entrepreneurship within occupational therapy.

### **Methods of Delivery**

This course will be delivered on the online platform Thinkific, which was chosen for its ease of use and scalability. The course will consist of eight modules that include readings, multimedia content, weekly live discussions and assignments. The course modules are self-guided and can be completed at the learners' desired pace. The first two modules of this course will be offered as an open-source mini-course with rolling admission, and practitioners will be able to enroll for free. The full-length course will contain the remaining six modules. Should participants choose to enroll in the full-length course, enrollment will be offered on a quarterly basis. The course creator will also host weekly virtual discussions using the online video conferencing platform, Whereby. In these discussions, the creator will be a discussion facilitator and provide participants with an opportunity to discuss their progress with their classmates in small breakout discussions. The last 15 minutes will be reserved for Q&A with the course creator.

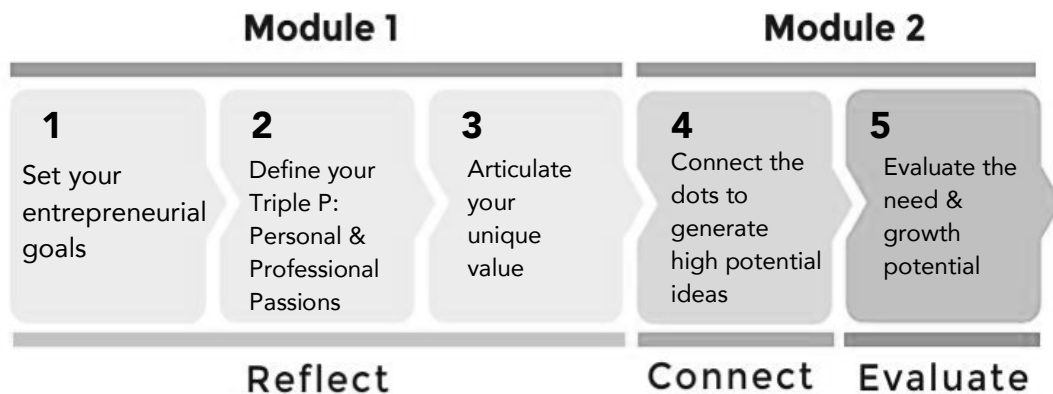
## Activities

### *Free Mini-Course*

Mini-course participants will be guided through this course creator's five-step process for OT entrepreneurial idea generation (*Figure 3.1*). This process includes three reflections, an opportunity to connect the dots to generate several business ideas, and to evaluate ideas before choosing one and launching a business. Upon enrollment in the course, participants will download a PDF workbook with five assignments, each corresponding to one step of this process. See Appendix F for examples of mini-course self-reflection exercises.

**Figure 3.1**

*Five-step process for OT entrepreneurial idea generation*



An outline of the mini-course content is provided in Table 3.1. In Module 1 of the mini-course, students will be guided through the first three steps of the author's process, a series of self-reflections to gain a better understanding of their reasons for pursuing entrepreneurship, their personal and professional passions, and their unique skills. In

Module 2, participants will learn about the traits that make a business successful (e.g., is there a need for it, is its profitability understood, you are passionate about it and qualified to start it). They will be provided with various examples of business models in occupational therapy, generate three “high potential” business ideas, and evaluate the need and growth potential for each new business idea. Should they choose to enroll in the full-course, participants will choose one business idea to research further and pursue.

**Table 3.1**

*Embracing Entrepreneurship mini-course outline*

<p><b>Embracing Entrepreneurship mini-course:</b>  <i>5 Step process for OT entrepreneurial idea generation</i></p>
<p><b>Introduction:</b></p> <ul style="list-style-type: none"> <li>● Welcome to the mini-course!</li> <li>● Why entrepreneurship? Why we need OT entrepreneurs now more than ever</li> <li>● Why you’re in the right place: Course overview &amp; what to expect</li> </ul> <p><b>Module 1: Your entrepreneurial blueprint</b></p> <ul style="list-style-type: none"> <li>● Your why: Why are you here? <ul style="list-style-type: none"> <li>○ <i>Self-Reflection #1: My entrepreneurial goals</i></li> </ul> </li> <li>● Your passion: Reflect on your personal and professional passions <ul style="list-style-type: none"> <li>○ <i>Self-Reflection #2: My triple P</i></li> </ul> </li> <li>● Your unique value: What do you bring to the table? <ul style="list-style-type: none"> <li>○ <i>Self-Reflection #3: My unique value as an OT Entrepreneur</i></li> </ul> </li> </ul> <p><b>Module 2: High potential ideas = High potential of success</b></p> <ul style="list-style-type: none"> <li>● Traits of high potential ideas</li> <li>● Connecting the dots: Channeling your unique value to generate high potential ideas you’re passionate about pursuing <ul style="list-style-type: none"> <li>○ <i>Assignment #4: High potential idea generation</i></li> </ul> </li> <li>● Why you need to fall in love with the problem you’re solving <ul style="list-style-type: none"> <li>○ <i>Assignment #5: Idea evaluation</i></li> </ul> </li> </ul>

### ***Full-Length Course***

In the full-course, participants will be expected to complete one module per week and corresponding assignments. This course will be guided by a proposed model for integration of design-thinking principles within the OT Process (Figure 3.2). Beginning with Module 3: Introduction to the design-thinking process for occupational therapy entrepreneurship, participants will explore alignment of design-thinking principles with the occupational therapy process, the evidence that supports its use in entrepreneurship, and examples of how design-thinking is being used for innovation in healthcare. The subsequent course modules will focus on the five steps of the design-thinking process: empathize, define, ideate, prototype, and test. In the final module, participants will create an action plan to bring their entrepreneurial venture to life with confidence after thorough research and development of their business idea through the design-thinking process.

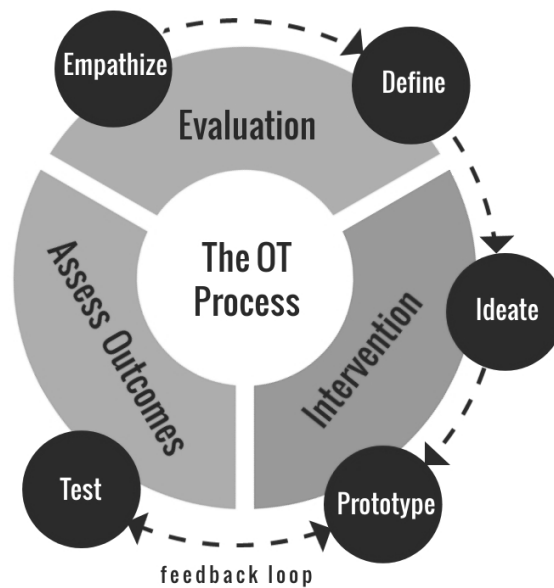
**Table 3.2**

*Embracing entrepreneurship full-course outline*

<p><b>Embracing entrepreneurship full-course:</b> <i>Occupational therapy's introduction to design-thinking for innovation</i></p>
<p><b>Module 3: Introduction to the design-thinking process in occupational therapy</b></p> <ul style="list-style-type: none"><li>● What is design-thinking?</li><li>● We're not so different: Parallels between the design-thinking and OT processes</li><li>● Design-thinking in practice</li></ul> <p><b>Module 4: Empathize</b></p> <ul style="list-style-type: none"><li>● Developing client/customer personas: Defining your target population<ul style="list-style-type: none"><li>○ <i>Assignment #1: Develop 3 client/customer personas</i></li></ul></li><li>● Conducting client/customer interviews: Were already experts!</li><li>● Conducting secondary research: Who's already doing it?</li><li>● Developing your interview/needs assessment plan<ul style="list-style-type: none"><li>○ <i>Assignment #2: Develop your plan</i></li></ul></li></ul> <p><b>Module 5: Define</b></p> <ul style="list-style-type: none"><li>● Analyzing interview findings</li><li>● Redefining the problem, not the solution</li><li>● Embracing ambiguity<ul style="list-style-type: none"><li>○ <i>Assignment #3: Define the problem you are solving</i></li></ul></li></ul> <p><b>Module 6: Ideate</b></p> <ul style="list-style-type: none"><li>● The "How might we..." ideation process</li><li>● Assembling a team: What diverse backgrounds will help you address your problem?</li><li>● Brainstorming &amp; sorting ideas<ul style="list-style-type: none"><li>○ <i>Assignment #4: Develop your ideation brainstorm plan</i></li></ul></li></ul> <p><b>Module 7: The feedback loop: Prototype &amp; test</b></p> <ul style="list-style-type: none"><li>● Your prototype is NOT your complete business!</li><li>● Importance of user feedback before launch a business</li><li>● Problem/solution alignment: Does your solution solve the client/customer problem you've identified?<ul style="list-style-type: none"><li>○ <i>Assignment #5: Your 60-minute prototype</i></li></ul></li><li>● The iterative feedback loop: Integrating feedback to refine your solution<ul style="list-style-type: none"><li>○ <i>Assignment #6: Your client/customer feedback plan</i></li></ul></li></ul> <p><b>Module 8: Journey to your MVP</b></p> <ul style="list-style-type: none"><li>● Wrapping it up: What you've discovered<ul style="list-style-type: none"><li>○ <i>Assignment #7: Your one-page business plan (definition of the problem, customer personas, customer pains, problem/solution alignment)</i></li></ul></li><li>● Developing an MVP (minimal viable product)<ul style="list-style-type: none"><li>○ <i>Assignment #8: Bringing your MVP to market</i></li></ul></li></ul>

**Figure 3.2**

*Proposed model for integration of design-thinking principles and the occupational therapy process*



**Personnel**

The author of this program will be the course instructor and is responsible for the creation of the course content and assignments, as well as facilitating the weekly live discussions. Course participants will take on the role of active learners and call upon their knowledge and experiences to complete course assignments in order to develop a novel entrepreneurial venture of their own. During live discussions, course participants will also supplement the instructors' knowledge by sharing their knowledge and experiences with one another.

## **Program Participants**

The proposed program will be open to all occupational therapy practitioners. However, practitioners with 1) two or more years of experience who have demonstrated leadership in their roles, 2) who desire professional growth and autonomy, and 3) have considered starting or recently started a business of their own will be targeted. A more detailed description of the “learner personas” or ideal participants that this program is designed for will be discussed in *Chapter 5: Dissemination plan*.

## **Evidence Base to Inform the Program**

There are few existing occupational therapy continuing education courses on the topic of entrepreneurship, and the majority of these courses are “about” entrepreneurship, providing introductory level knowledge with a large focus on business plan creation (Covell-Pierson, n.d.; Crossroads, n.d.; Gash, n.d.; Richardson, 2019). The existing programs do not emphasize innovation and creativity in entrepreneurship; and the evidence suggests that traditional teaching methods are unlikely to adequately expose students to the various types of entrepreneurship and encourage entrepreneurial behavior (Higgins et al., 2013; Salminen et al., 2014; Sirelkhatim & Gangi, 2015).

The results of this evidence literature search suggest that a course does not exist that: (1) purposefully addresses the barriers to entrepreneurship occupational therapy practitioners face or that (2) equips them with the tools to embrace the “entrepreneurial mindset” through creativity and innovation on their non-linear path towards entrepreneurship. The evidence search described previously supports inclusion of content to build entrepreneurial awareness, use of design-thinking, provision of opportunities for



self-reflection, and use of adult learning theory. Explanation of how these themes will be incorporated into *Embracing Entrepreneurship* is described next.

### ***Building Entrepreneurial Awareness***

Helping new or future entrepreneurs become more aware of their entrepreneurial actions can help strengthen their understanding of concepts (Higgins et al., 2013; Sirelkhatim & Gangi, 2015). Therefore, everyday examples of entrepreneurship in occupational therapy will be embedded throughout the course, and participants will have the opportunity to reflect on ways they have previously acted entrepreneurially. Additionally, through completion of this course, participants will learn through doing to build their entrepreneurial awareness by developing innovative business ideas that address problems in practice they are passionate about solving.

The evidence also suggests that exposure to “social entrepreneurship” and “intrapreneurship” may be accessible for a great number of students who may think entrepreneurship is just about starting a profitable business (Arnaert et al., 2017; Boore & Porter, 2011; Salminen et al., 2014). In the first module of the full-length course, different types of entrepreneurship will be defined and discussed.

### ***Use of Design-thinking for OT Entrepreneurship & Innovation***

At the foundational level, the design-thinking process is concerned with human needs and solving problems (Linton & Klinton, 2019), making it extremely well-suited as an approach to entrepreneurship education for occupational therapy practitioners. Design-thinking emphasizes that the journey towards developing a solution to an identified problem is non-linear, and is best achieved after you have developed a deep

understanding of the problem you are trying to solve and your users' needs (Daniel, 2016; Linton & Klinton, 2019; Nielsen & Stovang, 2015). Occupational therapy practitioners are familiar with this way of thinking, using a client-centered approach to gain a deeper understanding of needs in order to develop meaningful interventions.

Shifting focus away from the outcome, or desired business pursuit, and emphasizing the process has been shown to lead to the development of higher quality ideas (Linton & Klinton, 2019). Within this course, an increased emphasis will be placed on opportunity recognition, adaptation, and creation in anticipation of the unknown future, rather than writing a formal business plan when starting a new venture (Daniel, 2016; Linton & Klinton, 2019; Nielsen & Stovang, 2015).

The proposed model for integration of design-thinking principles and the occupational therapy process (see Figure 2.2) will be introduced and a key feature of this course. Occupational therapy practitioners will be introduced to the design-thinking process as a creative tool for innovative problem solving, discuss occupational therapy's role within a design team, and the parallels between the design-thinking and occupational therapy processes. In this proposed course, participants will be guided through the design-thinking process to develop an innovative solution to their chosen problem.

### ***Opportunities for Self-Reflection***

When embarking on an entrepreneurial endeavor, self-reflection can help students connect practical knowledge with their understanding of theoretical perspectives on entrepreneurship (Blondy, 2007; Linton & Klinton, 2019). Learning experiences can also be enhanced by providing students with opportunities to reflect on their own learning,

growth, and own lived experiences (Higgins et al., 2013; Linton & Klinton, 2019; Sirelkhatim & Gangi, 2015).

Self-reflection is a critical component of this course and opportunities to do so will be embedded throughout the course modules. In the first course module, students will complete a series of three self-reflection exercises. These will provide students with opportunities to reflect on their desired goals before starting a new venture, their personal and professional passions, unique strengths and skills, and high potential problems they desire to solve through their new venture. They will also have the opportunity to reflect on times when they have demonstrated entrepreneurship in practice, and to draw parallels between the occupational therapy and design-thinking processes.

Reflection on one's own strengths and limitations can also help inform the creation of effective teams with diversified skill sets (Blondy, 2007; Eddy & Stellefon, 2009). In the sixth module forming effective teams will be discussed, and participants will be encouraged to think outside of the box to recruit a diverse team of experts that complements their strengths and knowledge gaps.

### ***Application of Adult Learning Theory***

Using design-thinking for entrepreneurship education shifts the center of attention away from the teacher, and toward student-centered learning (Linton & Klinton, 2019), which aligns with the core principles of adult learning theory. Adult learning theory defines five assumptions about adult learners that should be considered when developing an educational program (Blondy, 2007; Knowles, 1984). Key program features of this online course in accordance with these assumptions are outlined next.

**Adult Learners are Self-directed** (Blondy, 2007; Knowles, 1984).

Acknowledging that embracing entrepreneurship will look different for every participant, after reviewing a brief outline of the course, students will be encouraged to set individual goals to achieve upon course completion. Additionally, the course content takes a process-oriented versus content-oriented approach (Blondy, 2007), preparing participants to utilize the design-thinking process as a creative tool for innovation, applying it in their own desired way.

**Adults Bring Valuable Experience to the Learning Environment** (Blondy, 2007; Knowles, 1984). Building upon personal strengths, skills, and experiences will be a critical component of this course. Through a series of self-reflections students will build self-awareness of their unique value as part of an interdisciplinary design team. When choosing a problem to address through application of the design-thinking process, they will also be encouraged to articulate how their unique value makes them the right person to solve this problem, and identify what complementary skills and team members they may need.

**Adults are Ready to Learn** (Blondy, 2007; Knowles, 1984). It is assumed that every course participant has had a unique career journey which led them to enroll in this course. At the beginning of this course, students will be asked to reflect on why they enrolled in this course and what they hope to get out of it.

**Adult Learners are Problem-oriented** (Blondy, 2007; Knowles, 1984). Adult learners seek information that they can apply directly to the problems they are facing. Upon completion of each module, interactive discussions will also be fostered amongst

participants to provide numerous opportunities to consider how learned concepts can be applied to situations in their own lives (Blondy, 2007).

**Adults are Motivated to Learn by Internal Factors** (Blondy, 2007; Knowles, 1984). Themes of entrepreneurial confidence building and celebration of entrepreneurial success will be embedded throughout this course. Students will be encouraged to reflect on their previous accomplishments through the lens of entrepreneurship, and will be praised for their contributions towards the profession as well for their innovative solutions developed through application of the design-thinking process.

### **Course Objectives and Expected Outcomes**

The objectives of this online CE course will be to help practitioners: (1) identify three high potential business ideas they are well-suited to solve based on their strengths, passions, and interests (2) develop an introductory understanding of the design-thinking process, (3) explain parallels between the design-thinking and occupational therapy processes, and (4) utilize the design-thinking process to research and begin building a new entrepreneurial venture.

In accordance with these objectives, the expected outcomes of this course are: (1) increased knowledge of the design-thinking process, (1a) why occupational therapy practitioners are well-suited to implement it, (1b) how it can be used to develop innovative solutions, services, or programs, or products, (2) increased confidence in pursuing a novel entrepreneurial venture, and ultimately (3) an increased number of occupational therapy entrepreneurs. The program evaluation plan to monitor its achievement of outcomes will be described next, in Chapter 4.

## **CHAPTER FOUR – Evaluation Plan**

This chapter begins by reviewing the program evaluation vision and goals for the Embracing Entrepreneurship mini-course and full-length course. Next, an overview of the logic model created to guide this evaluation plan is provided. Lastly, a description of the proposed program evaluation is provided, including a table of evaluation questions and discussion of the data management and analysis plan.

### **Program Evaluation Vision and Goals**

This program evaluation is designed to collect data from course participants throughout the many stages of their entrepreneurial journey and is divided into two parts. Part one of this evaluation plan has been developed for the free-mini course, and part two for the full-length course. Both parts of this evaluation contain questions both formative at summative in nature.

Question responses will be used to determine if the course curriculum is being delivered as intended, to see if the program is “working”, and determine if any changes will need to be made to content provided (Newcomer & Triplett, 2015). Feedback from course participants will be continually incorporated in order to revise the curriculum and methods of course delivery. As the course evolves and matures, the program evaluation will as well. Over time, the course evaluation will become more summative in nature in that it will provide solid evidence of the effectiveness of the program to future participants (Newcomer, Hatry, & Wholey, 2015).

In addition to monitoring content effectiveness, part one of this evaluation also seeks to determine what factors influence occupational therapy practitioners’ desire to

pursue entrepreneurship, and upon completion of the mini-course if their perceptions of entrepreneurship within the profession or their likelihood to pursue a new venture change. Part two of this evaluation plan also seeks to determine if design-thinking is an effective tool for innovation and entrepreneurship within occupational therapy.

**Table 4.1**

*Embracing entrepreneurship program evaluation goals*

<b>Embracing entrepreneurship program evaluation goals (Mini &amp; full-course)</b>
Measure the perceived... <ul style="list-style-type: none"> <li>• Relevance of course content to occupational therapy practitioners</li> <li>• Effectiveness of course content in meeting course objectives</li> <li>• Satisfaction of course participants with content, assignments, and delivery of the course material.</li> </ul>
<b>Mini-course evaluation goals</b>
<ul style="list-style-type: none"> <li>• Analyze demographic trends in occupational therapy practitioners interested in entrepreneurship</li> <li>• Determine what factors lead occupational therapy practitioners to pursue or have an interest in entrepreneurship</li> <li>• Measure a change in the “entrepreneurial knowledge gap” of course participants</li> <li>• Determine effectiveness of <i>5-step process for OT entrepreneurial idea generation</i> and corresponding assignments</li> </ul>
<b>Full length course evaluation goals</b>
<ul style="list-style-type: none"> <li>• Determine if application of design-thinking methodology in occupational therapy entrepreneurship education is an effective tool for innovation.</li> </ul>

**Integration of Logic Model**

A logic model in provides a visual illustration of how the proposed program inputs, resources, and theory link to proposed program activities, outputs, and outcomes. In order to inform the delivery and evaluation of this program, a logic model was created which can found in Appendix E.

## **Description of the Program Evaluation**

In the free-mini course, qualitative and quantitative data will provide insight into the program effectiveness (summative data) and various program components (formative). Evaluation survey questions will be imbedded into the course modules through Thinkific. Course participants will be required to complete the survey questions in order to complete the course. The logic model in Appendix E provides a visual illustration of how the proposed program inputs, resources, and theory link to proposed program activities, outputs, and outcomes. This program evaluation has been designed to evaluate the validity of this proposed logic model.

### ***Evaluability Assessment***

Input and feedback from free mini-course participants will be critical in the early phases of development and program evaluation. Responses from both parts of this evaluation will help guide appropriate revisions of course delivery, content, and market positioning.

### ***Key Stakeholders***

A group of eight pilot course participants will be selected based on specific criteria, as outlined as Program Clients in the proposed logic model. Several occupational therapists have already expressed interest in this course to the instructor through word of mouth, however eight will be hand selected to represent a diverse body of potential clients. The evaluator will consider factors including years of experience, willingness to commit adequate time, demonstration of self-starting capabilities, etc.



### ***Presentation of Supporting Documentation***

The free mini-course participants will be provided with the body of evidence the program creator has compiled that inspired her to create this course.

### ***Evaluation Methods***

A survey can often be the best way to get information and receive feedback to use in program planning and improvement (Thayer-Hart, Dykema, Elver, Schaeffer, & Stevenson, 2010). This program evaluation will use online surveys using the Typeform platform to gather and analyze participant feedback. Evaluation questions will be integrated directly into the Thinkific course, and required of participants in order to move onto the next module and complete the course.

### ***Methodology***

General themes of the survey will include an overall reflection of the program, their satisfaction with the program, a comparison with how it matched their expectations, time spent, and opportunity to share any additional thoughts or remarks to support the continual improvement of the course. The program evaluation survey will be formative and summative in nature.

### ***Data Gathering***

Survey questions will be embedded throughout the course content, and a longer survey evaluation will be presented at the end of the final module. To assure completion of the survey, program participants will be required to submit their responses prior to earning their certificate of completion for the course. A two-day deadline reminder e-mail will be sent to all cohort members to confirm completion. If a participant does not

complete the survey by the end of the course, the course instructor will contact them personally.

### ***Evaluation Questions***

The following tables outline the evaluation questions that will be embedded into this proposed program. Table 4.2 outlines questions that will be asked prior to participating in the mini-course, after completion of modules, and after the participants have completed the course.

**Table 4.2**

#### *Mini-course evaluation questions*

<b>Pre-course evaluation questions</b> (Demographic information & current level of entrepreneurial knowledge)
<ol style="list-style-type: none"><li>1. I am a...<ol style="list-style-type: none"><li>a. Occupational therapist</li><li>b. Occupational therapy assistant</li><li>c. Occupational therapy graduate student</li><li>d. Occupational therapy assistant student</li></ol></li> <li>2. I've been practicing for...<ol style="list-style-type: none"><li>a. 0-2 years</li><li>b. 3-5 years</li><li>c. 6-9 years</li><li>d. 10+ years</li></ol></li> <li>3. Which best describes you?<ol style="list-style-type: none"><li>a. I am an entrepreneur</li><li>b. I want to start a new entrepreneurial venture</li><li>c. I am still figuring out if entrepreneurship is for me</li></ol></li> <li>4. Describe your current practice in a <i>single sentence (Short answer)</i></li> <li>5. Which best describes your exposure to entrepreneurship? (types of entrepreneurship, the entrepreneurial mindset, the entrepreneurial process, etc.)<ol style="list-style-type: none"><li>a. Not very familiar—I had to create a business plan in school, that's about</li></ol></li></ol>

- it
  - b. Somewhat familiar—I've self-taught myself some basics (read a few books, blogs, or talked to OT business owners)
  - c. Very familiar—My bookshelf is stacked with books on entrepreneurship, I have a great mentor, or I've started a business of my own
6. Why are you interested in entrepreneurship? (*Check all that apply*)
    - a. I desire more professional growth
    - b. I feel stuck at my current job
    - c. I want to be my own boss
    - d. I want more schedule flexibility
    - e. I want to make a greater impact
    - f. I want more financial stability
    - g. Other(s)
  7. I believe the skills of OTPs make them well-suited to start innovative businesses other than private practices (1= *strongly disagree*, 2= *disagree*, 3= *neither agree nor disagree*, 4= *agree*, 5= *strongly agree*)
  8. In 20 words or less, what's the biggest question about entrepreneurship you're trying to answer? OR do you hope to get from this course? (*Short answer*)

### **Module 1: Your entrepreneurial blueprint**

Likert scale (1= *strongly disagree*, 2= *disagree*, 3= *neither agree nor disagree*, 4= *agree*, 5= *strongly agree*)

1. *Self-Reflection #1: My entrepreneurial goals* helped me identify (things, traits, shortcomings) present in my professional career that I wish to change
2. *Self-Reflection #2: My triple P* helped me connect the dots between my personal and professional passions and how these may be combined in a new entrepreneurial venture
3. *Self-Reflection #3: My unique value as an OT entrepreneur* helped me gain clarity and confidence in the skills I have to offer
4. Approximately how much time did you spend on each self-reflection?
  - a. Under 30 minutes
  - b. Between 30 minutes to an hour
  - c. Over an hour

5. Is there anything that would have made these self-reflections more helpful?  
(Short answer)

**Module 2: High potential ideas = high potential of success**

Likert scale (1= *strongly disagree*, 2= *disagree*, 3= *neither agree nor disagree*, 4= *agree*, 5= *strongly agree*)

1. *Assignment #4: High potential idea generation* helped develop three or more business ideas aligning with my strengths, interests, and entrepreneurial goals
2. *Assignment #5: Idea evaluation* helped me evaluate the feasibility of starting each business idea, including need and risk assessment
3. Is there anything that would have made these assignments more helpful?  
(Short Answer)

**Post-course evaluation questions**

Likert scale (1= *strongly disagree*, 2= *disagree*, 3= *neither agree nor disagree*, 4= *agree*, 5= *strongly agree*)

**Content effectiveness**

1. I believe the skills of OTPs make them well-suited to start innovative businesses other than private practices (\*Pre-& Post)
2. I can identify the traits of high potential entrepreneurial ideas
3. I understand the importance of identifying the problem I want to address through my entrepreneurial venture before beginning to develop it
4. The entrepreneurial content of this mini-course is relevant to the novice occupational therapy entrepreneur
5. The entrepreneurial content of this mini-course is relevant to the experienced occupational therapy entrepreneur

**Personal satisfaction**

6. This course helped me understand how my personal passions and interests can be combined with my unique occupational therapy practice to start an entrepreneurial venture I am passionate about
7. This course helped me generate three high potential business ideas I can see myself pursuing
8. This course helped me gain more confidence in my entrepreneurial abilities
9. I would recommend this course to other occupational therapy practitioners interested in entrepreneurship

**Dissemination/ marketing**

- 10. Would you like to share this course with a colleague or friend? You'll receive a discount code for full-course enrollment! (*Y/N; enter e-mails*)
- 11. I'd like to build one of my innovative business ideas, and stay up to date with the launch of the full-course! (*Y/N; opt into email list*)

Next, Table 4.3 provides an outline of the questions included in the full-length *Embracing Entrepreneurship* course. Because participants are required to complete the mini-course prior to enrollment, their profile in the facilitator's program will have already been created. Therefore, demographic information will not be collected again. Similar to the mini-course, evaluation questions will be asked upon completion of the individual modules and a post-course evaluation will be administered to participants after course completion.

**Table 4.3**

*Full-course evaluation questions*

<p><b>Module 3: Introduction to design-thinking</b></p> <p>Likert scale (1= <i>strongly disagree</i>, 2= <i>disagree</i>, 3= <i>neither agree nor disagree</i>, 4=<i>agree</i>, 5= <i>strongly agree</i>)</p> <ul style="list-style-type: none"><li>1. The design-thinking process can be used to solve complex problems in practice</li><li>2. There are similarities between the design-thinking and occupational therapy processes</li><li>3. Occupational therapy practitioners can utilize design-thinking to solve complex problems in the community, in healthcare, and beyond.</li></ul>
<p><b>Module 4: Empathize</b></p> <p>Likert scale (1= <i>strongly disagree</i>, 2= <i>disagree</i>, 3= <i>neither agree nor disagree</i>, 4=<i>agree</i>, 5= <i>strongly agree</i>)</p> <ul style="list-style-type: none"><li>1. Researching my target population (clients, customers, or consumers) before</li></ul>

launching my business is an important step in the entrepreneurial process

2. Developing user personas has helped me define my target population/ desired customers
3. Interviewing has helped me gain a deeper understanding of my target populations 'and/or desired customers' needs

### **Module 5: Define**

Likert scale (1= *strongly disagree*, 2= *disagree*, 3= *neither agree nor disagree*, 4=*agree*, 5= *strongly agree*)

1. It is important to define the problem you are trying to solve before starting a new business or entrepreneurial venture
2. It is important to consider the size of the problem you are trying to solve, or how many people experience the “pain point” you are addressing before starting a new business or entrepreneurial venture

### **Module 6: Ideate**

Likert scale (1= *strongly disagree*, 2= *disagree*, 3= *neither agree nor disagree*, 4=*agree*, 5= *strongly agree*)

1. Assembling a team with diverse experience and expertise will allow me to develop a more effective and/or successful entrepreneurial idea
2. The process of “rapid prototyping”, and brainstorming without judgement ultimately helped my team come up with more creative and innovative ideas

### **Module 7: The Feedback Loop: Prototype & Test**

Likert scale (1= *strongly disagree*, 2= *disagree*, 3= *neither agree nor disagree*, 4=*agree*, 5= *strongly agree*)

1. It is important to get feedback from your target population/ consumers early on in the developing process in order to best meet their needs
2. Creating problem / solution alignment within your new venture is critical to its success

### **Post-course evaluation questions**

Likert scale (1= *strongly disagree*, 2= *disagree*, 3= *neither agree nor disagree*,

4=agree, 5= strongly agree)

**Content effectiveness**

1. This course helped me research and develop a novel entrepreneurial idea I am passionate about
2. This course provided an effective introduction to the design-thinking process for innovation and entrepreneurship for occupational therapy practitioners

**Use of design-thinking for entrepreneurship education**

Using the design-thinking to develop a new venture can help entrepreneurs...

1. Think more creatively
2. Develop a deeper understanding of the problem they are trying to solve
3. Refine and improve their ideas to deliver the most value to their target population

**Personal satisfaction**

4. This course helped me understand how my personal passions and interests can be combined with my unique occupational therapy practice to start an entrepreneurial venture I am passionate about
5. This course helped me gain more confidence as an entrepreneur
6. After completing this course, I feel more capable of starting an entrepreneurial venture
7. I would recommend this course to other occupational therapy practitioners interested in entrepreneurship

**Content relevancy**

8. The rigor of this content is appropriate for an occupational therapy practitioner taking the first steps toward entrepreneurship
9. The rigor of this content is appropriate for an experienced occupational therapy entrepreneur
10. The organization of content and materials in each module facilitated my learning

**Data Analysis Plan**

Responses to 5-point Likert scale and multiple-choice questions will be compiled into a matrix table for comparison and analysis. The responses to the survey from the mini-course launch, and each subsequent cohort of the program will be compared as adjustments are made to the curriculum to track perceived improvements. When

analyzing short answer responses, key codes, categories, and themes will be drawn using a descriptive approach organized into a matrix display using Microsoft Excel (Rogers & Goodrick, 2015).

### **Data Management Plan**

Advances in computer technology have provided streamlined and cost-efficient means to facilitate data analysis (Newcomber & Triplett, 2015). Once all participants have completed the survey, the responses will be exported into Microsoft Excel for analysis. Upon signing up of the course, participants were required to submit their name and e-mail address. Since the program evaluation does not collect any sensitive information, no additional precautions will be needed to protect data privacy.



## **CHAPTER FIVE – Funding Plan**

### **Funding Plan Objectives**

Building and launching a new program can take a significant amount of resources such as time, personnel, and financial support. The purpose of this chapter is to examine the financial projections and funding for the development and implementation of *Embracing Entrepreneurship: Occupational therapy's introduction to design-thinking for innovation*. The objectives of this funding plan are as follows: 1) Identify the necessary expenses with planning, implementing, and disseminating the *Embracing Entrepreneurship* mini-course and full-course, 2) Identify possible grant opportunities available to support its launch in Year 1 (Y1), 3) Develop a sustainable and profitable financial model for Year 2 (Y2).

This chapter begins with a discussion of the various types of expenses this program requires, provides justification for these expenses, and proposes Y1 and Y2 fiscal budgets. Possible grant and funding opportunities are then discussed.

### **Expenses**

#### ***Personnel***

This author, the program designer is an occupational therapist with a wide range of creative entrepreneurial knowledge and experience. The program designer, will be responsible for the development of the course content, both text and video, prior to launch as well as any modifications to the program content as it continues to evolve. The program designer is a novice graphic designer, and will be responsible for the website design and development of promotional online marketing material. While the full-length

course is in session, the program designer will also be responsible for facilitating the weekly, one-hour live discussions, and responding to emails from participants within 24 hours. Regardless of the nature of the work the program designer is completing, her rate of reimbursement will be \$50/hour.

### ***Fixed Expenses***

In order to create the highest quality of content for occupational therapy practitioners pursuing diverse entrepreneurial endeavors, the program designer will become a coworking member at the Nashville Entrepreneur Center (Nashville Entrepreneur Center, 2019). This grants members with access to a diverse network of mentors and industry experts in fields such as advertising, marketing, content strategy, business development, legal copywriting, patenting, trademarking, etc. Monthly membership also includes access to their coworking space and unlimited printing. Nashville Entrepreneur Center membership costs \$99 per month (Nashville Entrepreneur Center, 2019). The online course will be created and hosted on the teaching platform Thinkific. Pro Membership will cost \$79 a month, and allows you to create unlimited courses, enroll unlimited students, email students directly, collect payment, offer membership bundles, generate certificates of completion, integrate Typeform for program surveys, and analyze feedback (Thinkific, 2019). The online course will be hosted on Squarespace, which allows people and businesses to easy build and host websites. Squarespace membership costs \$18 a month (Squarespace, 2019). These fixed expenses will remain constant throughout all phases of program development.

### ***Equipment***

This program designer is able to use her existing MacBook Pro computer to create course content and publish the course. Additional expenses were considered in the planning process of this funding plan including supplies, materials preparation, and location. Since the course will be launched virtually, no materials will be printed or distributed. Additionally, because of the online nature of the program the program designer can develop and host the course from any location therefore a physical office is not needed. iPhones' video quality has increased significantly over the years, and can be used to film high quality video content (Learning Revolution, 2019). The program designer will use a tripod that she already has and the dual lens 12-megapixel camera iPhoneX to record video content. The footage will be edited on iMovie, an editing software that is free on Mac computers.

### ***Marketing Activities***

A budget for the dissemination plan for this program is proposed. However, detailed description and rationale for the marketing and dissemination activities can be found in Chapter 6: Dissemination Plan.

### **Year 1 (Y1) Fiscal Budget**

Table 5.1 provides an estimate for the total expenses necessary within the first year to build and launch this program. Justification of the program designer's time for program development is provided next. The proposed timeline assumes funding will be secured and course development will begin in January 2020.

**Table 5.1**

*Y1 fiscal budget*

Y1 Financial Projections														
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Total	
<b>Program Development</b>	<b>Mini-Course Development</b>		<b>Mini-Course Launch</b>			<b>Full-Course Development</b>			<b>Pilot Cohort Launch</b>		<b>Revise/Plan Content</b>			
Program designer <b>\$50/hr</b>	\$1,000	\$1,250	\$400	\$400	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	\$15,850
Nashville EC <b>\$99/mo</b>	\$99	\$99	\$99	\$99	\$99	\$99	\$99	\$99	\$99	\$99	\$99	\$99	\$99	\$1,188
Thinkific <b>\$79/mo</b>	\$79	\$79	\$79	\$79	\$79	\$79	\$79	\$79	\$79	\$79	\$79	\$79	\$79	\$948
Squarespace <b>\$18/mo</b>	\$18	\$18	\$18	\$18	\$18	\$18	\$18	\$18	\$18	\$18	\$18	\$18	\$18	\$216
<b>Marketing Activities</b>														
HSC Media podcast studio <b>\$125/mo</b>	\$125	\$125	\$125	\$125	\$125	\$125	\$125	\$125	\$125	\$125	\$125	\$125	\$125	\$1,500
Medium <b>\$5/mo</b>	\$5	\$5	\$5	\$5	\$5	\$5	\$5	\$5	\$5	\$5	\$5	\$5	\$5	\$60
Hootsuite <b>\$29/mo</b>	\$29	\$29	\$29	\$29	\$29	\$29	\$29	\$29	\$29	\$29	\$29	\$29	\$29	\$348
Facebook advertisements <b>\$5/day</b>		\$35		\$70										\$105
												<b>Total Y1 Expenses</b>	<b>\$20,215</b>	

***Mini-Course Development*** (Table 5.1)

The program designer will spend approximately five hours per week in the first two months developing and editing course content, and designing the website. In February 2020, an additional five hours will be spent developing and implementing a marketing strategy on social media prior to launch.

***Mini-Course Launch*** (Table 5.1)

In March and April, 2020, the program designer will spend approximately two hours per week promoting the mini-course. For the remainder of Y1, the program designer will dedicate one eight-hour day per week to the Embracing Entrepreneurship program. In May, 2020, feedback from the mini-course participants will be integrated to refine the content provided in the mini-course and revise the full-course content outline, and begin developing content.

***Full-course Development*** (Table 5.1)

This time will be spent developing all full-course content and refining the marketing strategy. This includes recording and editing video content, developing written content, assuring sound instructional design, and meetings.

***Pilot Cohort Launch*** (Table 5.1)

Each cohort of this program will last eight weeks, and the pilot cohort will run from September to October. While a cohort is in session, the program designer will spend four hours per week responding to emails, one hour preparing for the weekly live discussions, 1 hour facilitating the live discussions, and two hours troubleshooting and/or on marketing and social media promotion.

It is important to note that pilot participants will not be required to pay tuition for the course, as their feedback is critical in the development and refinement of course content. Therefore, Embracing Entrepreneurship will not generate a profit in Y1.

**Revise/Plan Content** (Table 5.1)

November and December 2020 will be spent revising course content and delivery based on pilot participant feedback.

**Year 2 (Y2) fiscal budget and projected profits**

In Y2, the course will be launched, and revenue will be earned through collection of tuition cost (Table 5.2). Cohort 1 of *Embracing Entrepreneurship* will have a maximum capacity of 16 participants. This will allow participants to get the most out of the live discussions, and will be easily broken into groups of four for small group discussion. In Cohort 2, the participant capacity will double, and the course instructor will hold two live discussions for equal sized groups. After three periods of revision, it is likely the quality of content will have improved significantly based on participant feedback. Therefore, tuition costs will be increased.

**Table 5.2**

*Y2 projected revenue*

Projected Y2 Revenue			
	# Participants	Tuition Cost	Profit
<b>Cohort 1</b>	16	\$249	\$3,984
<b>Cohort 2</b>	32	\$249	\$7,968
<b>Cohort 3</b>	32	\$549	\$17,568
<b>Y2 Revenue</b>			<b>\$29,520</b>

Table 5.3 provides an overview of the proposed fiscal budget and projected profit during Y2. The program designer's hours remain constant, with the exception of facilitation of the course for Cohorts 2 and 3. We anticipate that as the participant capacity in these cohorts will be doubled, the time spent responding to emails, preparing and facilitating live discussions, and troubleshooting will also double. Assuming each cohort reaches enrollment capacity, projected revenue in Y2 is \$29,520 (Table 5.2), and total expenses are \$28,430, yielding \$1,090 in profit (Table 5.3).

**Table 5.3**

*Y2 fiscal budget*

Y2 Financial Projections														
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Total	
	Cohort 1		Revise/Plan		Cohort 2		Revise/Plan		Cohort 3		Revise/Plan		Y2 Revenue	
<b>Course Tuition</b>	\$3,984				\$7,968				\$17,568				<b>\$29,520</b>	
<b>Program Development</b>													<b>Y2 Expenses</b>	
Program designer <b>\$50/hr</b>	\$1,600	\$1,600	\$1,600	\$1,600	\$3,200	\$3,200	\$1,600	\$1,600	\$3,200	\$3,200	\$1,600	\$1,600	\$25,600	
Nashville EC <b>\$99/mo</b>	\$99	\$99	\$99	\$99	\$99	\$99	\$99	\$99	\$99	\$99	\$99	\$99	\$1,188	
Thinkific <b>\$79/mo</b>	\$79	\$79	\$79	\$79	\$79	\$79	\$79	\$79	\$79	\$79	\$79	\$79	\$948	
Squarespace <b>\$18/mo</b>	\$18	\$18	\$18	\$18	\$18	\$18	\$18	\$18	\$18	\$18	\$18	\$18	\$216	
<b>Marketing Activities</b>														
Medium <b>\$5/mo</b>	\$5	\$5	\$5	\$5	\$5	\$5	\$5	\$5	\$5	\$5	\$5	\$5	\$60	
Hootsuite <b>\$29/mo</b>	\$29	\$29	\$29	\$29	\$29	\$29	\$29	\$29	\$29	\$29	\$29	\$29	\$348	
Facebook advertisements <b>\$5/day</b>					\$70								\$70	
<b>Total Y2 Expenses</b>												<b>\$28,430</b>		
<b>Projected Y2 Profits</b>												<b>\$1,090</b>		



## Program Funding

Table 5.4 outlines various funding sources for the creation of the *Embracing Entrepreneurship* course. Surprisingly, few grants exist for the development of continuing education for adults and entrepreneurship education.

**Table 5.4**

*Potential funding sources*

<b>Funding Source</b>	<b>Amount</b>	<b>Description</b>
<b>Boston University:</b> Digital Learning & Innovation Digital Education Incubator	Varies. Previous project funding has ranged from \$5K-\$200K	<b>Current focus areas:</b> Project-based and work integrated learning; mentoring and advising; lifelong learning and the future of work; emerging educational technologies  <b>Deadline:</b> January 20, 2020
<b>Boston University Sargent College:</b> Dudley Allen Sargent Grant	Up to \$5,000	Gives financial support to students “when the lack of such assistance might result in the dilution of the project or its delayed completion.”
<b>Burton D. Morgan Foundations</b>	Up to 1.5 million per year, individual grant amounts not specified.	Grants to support innovation and entrepreneurship at the youth, collegiate, and adult levels.  <b>Previous funded initiatives:</b> Business Volunteers Unlimited for a seminar on social entrepreneurship (\$4,300) Ideastream for the Making It series (\$50,000)  <b>Deadline:</b> rolling applications
<b>American Occupational Therapy Foundation:</b> Dr. Gary Keilhofner doctoral research scholarship	\$5,000	Awarded to a candidate establishing a research agenda for the advancement of science for the field of occupational therapy through investigation or development of at least one area, including “Extensions of theoretical foundations of occupational therapy, including client-centered, occupation-based innovations” and “Novel and innovative intervention techniques.”  <b>Deadline:</b> October 1, 2019

<b>Ewing Marion Kauffman Foundation</b>	Amount not specified	Provides grants for organizations that support entrepreneurs, for research that benefits entrepreneurs, and to build entrepreneurial ecosystems and economies.  <b>Deadline:</b> rolling applications
---	----------------------	---

In the event that grant funding is not achieved, the program designer is prepared to explore other funding options, such as crowdsourcing and bootstrapping.

Crowdsourcing is the practice of engaging a ‘crowd’ or group for a common goal — often towards innovation, problem solving, or efficiency” (Crowdsourcing week, 2019). Using platforms such as GoFundMe or Kickstarter, campaigns can be made to attract a large number of unrelated donors. Securing grant funding would allow the program developer to dedicate the appropriate amount of time needed to develop this course along the proposed timeline. However if external funding is not able to be secured, the developer is willing to “bootstrap” in order to build and launch this course.

Bootstrapping” is the act of starting your business with no or very little money” It often involves sacrificing your own time and likely your personal money to get your business venture off the ground (Businessdictionary, 2019)

**Conclusion**

The first year of *Embracing Entrepreneurship: Occupational therapy’s introduction to design-thinking for innovation* will require significant overhead costs to develop and implement. While it is possible that some of the available grants discussed could fund the development of the program, it is highly likely that the program designer will use hours of her time to build and launch the free mini-course and pilot launch of the full-course. “Bootstrapping” is an extremely common act for entrepreneurs to engage in,

dedicating their own time and resources to building an idea they believe in. Luckily, for this program aside from the cost of the program designer's hourly rate, the fixed expenses and overhead costs are quite minimal, \$2,352. It is critical for new programs and entrepreneurial ventures to sustain financial profitability in order to succeed and continue to grow. This program designer has projected financial profitability for Y2, which is critical to the success of this program. Additionally, there is significant room to scale the Embracing Entrepreneurship brand to create additional topical online courses based on need (i.e. establishing your brand identity, introduction to online marketing, or occupational therapy's step by step guide to creating online courses). The content of these courses would be "evergreen" and available on demand. They would churn a significant profit because there would be no live facilitation from the program designer and no additional web hosting expenses.

## CHAPTER SIX – Dissemination Plan

### Program Description

The proposed program titled *Embracing Entrepreneurship: Occupational Therapy's introduction to design-thinking for innovation* is an online continuing education (CE) course that introduces the design-thinking process to occupational therapy practitioners, provides an opportunity to apply this process to develop innovative solutions, services, or programs, or products. Design-thinking has been shown to be an effective teaching methodology in entrepreneur and healthcare education, however there has been limited evidence published on its use within occupational therapy.

### Dissemination Plan Goals

The goals of the dissemination plan for this proposed project are as follows:

#### *Long-Term Goal*

- The program results will lead to an increased number of occupational therapy entrepreneurs

#### *Short-Term Goals*

The program results will...

- inform occupational therapy practitioners of the benefits of adding the design-thinking process to their toolkit in practice and when starting a new entrepreneurial venture
- inform occupational therapy practitioners of their role as an entrepreneur and as part of a design team

- support the program developer in building brand awareness to promote the course and future courses

## **Target Audiences**

### ***Primary Audience***

The primary audience for the evaluation results of this proposed program are occupational therapy practitioners between who desire professional growth, leadership and autonomy in their career. See Table 6.1 for a detailed description of the primary audience “learner personas” for the dissemination of this program.

### ***Secondary Audience***

The secondary audience for the evaluation results of this proposed program are other health professionals, including physical therapists, speech language pathologists, nutritionists, dieticians, and public health professionals.

During the first iterations of the proposed program, occupational therapy practitioners will be the primary targeted audience. However, once the program is refined and proven successful, the goal is to expand course offerings to the secondary audience, diverse health professionals, and continually modify course content to meet their needs.

## **Learner Personas**

Creating “user personas” is a critical step in the design process and helps design teams develop products and services that meet the needs of their target consumers (Quintana, Haley, Levick, Holman, Hayward, & Wojan, 2017). A persona is a fictional representation of potential users. Personas contain information such as a user’s name, identity, motivations, and provides insight about what is important to them (Quintana et

al., 2017) The development of personas can provide focus when designers have a vague idea of who their target audience is, and has been widely used in user experience (UX) design and marketing contexts (Quintana et al., 2017).

In the online learning environment, instructional designers may develop “learner personas” to assure their content is meeting the needs of their students. Integrating such personas throughout the design of a course and during its iteration can greatly improve online learner experience and outcomes (Quintana et al., 2017). Table 6.1 provides a detailed overview of the targeted audience of this dissemination plan through the development of primary audience learner personas.

**Table 6.1**

*Embracing Entrepreneurship primary audience learner personas*

<b>Primary Audience Learner Demographics</b>		
<ul style="list-style-type: none"> <li>• Occupational therapy practitioners with 2+ years of job experience</li> <li>• Desire for professional growth, leadership, and autonomy</li> <li>• Have developed an interest in entrepreneurship, or are already aspiring to become an entrepreneur.</li> <li>• “Tech savvy”—Comfortable using new technology, excited to use a new digital learning platform</li> </ul>		
<b>Targeted Learner Personas</b>		
<p><b>Stephanie Smith MS, OTR/L</b> Feels stuck and needs inspiration for the next step in her career</p>	<p><b>Alicia Wills MS, OTR/L, NDT</b> NDT and infant massage certified and wants to market innovative services</p>	<p><b>Emily Otto OTD, OTR/L</b> Adapted a weightlifting device for a client and wants to start selling it</p>
<p><i>“I want to feel inspired by my work, and start a business of my own to help others”</i></p>	<p><i>“I want to teach all parents tips and tricks to promote their infant’s development”</i></p>	<p><i>“I know that this has helped my client John. I bet it can help others too”</i></p>

<p><i>“My days have become so routine and I am so overworked that somedays I feel like I chose the wrong profession”</i></p> <p><i>“I don’t feel like I can grow at my current job, and I feel stuck”</i></p> <p><i>“In school I was excited about the value of OT, but I’ve completely lost that spark”</i></p>	<p><i>“I don’t want to start a private practice because I don’t want to deal with the headache of insurance reimbursement”</i></p> <p><i>“I need a push in the right direction. I don't know where to start when marketing my services”</i></p> <p><i>“I don’t know what parents want or need, or if they would even find my expertise valuable”</i></p>	<p><i>“I think I could start selling these, but I don’t want to invest a bunch of time and money making them before I’m sure if people would buy them”</i></p> <p><i>“Graduate school didn’t teach me the first thing about product development or marketing. Where do I start?”</i></p>
<b>Motivation &amp; Desired Outcomes</b>		
<p><b>Main motivation:</b> to feel inspired again and explore if starting a business is right for me</p> <p><b>Desired outcomes:</b></p> <ul style="list-style-type: none"> <li>● Gain clarity in the next chapter of my career</li> <li>● Generate new entrepreneurial ideas I feel capable of starting</li> </ul>	<p><b>Main motivation:</b> to start a profitable business helping parents without becoming an insurance provider</p> <p><b>Desired outcomes:</b></p> <ul style="list-style-type: none"> <li>● Learn about different ways to provide and market my services</li> <li>● Understand how to best market my services</li> </ul>	<p><b>Main motivation:</b> to learn how to start selling a product and how much it will cost to get it up and running</p> <p><b>Desired outcomes:</b></p> <ul style="list-style-type: none"> <li>● Understand the product development process</li> <li>● Start selling adapted weightlifting equipment</li> </ul>

### Key Messages

Key messages to be delivered to the primary and secondary audiences through this dissemination plan are outlined next. It is important to note that the primary audience will be targeted first. The dissemination plan will expand to include the secondary

audience only after: 1) the program has run for at least 1 year or 2) grant funding is secured to expand the reach of this program.

***Key Messages for Primary Audience***

- There is a growing need for occupational therapy entrepreneurs, and entrepreneurship is critical to the advancement of our profession.
- Occupational therapy practitioners' process and client-centered practice make them innately capable entrepreneurs and designers.
- Design-thinking is a creative, interdisciplinary, human-centered approach to problem solving that aligns with occupational therapy practice in many ways. Entrepreneurs can utilize this process to research and refine potential solutions to complex problems before bringing an idea to market.
- *Embracing Entrepreneurship* is a highly regarded course designed specifically for early stage OT entrepreneurs who feel stuck, desire professional growth, and are considering starting a new venture of their own but have no idea where to start.

***Key Messages for Secondary Audience***

- An increasing number of health professionals are pursuing entrepreneurship to bring innovation to their fields, and advance the quality of care provided across the lifespan.
- Health professionals are highly capable entrepreneurs and designers, and needed now more than ever in the rapidly changing healthcare landscape.



- Design-thinking is a creative, interdisciplinary, human-centered approach to problem solving. Entrepreneurs can utilize this process to research and refine potential solutions to complex problems before bringing an idea to market.
- *Embracing Entrepreneurship* is a highly regarded course for early stage entrepreneurs, and experienced entrepreneurs interested in learning more about design-thinking: a creative, interdisciplinary, human-centered approach to problem solving.

### **Sources/Messengers**

#### ***Primary Audience Sources/Messengers***

The American Occupational Therapy Association (AOTA) is the primary professional organization for occupational therapy practitioners in the United States. AOTA oversees the publication of the American Journal of Occupational Therapy (AJOT) and OT Practice magazine. Gaining recognition from this organization through various activities (Table 6.2) will be an important part of this dissemination plan. Alumni of AOTA's Emerging Leadership Development Program (ELDP) have expressed interest in the proposed program through its development stage, and may also be considered as messengers for the primary audience.

Karen Jacobs, OT, EdD, OTR, CPE, FAOTA is the Program Director for the On-line post-professional doctorate in occupational therapy (OTD) program, Associate Dean of Digital Learning and Innovation at the College of Health and Rehabilitation Sciences: Sargent College, and the academic mentor to the author of this proposed project.

David McGuire, MA OTR/L is the former president of the Tennessee

Occupational Therapy Association (TNOTA). David and the course creator were connected through the ELDP alumni network, and completed an entrepreneurial boot camp at the Nashville Entrepreneur Center together. David is also an occupational therapy entrepreneur passionate about spreading awareness of the need for more entrepreneurship and innovation within the field of occupational therapy.

***Secondary Audience Sources/Messengers***

As the Associate Dean of Digital Learning and Innovation at the Boston University College of Health and Rehabilitation Sciences: Sargent College, Dr. Karen Jacobs will be a key messenger in the dissemination of this information to the Sargent College alumni outside of the field of occupational therapy.

The Non-Clinical PT is a blog an online resource started by Meredith Castin, PT, DPT for physical therapists, occupational therapists, and speech language pathologists who wish to transition away from clinical practice (Non-clinical PT, 2019). She shares a plethora of resources for entrepreneurs, as well as frequently posts “non-clinical spotlights” to showcase the inspiring non-clinical paths of various health professionals.

## Dissemination Activities

**Table 6.2**

*Descriptions of dissemination plan activities*

<b>Dissemination Activity</b>	<b>Description of Activities</b>
<p><i>Electronic media:</i></p> <p>Embracing Entrepreneurship Podcast &amp; Blog</p>	<p>The creator of this course will be co-hosting a podcast series with David McGuire, where on each episode an OT entrepreneur is invited to share their journey into entrepreneurship and any tips they may have for those just starting out.</p> <p>Accompanying these episodes will be various blog posts, including sharing a selection of highly regarded entrepreneurial and design-thinking resources (books, podcasts, etc.), and quick tips for entrepreneurs at every stage of their venture.</p>
<p><i>Electronic media:</i></p> <p>Medium posts</p> <p>(via Facebook, Twitter, Instagram, LinkedIn, email subscribers)</p>	<p>Medium is a social journalism platform, that allows users to share compelling ideas, knowledge, and perspectives with a diverse audience.</p> <p>The purpose of these posts is to build awareness of the value of occupational therapy practitioners as innately human-centered designers, and their role as part of a design team.</p> <p>These posts will also be shared via Facebook, Twitter, Instagram, LinkedIn, email subscribers</p>
<p><i>Digital marketing:</i></p> <p>Social media advertising</p> <p>(via Facebook)</p>	<p>Facebook allows users to promote their business' page to targeted users filtering by specific demographics such as location, age, interests, and profession.</p> <p>The program developer will promote this course to occupational therapists ages 24-65 years old through paid Facebook advertising campaigns.</p> <p>These campaigns will take place prior to the mini-course launch, and annually during the month of April for national occupational therapy month.</p> <p>If paid social media advertising is deemed successful, an increased budget will be allocated for digital marketing in future years</p>

<p><i>Written information:</i></p> <p>OT Practice Article</p>	<p>AOTA's OT Practice is a professional publication that is available that to all its members.. Articles include a wide range of topics including contemporary practice trends, policy updates, career advice, job opportunities, and the latest professional news (AOTA, 2019)</p> <p>Possible topics include: Why aren't we comfortable with entrepreneurship?, Why we need OT Entrepreneurs now more than ever, and Design-thinking for innovation: Beginning your entrepreneurial journey</p>
<p><i>Person-to-person contact:</i></p> <p>Professional network outreach (LinkedIn, ELDP &amp; BU alumni, relevant blogs)</p>	<p>This course creator will utilize her professional networks to raise awareness of the proposed program across multiple channels.</p>

## Dissemination Plan Budget

**Table 6.3**

*Dissemination plan budget*

<b>Dissemination Activity</b>	<b>Description of Cost</b>	<b>Cost</b>
<i>Embracing Entrepreneurship Podcast</i>	<p><i>HSC Media podcast recording studio membership</i> (HSC Media, 2019)</p> <p>HSC Media is a podcast recording studio located in Nashville. Each room is fully equipped with three state of the art microphones, headphones and a recording interface (HSC Media, 2019)</p> <p>Monthly membership includes 4 1-hour recording sessions</p>	\$125/mo
<i>Medium posts</i>	<p><i>Medium membership</i> (Medium, 2019)</p> <p>Low monthly membership allows members to create a profile and publish content</p>	\$5/mo
<i>Professional network outreach, blog, social media</i>	<p><i>Hootsuite membership</i> (Hootsuite, 2019)</p> <p>Hootsuite is a social media management platform that allows you to schedule content</p> <p>And easily monitor your engagement (clicks, likes, across multiple social media platforms and generate quantifiable data using their powerful social media analytics</p>	\$29/mo
<i>Social media advertising</i>	<p><i>Facebook Automated Ads</i> (Facebook, 2019)</p> <p>Estimated 14-41 clicks per day to increase brand awareness and website traffic</p> <p>These campaigns will run for 7 days prior to the mini-course launch, and for 14 days during the month of April</p>	<p>\$5/day</p> <p>\$105/ Year 1</p>
<b>Total Year One Dissemination Plan Budget</b>		<b>\$2,013</b>

## Dissemination Plan Evaluation

The success and effectiveness of the proposed dissemination activities will be monitored and evaluated. Table 6.4 describes relevant indicators of success for the proposed activities. Table 6.5 discusses indicators of goal attainment for the goals of this dissemination plan.

**Table 6.4**

*Indicators of success for dissemination activities*

<b>Dissemination Activity</b>	<b>Indicators of Success</b>
Embracing Entrepreneurship podcast & blog	<ul style="list-style-type: none"><li>● 10 or more 5-star reviews on iTunes</li><li>● 15 or more website engagements per day</li></ul>
Medium posts	<ul style="list-style-type: none"><li>● 15 or more “claps” per post</li></ul>
OT Practice Article	<ul style="list-style-type: none"><li>● Accepted for publication</li></ul>
Professional network outreach	<ul style="list-style-type: none"><li>● 30 or more practitioners sign up for the mini-course</li></ul>
Facebook ad campaigns	<ul style="list-style-type: none"><li>● 14-41 clicks per day of campaign</li></ul>

**Table 6.5**

*Indicators of dissemination plan goal attainment*

<b>Goal</b>	<b>Indicators of Goal Attainment</b>
<p><b>Long-term goal:</b> Program results will lead to an increased number of occupational therapy entrepreneurs.</p>	<p>Course participants will receive an e-mail 6 months and year after course completion to provide an update on their new venture. Although response will be voluntary, it is likely that if they have continued to build their business they would be eager to share their progress.</p>
<p><b>Short-term goal:</b> Program results will inform occupational therapy practitioners of the benefits of adding the design-thinking process to their toolkit in practice and when starting a new entrepreneurial venture.</p>	<p>Acceptance and agreement of the design-thinking content shared via electronic media sources (blog, Medium, LinkedIn, etc.) will be measured by the number of impressions (views), shares, and likes they receive on their respective platforms</p> <p>Content regarding the use of design-thinking in occupational therapy practice will be shared via electronic media sources (blog, Medium, LinkedIn, social media etc.)</p> <p>It is assumed that positive reception of this content is correlated with higher levels of engagement, therefore goal attainment will be measured by data collected through Hootsuite’s social analytics, including the number of impressions (views), shares, and likes they receive on their respective platforms.</p>
<p><b>Short-term goal:</b> Program results will inform occupational therapy practitioners of their role as an entrepreneur and as part of a design team.</p>	<p>Content regarding occupational therapy practitioners’ role as an entrepreneur and as part of a design team will be shared via electronic media sources (blog, Medium, LinkedIn, social media etc.)</p> <p>It is assumed that positive reception of this content is correlated with higher levels of engagement, therefore goal attainment will be measured by data collected through Hootsuite’s social analytics, including the number of impressions (views), shares, and likes they receive on their respective platforms.</p>
<p><b>Short-term goal:</b> Program results will support the program developer in building brand awareness to promote the course and future courses.</p>	<p>It is assumed that an increase in website traffic and number of e-mail newsletter subscribers, as well as increased social media impressions all correlate with increased brand awareness.</p> <p>These metrics will be monitored using Google Analytics and the Hootsuite dashboard</p>

## CHAPTER SEVEN - Conclusion

To move beyond the confines of the medical model, occupational therapists must learn to think entrepreneurially and develop innovative and creative ways to enhance people's lives (McClure, 2011). Within occupational therapy there are calls for innovation (Hinojosa, 2007; Lamb, 2016; Lamb, 2017; Lamb, 2018; Stoffel, 2015) and entrepreneurial thinking in education (Foto, 1998; Kerr et al., 2015; and practice (Braveman, 2016; Leland et al., 2015; Moyers, 2007). AOTA's Blueprint for Entry-level education outlines "entrepreneurship" and "business fundamentals" as topics to be covered in graduate occupational therapy programs (AOTA, 2010), however the evidence reviewed in support of this project has shown inclusion of innovation and entrepreneurial concepts in occupational therapy education is not occurring to the extent it should be. According to a survey conducted by Anderson & Nelson (2011), occupational therapy entrepreneurs overwhelmingly agree they received inadequate business education and limited professional support.

Field experts argue that the profession is in need of a revolution, including radical change in service design and in the business models used to support new methods of service delivery (Mitcham, 2014; Moyers, 2007). OT practitioners are experts in making a match between complex people and complex environments, and the client-centered foundation of the occupational therapy profession equips practitioners to identify problems and develop meaningful solutions (Anderson & Nelson, 2011). OT practitioners are able to address the needs of individuals, groups, and populations across the lifespan in a full spectrum of practice areas. With societal shifts towards value-based care and an



increasing demand to address the needs of population health, these skills are incredibly valuable for health providers.

Yet, historically when OT practitioners utilize their client-centered skills to create valuable solutions for new populations, they tend to perceive themselves simply as allied health professionals who have discovered opportunities to practice occupational therapy in new contexts, when in reality they have stepped into the role of an entrepreneur (Foto, 1998). This further perpetuates the lack of confidence and entrepreneurial awareness within the profession.

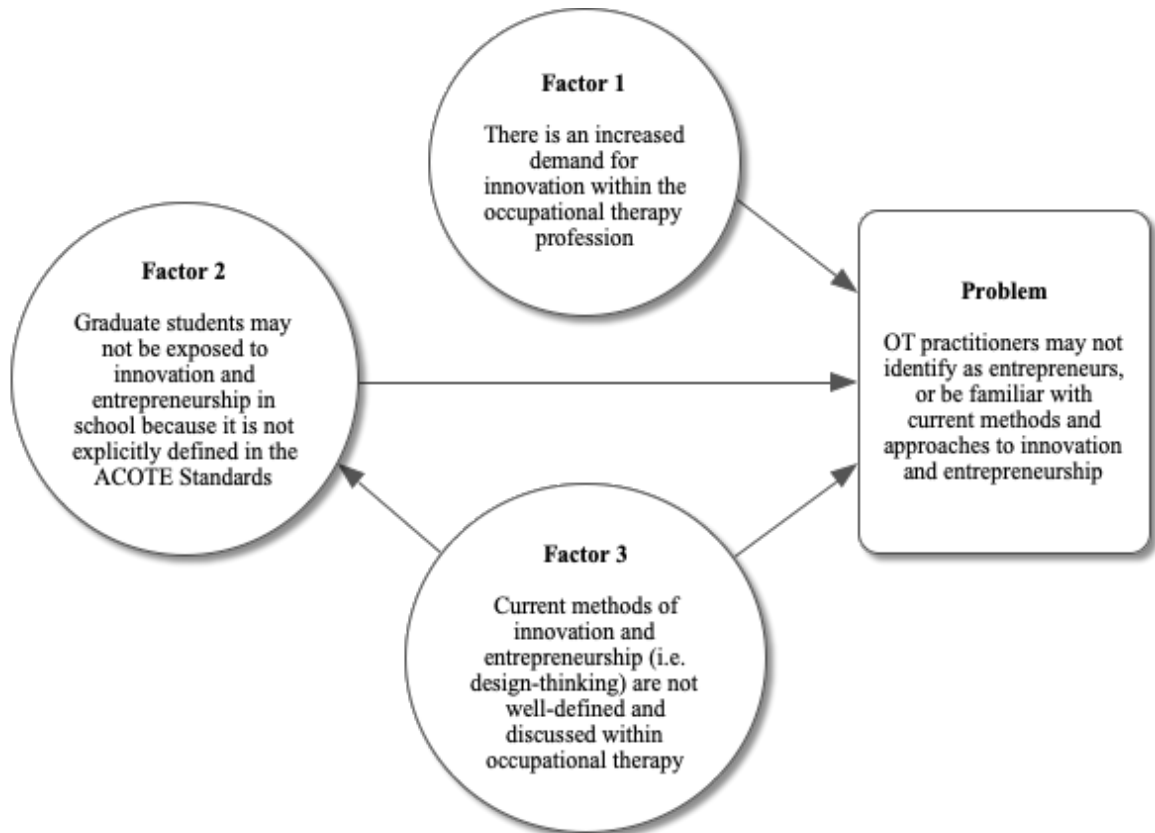
*Embracing Entrepreneurship: Occupational therapy's introduction to design-thinking for innovation* is an evidence-based continuing education (CE) course that helps early stage OT entrepreneurs research and build innovative solutions to problems they are passionate about solving through application of design-thinking principles. Through investigation of evidence and best practices in entrepreneur education, a teaching model for OT entrepreneurship education was developed that draws parallels between the occupational therapy and design-thinking processes and is informed by adult learning theory.

This project recognizes that not every practitioner may desire to be an entrepreneur but opportunity to build entrepreneurial awareness is critical for the advancement of the profession. *Embracing Entrepreneurship's* open-source mini-course provides an introduction to the need for OT entrepreneurs and entrepreneurial idea generation for all OT practitioners. The full-length *Embracing Entrepreneurship* course guides participants through application of the design-thinking process through access to

multimedia content, weekly assignments, and virtual meetings. The self-guided modules are designed to be completed at the learner's own pace, and allows them to develop a unique entrepreneurial venture addressing a need they find personally meaningful.

*Embracing Entrepreneurship* aims to bridge the entrepreneurial knowledge gap OT practitioners face, and equips them to be innovative, creative, collaborative problem-solvers. It aims to build entrepreneurial awareness and confidence among OT entrepreneurs, leading to increased career satisfaction, increased awareness of the value of occupational therapy, and ultimately, an increased number of OT entrepreneurs.

## APPENDIX A: Causal model of the problem



## APPENDIX B: Search strategy report for Factor 1

**Question 1:** *Is there evidence that there is an increased demand for leadership and innovation within the field of occupational therapy?*

<b>Search Strategy Report for Factor 1</b>			
<i>*Denotes a duplicate, relevant article retrieved from previous searches</i>			
Search Method	Keywords/ MeSH terms used	Total # citations	Relevant citations received
CINAHL	Leadership, innovation, occupational therapy	51	Copolillo et al. (2010) Heard (2014) Hinojosa (2007) Moyers (2007) Kerr et al. (2015)
PsycINFO	Leadership, innovation, occupational therapy	7	*Hinojosa (2007)
Education Full Text	Leadership, innovation, occupational therapy	121	*Hinojosa (2007) *Moyer (2007) *Kerr et al. (2015)
PubMed	Leadership, innovation, occupational therapy	23	Hinojosa, J (2007) Moyers (2007)
AJOT	Leadership, innovation	57	Lamb (2016) Lamb (2017) Lamb (2018) Stoffel (2015) Braveman (2016) Leland et al. (2015) Mitcham (2014) Anderson & Nelson (2011) Hinojosa (2012) *Hinojosa (2007)

### APPENDIX C: Search strategy report for Factors 2 & 3

**Question 2:** *Is there evidence graduate students may not be exposed to current trends in innovation and entrepreneurship?*

**Question 3:** *Is there evidence that current trends in entrepreneurship are not well-defined in occupational therapy?*

Search Strategy Report for Factors 2 & 3			
<i>*Denotes a duplicate, relevant article retrieved from previous searches</i>			
Databases searched	Keywords/ MeSH terms used	Total # citations	Relevant citations received
CINAHL	Occupational therapy AND Entrepreneur	29	<b>Relevant to Factor 3</b> Foto (1998) Stickley & Hall (2017)  *Anderson & Nelson (2011) *Kerr et al. (2015)
PsycINFO	Occupational therapy AND Entrepreneur	3	<i>No relevant evidence retrieved</i>
Education Full Text	Occupational therapy AND Entrepreneur	20	<b>Relevant to Factor 2</b> McClure (2011)  *Anderson & Nelson (2011) *Kerr et al. (2015) *Foto (1998) *Stickley & Hall (2017)
PubMed	Occupational therapy AND Entrepreneur	9	*Anderson & Nelson (2011) *Foto (1998)
AJOT	Occupational therapy AND Entrepreneur	5	<b>Relevant to Factor 2</b> Latcher & Szymanska (2016)
CINAHL, PsycINFO, Education Full Text	Innovation AND occupational therapy	221	<b>Relevant to Factor 2</b> Collins, Harrison, Mason, & Lowden (2011)  <b>Relevant to Factor 3</b> Holmes & Scaffa (2009)  *Lamb (2018)

AJOT	Innovation AND education [Research Articles]	124	<b>Relevant to Factor 2</b> Brandt (2014)  Lamb (2018)*
CINAHL, PsycINFO, Education Full Text	Strategic planning AND occupational therapy	221	<b>Relevant to Factor 3</b> Deisher (2013) Gilbert Hunt (2017)  *Stoffel (2015)
CINAHL, PsycINFO, Education Full Text	Critical thinking skills AND Occupational therapy	47	<i>No relevant evidence retrieved</i> ]

**APPENDIX D: Coursework relevant to entrepreneurship offered at the Top 10 occupational therapy graduate programs**

<b>University Name</b>	<b>Coursework relevant to entrepreneurship (Course Abstracts)</b> [Keywords: Entrepreneurship, innovation, interdisciplinary, business, marketing, creative, critical thinking, collaboration, program, community]
#1 Boston University	<p><b>OT563: Contexts that Influence OT Practice</b></p> <ul style="list-style-type: none"> <li>● Gain an in-depth understanding of contexts in occupational therapy that relate to service delivery models</li> <li>● Apply their understanding of social policies and healthcare legislation to the delivery of occupational therapy services in those contexts</li> <li>● Review contexts in which occupational therapy is practiced and in emerging practice settings, and the professionals who partner in service delivery in each setting</li> </ul> <p><b>OT586: Professional Service Management</b></p> <ul style="list-style-type: none"> <li>● Detailed discussions, teamwork, practical case study experiences, as well as oral and written assignments will guide the soon-to-be entry-level occupational therapist to effectively manage people and resources, and to understand political, regulatory, economic, and social forces that are affecting a constantly changing and often complex health and rehabilitation environment.</li> <li>● Emphasis is on advocacy and legislation, reimbursement, financial planning, personnel management, leadership, negotiation skills, conflict resolution, ethics, grant writing, starting up a new program, business or practice, entrepreneurship, and marketing.</li> </ul>
#1 Washington University of St. Louis	<i>Course titles and abstracts unavailable on university website</i>
#3 University of Southern California (USC)	<p><b>OT537: Occupation-Centered Programs for the Community</b> Development of a proposal for new or extended services; includes trends analysis, needs assessment, literature review, marketing plan, mock funding request, program evaluation and presentation. Open only to occupational therapy majors.</p> <p><b>OT576: Universal Design</b> Examination of the concepts and principles of universal design and the</p>

	<p>benefits of the approach for people with disabilities and for all individuals.</p> <p><b>OT 583: Lifestyle Redesign</b> Seminar examining occupations and lifestyle redesign as a contribution to health and well-being. Topics include therapeutic process, needs assessment, design and marketing of lifestyle modules.</p>
#4 University of Illinois at Chicago (UIC)	<p><b>OT561: Disability and Community Participation: Policy, Systems Change, and Action Research.</b> Focuses on the critical examination of disability policy, activism, and research. Emphasis on conducting participatory action research in collaboration with constituents with disabilities, community organizations, and policy makers</p> <p><b>OT564: Leadership and Management in Occupational Therapy</b> Overview of issues related to management and leadership in varied settings in which occupational therapists practice. Topics include, but are not limited to, management functions, service planning, quality improvement, and financial management</p> <p><b>OT524: Contexts of Occupational Therapy Practice.</b> Trends in health care, reimbursement, legislation, and disability policy and how they affect occupational therapy. The policy process and development of an advocacy role are explored. Exposure to community-based practice and consultation roles.</p>
#4 Pittsburgh University	<p><b>OT3203: Advanced Concepts in Professional and Clinical Reasoning</b> Uses case-based methods, evidence synthesis, and critical thinking to derive evidence-based and sustainable solutions to real-world complex clinical challenges in evaluation and intervention, and to develop clinical protocols and best practice guidelines for the implementation of the solutions.</p>
#6 Colorado State University	<p><i>Course titles and abstracts unavailable on university website</i></p>
#6 Thomas Jefferson University	<p><b>OT732: Contemporary Practice Concepts</b> In this course students explore and apply contemporary practice concepts, language, and models to the practice of occupational therapy. Through a series of learning activities, students develop digital age information literacy to support scholarship and clinical reasoning development.</p>



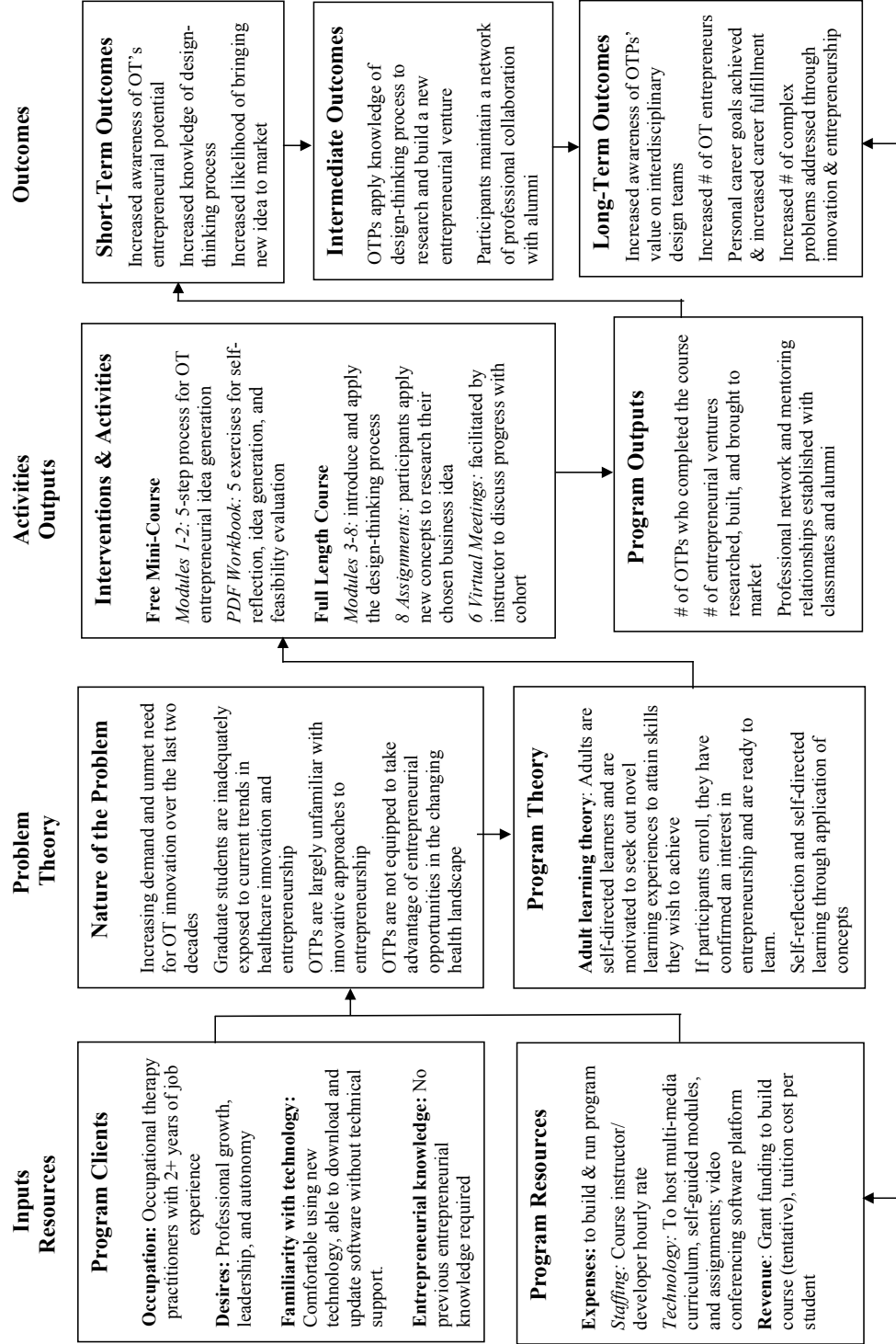
	<p><b>OT807: Interprofessional Partnerships</b>  In this course students will explore the dynamics involved with forming collaborative partnerships, working in teams, and expanding one's professional network. Through course readings, activities, and assignments completed in the student's work environment, students will develop skills in teamwork, consensus building, conflict management, negotiation, and consultation</p> <p><b>OT815: Emerging Practice &amp; Entrepreneurship</b>  This course will apply an entrepreneurial framework to developing the role of occupational therapy in health maintenance and promotion, through an awareness of individual and population-based needs in the current healthcare environment. Students will apply principles of lifestyle medicine, develop programs for non-traditional practice settings, and explore funding sources to support the inclusion of occupational therapy as a member of the health care team.</p> <p><b>Advanced Practice Certificate for Healthcare Professionals: Using Design in Healthcare Delivery (Course credits can be applied toward pp-OTD program)</b></p> <p><b>JCRS 740: Design Approaches in Healthcare</b>  This course provides the foundation for incorporating design into practice through the introduction and application of design research strategies, user research methods, problem definition, idea generation, and physical prototyping. During this course, students will attend the first on-campus workshop involving an intensive boot camp incorporating hands-on instruction, training in materials and prototyping, collaborative work with industrial design students, and project presentations.</p> <p><b>JCRS 741: New Methods for Assistive Technology Creation</b>  To facilitate leading edge utility of technology in healthcare, the second course (Spring Semester, 8-weeks) provides instruction on the application of 3D printing to address a variety of clinical problems. Through software tutorials students will gain comfort with 3D printing technology in preparation for attending the second on-campus workshop involving a 3-day weekend session on campus to work directly with 3D printers.</p> <p><b>JCRS 742: Scaling Up and Finding a Market</b>  The third course will build knowledge around manufacturing principles, materials, and methods as well as provide an overview of business models and approaches to commercialization. The goal of this course is</p>
--	---

	<p>to remove common stumbling blocks that often prevent the full distribution of potentially impactful design ideas.</p> <p><b>JCRS 743: Quality Improvement through Design</b>  The fourth course (Summer Semester, 8-weeks), will serve as a summative course while introducing additional design strategies that are of particular importance when addressing issues on an organizational scale. Students will build on content from past courses and utilize design research tools to assess needs within their professional organization, generate ideas, and trial potential solutions with colleagues. During the course, students will participate in the third on-campus workshop involving a 2-day session to present their final projects and highlight their work in the program.</p>
<p>#6  Tufts  University</p>	<p><b>OTS204: Topics in Emerging Practice Areas</b></p> <ul style="list-style-type: none"> <li>● The first of several courses in the curriculum to address innovative, non-traditional, community-based practice areas for occupational therapists. Building on their understanding of occupation, students will explore trends within the current practice of occupational therapy and formulate opportunities for future practice.</li> <li>● Current practitioners exploring OT practice in areas like adaptive sports, animal assisted therapy, domestic violence, homelessness and sexual health will present to students. As part of this course, students in small groups will complete an initial needs assessment exploring the role of occupational therapy in a particular area of emerging practice.</li> </ul> <p><b>OTS233: Occupational Therapy Management and Administration</b>  The philosophy of healthcare delivery in the United States, both institutional and community. Principles of management within the institutional and community health care system, including moving from clinician to manager, managerial roles, marketing, financial management of an occupational therapy department, staff development, recruitment and retention, ethics in the workplace, and professional issues.</p>
<p>#9  University of  Kansas  Medical  Center</p>	<p><i>Course abstracts unavailable on university website. The following course titles retrieved suggest that underlying themes of interprofessional collaboration, leadership, communication, and community program development are embedded into curricula. They do not suggest that current trends in social innovation and entrepreneurship, and occupational therapy's role are discussed.</i></p>

	<p><b>OTDE710: Professionalism in Context I: Interpersonal and Interprofessional</b>  <b>OTDE711: Professionalism in Context II: Leadership</b>  <b>OTDE 800: Professional communication</b>  <b>OTDE850: Professionalism in Administration</b>  <b>OTDE856: Program Evaluation and Development</b>  <b>OTDE 870: Contemporary Community Engagement</b></p>
<p>#9  University of North Carolina (UNC) Chapel Hill</p>	<p><i>Of the limited course abstracts were available on university website for review., none were found explicitly or implicitly relevant to entrepreneurship. An outline of “curriculum themes and broad learning objectives” was reviewed. Relevant themes and outcomes are outlined below.</i></p> <p><b>Theme: Leadership and Collaboration</b>  Learning outcomes:</p> <ul style="list-style-type: none"> <li>● Apply principles of professional conduct, communication and collaboration to optimally meet societal, community and individual needs.</li> <li>● Apply principles of professional behavior, standards and roles in occupational therapy to represent the values of the profession to external audiences.</li> <li>● Create, evaluate, and implement potential applications of occupational therapy to areas of human need through system consultation, policy development, program development, supervision, and/or education.</li> <li>● Apply entry-level skills in personnel management, facilitation of others’ professional development and organizational leadership.</li> <li>● Understand professional responsibility in acquisition and stewardship of resources—including fiscal/capital assets, people, and the natural environment—to meet the occupational needs of present and future clients.</li> </ul>

## APPENDIX E: Logic Model

**Program Title:** Embracing Entrepreneurship: Occupational therapy's introduction to design-thinking for innovation



**External/Environmental Factors:** Online platform/ technological malfunctions, increased fee for use of platforms, competing and/or similar programs, course content not meeting expectations

## APPENDIX F: Examples of Mini-Course reflection activities

### Self-Reflection #1

Set your entrepreneurial goals & envision your future

**Step 1:** Start by jotting down 5-10 reflections on your current state. How are you feeling about your life, personally and professionally at this very moment? Are there things you wish you were doing more of?

**Step 2:** Now with your current state in mind, envision your desired future. How will each of these look different for you in the future?

**Step 3:** Review the changes you wish to make in the future. Choose 3-5 that resonate with you the most, and generate a goal for each of them.

I am currently...	In the future, I will...
<ol style="list-style-type: none"> <li>1. <i>Unfulfilled with the routine of my job</i></li> <li>2. <i>Not feeling appreciated for the program I developed</i></li> <li>3. <i>Feeling frustrated by the lack of growth in my current job</i></li> <li>4. <i>Upset I can't be home when my kids get off the bus</i></li> <li>5. <i>Not tapping into my creativity at work</i></li> </ol>	<ol style="list-style-type: none"> <li>1. <i>Have a career where I wear many different hats</i></li> <li>2. <i>Be seen as an expert in what I do</i></li> <li>3. <i>Have several possibilities for continued professional growth</i></li> <li>4. <i>Have more schedule flexibility to spend time with my family</i></li> <li>5. <i>Tap into my creativity daily in my work</i></li> </ol>
<b>My Entrepreneurial Goals</b>	
<ol style="list-style-type: none"> <li>1. <i>Generate enough income to pay off my student loans</i></li> <li>2. <i>Be able to pick up my kids from school everyday</i></li> </ol>	

## Self Reflection #2

*Your Triple P: Personal & Professional Passions*

Before you begin generating ideas for your new venture, answer the following questions... twice. You can complete these in any order, and list more than three if you'd like! Your responses can be big, small, complex, simple, related, or random. Be honest and truthful, no one's looking at these answers but you!

	<b>Personal</b>	<b>Professional</b>
<p>What are the top three things you are <b>passionate</b> about?</p>	<p><i>Optimizing my health mentally &amp; physically, traveling, helping the increasing homeless population in my community</i></p> <p>1. 2. 3.</p>	<p><i>Ensuring every child feels included and safe, inspiring curiosity and creativity, advocating for reasonable and appropriate accommodations for students</i></p> <p>1. 2. 3.</p>
<p>What are the top three things that <b>excite</b> you?</p>	<p><i>Reconnecting with nature, when I master a new yoga pose, when I find a good deal</i></p> <p>1. 2. 3.</p>	<p><i>When I introduce a child to a new activity they enjoy, when a parent or teacher finds my suggestions valuable, finding a great fine motor craft on pinterest!</i></p> <p>1. 2. 3.</p>
<p>What are the top three things you <b>enjoy</b> doing?</p>	<p><i>Preparing healthy meals for myself and others, dedicating time to paint or create, spending time with my church community</i></p> <p>1. 2. 3.</p>	<p><i>Mentoring new graduates, collaborating with teachers to develop curricula, working outdoors with children</i></p> <p>1. 2. 3.</p>

## EXECUTIVE SUMMARY

Occupational therapy practitioners (OTPs) are experts in making a match between complex people and complex environments. The client-centered foundation of the occupational therapy profession equips practitioners to identify problems and develop meaningful solutions (Anderson & Nelson, 2011). Possessing this highly generalizable skill set, OTPs are able to address the needs of individuals, groups, and populations across the lifespan in a full spectrum of practice areas. With societal shifts towards value-based care and an increasing demand to address the needs of population health, these skills are incredibly valuable for health providers. However, the value of the occupational therapy skill set remains widely unknown and somewhat ambiguous. Some field experts argue that the profession is in need of a revolution, including radical change in service design and in the business models used to support new methods of service delivery (Mitcham, 2014, Moyers, 2007).

Entrepreneurship—similarly ambiguous—and has no single commonly accepted definition (Boore & Peter, 2010). Although an “entrepreneur” has been defined as “one who organizes, manages, and assumes the risks of a business or enterprise”, assuming the role of an entrepreneur is much more complex (Merriam Webster, 2019).

Entrepreneurship refers to an individual’s ability to turn ideas into action, which requires creativity, innovation, calculated risk taking and project planning (Boore & Peter, 2010).

Entrepreneurship is becoming increasingly important within innovative developments in medical science, research, and policy — all attributing to the rapidly changing healthcare landscape (Boore & Porter, 2011; Niccum et al., 2017). As a result,

there is an increasing need for entrepreneurial thinking healthcare leaders willing to challenge the status quo, shift health provider culture, and drive change to enhance the quality of care (Arnaert et al., 2018; Boore & Porter, 2011; Eddy & Stellefson, 2009; Salminen et al., 2014; Martin et al., 2016; Niccum et al., 2017; Vannucci & Weinstein, 2017).

The client-centered, problem-solving nature of the profession has enabled OTPs to create significantly valuable solutions for new populations. However, they tend to perceive themselves simply as “allied” health professionals who have discovered opportunities to practice occupational therapy in new contexts, when in reality they have stepped into the role of an entrepreneur (Foto, 1998). Some argue there appears to be an unspoken enmity toward identifying as an entrepreneur due to the tension of the helping nature of the profession and generating a profit (Arnaert et al., 2017; Boore & Porter, 2011; Foto 1998; Vannucci & Weinstein, 2017). Despite being a motivating byproduct, entrepreneurship can offer health providers much more than financial security. Embracing the “entrepreneurial mindset” allows health providers to make a more significant impact, achieve greater career and life satisfaction, and experience an enhanced sense of empowerment (Boore & Porter, 2011; Salminen et al., 2014; Vannucci & Weinstein, 2017).

As entrepreneurship becomes increasingly necessary for innovation, opportunities for entrepreneurship for healthcare professionals will continue to expand (Arnaert et al., 2018; Boore & Porter, 2011; Eddy & Stellefson, 2009; Salminen et al., 2014; Martin et al., 2016; Niccum et al., 2017). However, the evidence research suggests that OTPs may



not be equipped with the foundational skills needed to take advantage of these entrepreneurial opportunities in the healthcare landscape (Anderson & Nelson, 2011; Foto, 1998). Entrepreneurship education is one of the fastest growing fields of education globally (Higgins et al., 2013; Sirelkhatim & Gangi, 2015; Mehta et al., 2016; Miller et al., 2012; Vakili et al., 2016), yet the necessary competencies for the occupational therapy entrepreneur are little understood and not well-defined within the profession (Foto, 1998; AOTA, 2010).

The American Occupational Therapy Association's (AOTA) *Blueprint for Entry-Level Education* (2010) suggests "entrepreneurial skills" and "business fundamentals" are taught in graduate occupational therapy programs, however the evidence literature documenting occupational therapy graduate students' exposure to entrepreneurship is quite limited. According to a survey conducted by Anderson & Nelson (2011), occupational therapy entrepreneurs overwhelmingly agree they received inadequate business education and limited professional support.

For over a decade, occupational therapy educators have been urged to explore alternative teaching and learning theories beyond the domain of occupational therapy in order to develop new curricula that give students the knowledge and skills to succeed in a rapidly changing world (Hinojosa, 2007). However, an internet search revealed only two of the top ten occupational therapy graduate programs explicitly mention the topic of entrepreneurship (Boston University, n.d.; Jefferson College of Rehabilitation Sciences, n.d.), and three programs implicitly imply learning through introductory business topics such as "creating a business plan" (Tufts University, n.d.; USC Chan Division of

Occupational Science and Occupational Therapy, n.d.; University of Illinois at Chicago, n.d.).

For the experienced OTP and adult learner seeking relevant and innovative continuing education, very few online courses exist on the topic of entrepreneurship. The majority of the existing courses are disseminated as a single recorded lecture, provide only introductory knowledge “about” entrepreneurship, and put heavy emphasis on business plan creation and opening a private practice (Ainsworth & Wagenfeld, n.d.; Covell-Pierson, n.d.; Crossroads, n.d.; Gash, n.d.; Kornblau, n.d.; Richardson, 2019). However, the evidence research suggests that traditional pedagogical teaching methods inadequately expose students to the various types of entrepreneurship and encourage entrepreneurial behavior (Higgins et al., 2013; Salminen et al., 2014; Sirelkhatim & Gangi, 2015).

The proposed program, *Embracing Entrepreneurship: Occupational therapy’s introduction to design-thinking for innovation* is a two-part interactive online continuing education course that supports early stage occupational therapy entrepreneurs through reflection, research, and creative collaboration in order to develop a new entrepreneurial venture.

Design-thinking is a interdisciplinary and human-centered approach to problem solving that emphasizes the importance of developing a deep understanding of peoples’ needs in order to develop effective solutions, and increasingly being used across diverse professions (Daniel, 2016; IDEO, n.d.; Linton & Klinton, 2019; Nielsen & Stovang, 2015; Roberts et al., 2016). Developing empathy for the desired clients or users,

participation in radical interdisciplinary collaboration, and engaging in rapid prototyping are core tenets of design thinking that can help solve some of healthcare's greatest and most complex problems (Beaird, Geist, & Lewis, 2018; Carmel-Gilfilen & Portillo, 2016; Van de Grift & Kroeze, 2016).

Design-thinking methodology was chosen for this course based on the evidence research and its organic alignment with the occupational therapy process. At the foundational level, design-thinking is concerned with human needs and solving problems (Linton & Klinton, 2019), making it extremely well-suited as an approach to entrepreneurship education for healthcare professionals.

The instructional design of this course is developed for the adult learner with work and leadership experience who has already developed an interest in starting a new entrepreneurial venture of their own. Ideal participants are OTPs who able to dedicate 5-7 hours per week to the coursework and highly motivated to do so. Theory-driven by adult learning theory, *Embracing Entrepreneurship* provides participants with the flexibility to complete modules and assignments at their own pace, and apply course content to develop a unique entrepreneurial venture addressing a need they find personally meaningful. The course also provides several opportunities to reflect on previous experience, clinical strengths, and personal values for entrepreneurial idea generation.

This two-part course will consist of eight modules. The first two modules of this course will be offered as a free mini-course with rolling admission. In these modules, OTPs will be informed of the increasing need for entrepreneurship and innovation within the profession and how embracing entrepreneurship may lead to increased job

satisfaction, fulfillment, and leadership opportunity. They will also complete 3 self-reflection exercises, generate 3 “high potential” business ideas, and evaluate the need and growth potential of their business ideas. By launching the free mini-course prior to the full-length course, OTPs with various levels of curiosity and interest in entrepreneurship will have the opportunity for exploration and exposure without financial risk or timed completion of assignments. Additionally, valuable demographic survey data will be collected to analyze motivations for pursuing entrepreneurship within the profession, and to assess the effectiveness of course content. Feedback from the mini-course evaluation will also help inform revisions of the content provided in both the mini-course and full-length course.

Unlike the rolling admission of the free mini-course, paid participants of the full-length course will join a course cohort for its six-week duration. They will be expected to complete one module per week and corresponding assignments at their own pace, and have the opportunity to join weekly virtual discussions with their cohort and instructor.

During these six weeks, participants will be provided with an introduction to the design-thinking process for occupational therapy entrepreneurship, and have the opportunity to engage in each of the five steps of the design-thinking process — empathize, define, ideate, prototype, and test — in order to refine and develop an entrepreneurial venture of their choosing.

A significant amount of time and financial resources are required to create this program. It is estimated that Year 1 expenses will total \$20,215, however by Year 2 it is estimated that this program will generate \$1,090 in gross profit. Potential funding sources

are currently being investigated, including several grants offered at Boston University and through AOTA.

The delivery method chosen for *Embracing Entrepreneurship* was designed for its scalability. Initial cohorts of this program will have a small number of participants and require an estimated eight hours per week of the course instructor for live discussion facilitation, email correspondence, and marketing. As the course matures, the course instructor will have the opportunity to enroll larger cohorts and facilitate multiple cohorts simultaneously.

Over time, the quality of the course content will continually be revised. Inclusion of guest lectures from interdisciplinary industry leaders may also be offered in the course. As the quality and value of course content increases, a higher tuition cost will be justified.

Although the primary audience for *Embracing Entrepreneurship* is occupational therapy practitioners, the evidence suggests that there is also an increasing need for entrepreneurship education for diverse healthcare leaders to enhance the quality of care. This program aims to bridge this entrepreneurial knowledge gap by equipping diverse health providers to be innovative, creative, collaborative problem-solvers capable of solving some of the populations' most complex health challenges.

## References

- Ainsworth, E. & Wagenfeld, A. (2016). Webcast: Setting up a home modifications business. Retrieved from [https://myaota.aota.org/shop\\_aota/product/WA1223](https://myaota.aota.org/shop_aota/product/WA1223)
- American Occupational Therapy Association (2010). Blueprint for Entry-Level Education. *American Journal of Occupational Therapy*, 64, 186-203. <https://doi.org/10.5014/ajot.64.1.186>
- Anderson, M. & Nelson, D. (2011). Wanted: Entrepreneurs in occupational therapy. *American Journal of Occupational Therapy*, 65(2), 221-228. doi: 0.5014/ajot.2011.001628
- Arnaert A., Mills, J., Sol Bruno, F., Ponzoni. (2018) The educational gaps of nurses in entrepreneurial roles. *Journal of Professional Nursing*, 34, 594-401, doi: 10.1016/j.profnurs.2018.03.004
- Beaird, G., Geist, M., & Lewis, E. (2018). Design thinking: Opportunities for application in nursing education. *Nurse Education Today*, 64, 115, doi: 10.1016/j.nedt.2018.02.007
- Boston University. (n.d.). Boston university entry-level OTD Curriculum. Retrieved from <http://www.bu.edu/sargent/academics/departments-programs/occupational-therapy/entryotd/curriculum/>
- Boore, J. & Porter, S. (2011) Education for entrepreneurship in nursing. *Nurse Education Today*, (31) 184-191, doi:10.1016/j.nedt.2010.05.016

- Covell-Pierson, K. (n.d.) Entrepreneurship for the OT Professional [Abstract]. Retrieved from <https://www.occupationaltherapy.com/ot-ceus/course/entrepreneurship-for-the-ot-professional-3849>
- Crossroads Hospice, (n.d.) Certificate in starting your own business in health and healing. Retrieved from <https://crhcf.org/continuing-education-certificates/certificate-in-starting-your-own-business-in-health-and-healing/>
- Eddy, J., & Stellefson, M. (2009). Entrepreneurship in Health Education and Health Promotion: Five Cardinal Rules. *Health Promotion Practice, 10*(3), 333-341, doi: 10.1177/1524839907300805
- Entrepreneur. In *The Merriam-Webster.com Dictionary*. Retrieved online November 21, 2019, from <https://www.merriam-webster.com/dictionary/entrepreneur>
- Foto, M. (1998). Competence and the occupational therapy entrepreneur. *The American Journal of Occupational Therapy, 52*(9), 765-9, doi: 10.5014/ajot.52.9.765
- Gash, J. (n.d.) Growing potential: Creating a sustainable, flourishing business. Retrieved from <https://growing-potential.thinkific.com/courses/growing-potential-create-a-flourishing-business>
- Higgins, D., Smith, K., & Mirza, M. (2013). Entrepreneurial Education: Reflexive Approaches to Entrepreneurial Learning in Practice. *The Journal of Entrepreneurship, 22*(2), 135-160. doi: 10.1177/0971355713490619
- Hinojosa, J. (2007). Becoming innovators in an era of hyperchange. Eleanor Clarke Slagle Lecture. *American Journal of Occupational Therapy, 61*, 629–637. doi:10.5014/ajot.61.6.629

- IDEO. (n.d.). Design Thinking. Retrieved online November 19, 2019 from  
<https://designthinking.ideo.com/>
- Jefferson College of Rehabilitation Sciences (n.d.) Advanced practice certificate in using design in healthcare delivery curriculum. Retrieved from  
<https://www.jefferson.edu/university/rehabilitation-sciences/departments/design-in-healthcare-delivery/curriculum.html>
- Kornblau, B. (n.d.) Starting a private practice: Following your occupational therapy dream- Part 2. Retrieved from <https://www.occupationaltherapy.com/ot-ceus/course/starting-private-practice-following-your-4261>
- Linton, G., & Klinton, M. (2019). University entrepreneurship education: A design thinking approach to learning. *Journal of Innovation and Entrepreneurship*, 8(1), 1-11, doi: 10.1186/s13731-018-0098-z
- Martin, W., Mazzeo, J., & Lemon, B. (2016). Teaching Public Health Professionals Entrepreneurship: An Integrated Approach. *Journal of Enterprising Culture*, 24(2), 193-207, doi: 10.1142/S0218495816500084
- Miller, T., Wesley, C., Williams, D. (2012) Educating the minds of caring hearts: Comparing views of practitioners and educators on the importance of social entrepreneurship competencies. *Academy of Management Learning and Education*, 11(3), 349-370, doi: 10.5465/amle.2011.0017
- Mitcham, M. D. (2014). Education as engine (Eleanor Clarke Slagle Lecture). *American Journal of Occupational Therapy*, 68, 636–648. doi:10.5014/ajot.2014.686001



- Mehta, A., Yoon, E., Kulkarni, N., & Finch, D. (2016). An exploratory study of entrepreneurship education in multi-disciplinary and multi-cultural environment.. *Journal of Entrepreneurship Education, 19*(2), 120-138.
- Moyers, P.A. (2007). The innovation imperative. *Occupational Therapy In Health Care, 21*(1-2), 291-294, doi: 10.1080/J003v21n01\_28
- Niccum, B., Sarker, A., Wolf, S., & Trowbridge, M. (2017). Innovation and entrepreneurship programs in US medical education: A landscape review and thematic analysis. *Medical Education Online, 22*(1).  
doi:10.1080/10872981.2017.1360722
- Nielsen, S. & Stovang, P. (2015) DesUni: University entrepreneurship education through design-thinking. *Education + Training, 57*(8/9), 977-991.  
doi:10.1108/ET-09-2014-0121
- Richardson, K. (2019) Wanted: Innovative and out of the box entrepreneurs in occupational therapy. Retrieved from <https://otceus.com/emerge/>
- Roberts, P., Bridgwood, B., Jester, R. (2009) Development of entrepreneurial activity in nurse education. *Nursing Standard, 23*(28), 35-41.  
doi:10.7748/ns2009.03.23.28.35.c6922
- Salminen, L., Lindberg, E., Gustafsson, M., Heinonen, J., & Leino-Kilpi, H. (2014). Entrepreneurship Education in Health Care Education. *Education Research International. doi:10.1155/2014/312810*
- Sirelkhatim, F. & Gangi, Y. (2015). Entrepreneurship education: A systematic literature review of curricula contents and teaching methods. *Cogent Business &*

*Management*, 2(1). doi:10.1080/23311975.2015.1052034

Tufts University (n.d.) Department of occupational therapy: entry-level doctoral program: courses. Retrieved from <https://ase.tufts.edu/occupationalTherapy/programs/ELOTDCourses.htm>

The University of Illinois at Chicago. (n.d.) Occupational therapy (OT) courses. Retrieved from <https://catalog.uic.edu/all-course-descriptions/ot/>

USC Chan Division of Occupational Science and Occupational Therapy. (n.d.) Course descriptions. Retrieved from <https://chan.usc.edu/academics/course-descriptions>

Vakili, F., Tahmasebi, N., Tahmasebi, S., & Tahmasebi, D. (2016).

Role of Education in Entrepreneurship Development. *Journal of Ecophysiology and Occupational Health*, 16(3/4), 78-87. doi:10.18311/jeoh/0/16046

Van de Grift, T., & Kroeze, R. (2016). Design Thinking as a Tool for Interdisciplinary Education In Health Care. *Academic Medicine.*, 91(9), 1234-8.

doi:10.1097/ACM.0000000000001195

Vannucci, M., & Weinstein, M. (2017). The nurse entrepreneur: Empowerment needs, challenges, and self-care practices. *Nursing: Research and Reviews*, 7, 57-66.

doi:10.2147/NRR.S98407

## FACT SHEET

### Embracing Entrepreneurship: Occupational Therapy's introduction to design-thinking for innovation



Gigi Jordan MS, OTR/L  
OTD, Candidate



#### The Problem: Untapped entrepreneurial potential within the OT Profession

Occupational therapy practitioners are unaware of their entrepreneurial potential and not equipped to take advantage of opportunities in the changing healthcare landscape

1

There is an increasing need for entrepreneurial healthcare leaders willing to challenge the status quo, shift health provider culture, and drive change to enhance the quality of care

- Entrepreneurial opportunities for healthcare providers are expanding
- Entrepreneurship is becoming increasingly necessary for innovation

2

Current trends in entrepreneurship (e.g., design-thinking) are neither well-defined or discussed within the occupational therapy (OT) profession and literature

- There is an extremely limited body of OT literature published on entrepreneurial methodologies in education or in practice

3

OT graduate students are inadequately exposed to innovative approaches to entrepreneurship and examples of entrepreneurial success

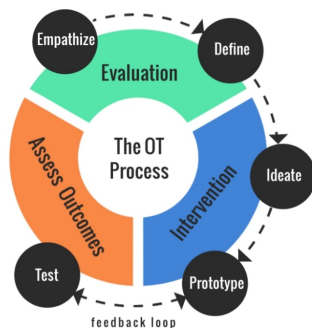
- Necessary competencies for the OT entrepreneur are little understood and not well-defined within the profession

**An entrepreneurial mindset builds leadership capacity, and empowers health providers to make a more significant impact and achieve greater career satisfaction**



#### The Solution: Embracing Entrepreneurship

A continuing education course that guides early stage OT entrepreneurs through the design-thinking process to research and build innovative business ideas



#### What is design-thinking?

- Design-thinking is an interdisciplinary and human-centered approach to problem solving that emphasizes the importance of developing a deep understanding of peoples' needs to develop meaningful solutions
- Design-thinking principles are increasingly being taught and applied in entrepreneurship education
- This program emphasizes the similarities between the design-thinking and occupational therapy processes, and proposes its use in occupational therapy entrepreneurship education

## Overview of Coursework

## Application of Adult Learning Theory

### Free Mini-Course Modules 1 & 2

- Introduces the need for OT entrepreneurs in the changing health landscape
- Access to multimedia content on 5-step process for OT entrepreneurial idea generation
- 5 exercises for self-reflection, idea generation, and feasibility evaluation

### Full-Length CE Course Modules 3-8

- Introduction to the design-thinking process and its congruity with the OT process
- Participants apply design-thinking process and human-centered design principles to build a new venture
- Weekly assignments & virtual meetings to apply new concepts

### Adults are self-directed & problem oriented learners

They bring valuable experience to the learning environment and seek information they can directly apply to problems they are facing

### This course...

- Contains self-guided modules & assignments to be complete at learner's own pace
- Provides opportunities to reflect on previous experiences, clinical strengths, and personal values for entrepreneurial idea generation
- Allows participants to apply course content to develop a unique entrepreneurial venture addressing a need found personally meaningful
- Creates opportunity for optional participation in virtual discussions to get feedback, share ideas and insights with fellow classmates



### Impact on the occupational therapy profession

Embracing Entrepreneurship equips OT practitioners to be innovative, creative, collaborative problem-solvers capable of solving some of the populations' most complex health challenges

#### 1 Building entrepreneurial awareness & confidence in OT entrepreneurs

OT practitioners strengthen their understanding of innovative entrepreneurial processes and apply their knowledge to develop solutions to problems they're passionate about solving

#### 2 More OT entrepreneurs, increased impact & career satisfaction

As more OT practitioners are able to embrace entrepreneurship, they will solve larger problems for diverse populations—creating a greater impact and leading to a more fulfilling career

#### 3 Developing a teaching model for OT innovation & entrepreneurship

Fusion of design-thinking and human-centered design principles with the OT process provides opportunity for organic exposure to innovation and entrepreneurship in OT education

#### 4 OT's value recognized by interdisciplinary stakeholders

As design team members, OT entrepreneurs will spread awareness of similarities between OT's client-centeredness and human-centered design principles, illustrating the professions' value to diverse professions

### References

- American Occupational Therapy Association. (2017). Occupational therapy practice framework: Domain and process (3rd edition). *American Journal of Occupational Therapy*, 68, S1-S48. doi:10.5014/ajot.2014.682006
- Arnaert A., Mills, J., Sol Bruno, F., Ponzoni. (2018) The educational gaps of nurses in entrepreneurial roles. *Journal of Professional Nursing*, 34, 594-401.
- Boore, J. & Porter, S. (2014) Education for entrepreneurship in nursing. *Nurse Education Today*, (31) 184-191.
- Eddy, J., & Stollefson, M. (2009). Entrepreneurship in Health Education and Health Promotion: Five Cardinal Rules. *Health Promotion Practice*, 10(3), 333-341.
- IDEO Design Thinking. (n.d.). Retrieved November 12, 2019. from <https://designthinking.ideo.com/>
- Knowles, M. (1984). *Andragogy in action: Applying modern principles of adult learning*. San Francisco: Jossey-Bass.
- Martin, W., Mazzeo, J., & Lemon, B. (2016). Teaching Public Health Professionals Entrepreneurship: An Integrated Approach. *Journal of Enterprising Culture*, 24(2), 193-207.
- Salminen, L., Lindberg, E., Gustafsson, M., Heinonen, J., & Leino-Kilpi, H. (2014). Entrepreneurship Education in Health Care Education. *Education Research International*.
- Niccum, B., Sarker, A., Wolf, S., & Trowbridge, M. (2017). Innovation and entrepreneurship programs in US medical education: A landscape review and thematic analysis. *Medica Education Online*, 22(1).
- Vannucci, M., & Weinstein, M. (2017). The nurse entrepreneur: Empowerment needs, challenges, and self-care practices. *Nursing: Research and Reviews*, 7, 57-66.

## REFERENCES

- Ainsworth, E. & Wagenfeld, A. (2016). Webcast: Setting up a home modifications business. Retrieved from [https://myaota.aota.org/shop\\_aota/product/WA1223](https://myaota.aota.org/shop_aota/product/WA1223)
- Al-Atabi M., & DeBoer, J. (2014). Teaching entrepreneurship using massive open online course (MOOC). *Technovation*, 34(4), 261-264. doi:10.1016/j.technovation.2014.01.006
- American Occupational Therapy Association. (2010). Blueprint for Entry-Level Education. *American Journal of Occupational Therapy*, 64, 186-203. doi:10.5014/ajot.64.1.186
- American Occupational Therapy Association. (2017). Occupational therapy practice framework: Domain and process (3<sup>rd</sup> edition). *American Journal of Occupational Therapy*, 68, S1-S48. doi:10.5014/ajot.2014.682006
- American Occupational Therapy Association. (2019). OT Practice magazine. Retrieved From <https://www.aota.org/otpractice>
- American Occupational Therapy Foundation. (2019). Keilhofner doctoral research scholarship. Retrieved online September 23, 2019 from <https://www.aotf.org/Grants/Kielhofner-Doctoral-Research-Scholarship>
- Anders, A. (2015). Theories and applications of massive online open courses (MOOCs) : The case for hybrid design. *The International Review of Research in Open and Distributed Learning*, 16(6). doi:10.19173/irrodl.v16i6.2185

Anderson, M. & Nelson, D. (2011). Wanted: Entrepreneurs in Occupational Therapy.

*American Journal of Occupational Therapy*, 65(2), 221-228.

doi:0.5014/ajot.2011.001628

Arnaert A., Mills, J., Sol Bruno, F., Ponzoni. (2018). The educational gaps of nurses in entrepreneurial roles. *Journal of Professional Nursing*, 34, 594-401, doi:

10.1016/j.profnurs.2018.03.004

Beaird, G., Geist, M., & Lewis, E. (2018). Design thinking: Opportunities for application in nursing education. *Nurse Education Today*, 64, 115,

doi:10.1016/j.nedt.2018.02.007

Blondy, L. (2007). Evaluation and application of andragogical assumptions to the adult online learning environment. *Journal of Interactive Online Learning*, 6(2), 116-

130. Retrieved from <https://www.ncolr.org/jiol/issues/pdf/6.2.3.pdf>

Boston University. (n.d.). Boston university entry-level OTD Curriculum. Retrieved from

<http://www.bu.edu/sargent/academics/departments-programs/occupational-therapy/entryotd/curriculum/>

Boore, J. & Porter, S. (2011). Education for entrepreneurship in nursing. *Nurse Education Today*, (31) 184-191, doi:10.1016/j.nedt.2010.05.016

Brandt, L. (2014). Conference Proceedings—From collaboration to cause: Breaking rural poverty cycles through educational partnerships. *American Journal of Occupational Therapy*, 68, S45–S50. doi:10.5014/ajot.2014.685S01

Braveman, B. (2016). Health Policy Perspectives—Population health and occupational

therapy. *American Journal of Occupational Therapy*, 70. doi:5014/

ajot.2016.701002

BU Digital Learning & Innovation. (2019). Call for proposals. Retrieved online October 3, 2019 from <https://digital.bu.edu/incubator/work-with-us/cfp/#1536783788641-22c377ad-9d1e>

Businessdictionary. (2019). Bootstrapping. Retrieved online September 23, 2019 from <http://www.businessdictionary.com/definition/bootstrapping.html>

Carmel-Gilfilen, C. & Portillo, M. (2016). Designing with empathy: Humanizing narrative for inspired healthcare experiences. *Health Environments Research & Design Journal*, 9(2), 130-146. doi:10.1177/1937586715592633

Casile, M., Lane, M. & Heriot, K. (2014). The miss angel pitch: An entrepreneurial approach to engaging online learners. *Small Business Institute Journal*, 10(1), 25-42. Retrieved from <https://www.sbij.org/index.php/SBIJ/article/viewFile/182/135>

Chou, D. (2018). Applying design-thinking method to a social entrepreneurship project. *Computer Standards & Interfaces*, 55, 73-79. doi: 10.1016/j.csi.2017.05.001

Collins, M., Harrison, D., Mason, R., & Lowden, A. (2011). Innovation and Creativity: Exploring Human Occupation and Professional Development in Student Education. *The British Journal of Occupational Therapy*, 74(6), 304-308. doi:10.4276/030802211X13074383958020

Colorado State University. (n.d.). 2018-2019 course catalog: Department of occupational therapy. Retrieved from <http://catalog.colostate.edu/general/catalog/colleges/health-human-sciences/occupational-therapy/coursestext>

- Copolillo, A., Shepherd, J., Anzalone, M., & Lane, S. J. (2010). Taking on the challenge of the centennial vision: Transforming the passion for occupational therapy into a passion for leadership. *Occupational Therapy in Health Care*. doi:10.3109/07380570903304209
- Covell-Pierson, K. (n.d.). Entrepreneurship for the OT Professional [Abstract]. Retrieved from <https://www.occupationaltherapy.com/ot-ceus/course/entrepreneurship-for-the-ot-professional-3849>
- Crossroads Hospice. (n.d.). Certificate in starting your own business in health and healing. Retrieved from <https://crhcf.org/continuing-education-certificates/certificate-in-starting-your-own-business-in-health-and-healing/>
- Crowdsourcing week. (2019). Retrieved from <https://crowdsourcingweek.com/what-is-crowdsourcing/>
- D.School. (2013). Bootcamp bootleg. Retrieved from <https://static1.squarespace.com/static/57c6b79629687fde090a0fdd/t/58890239db29d6cc6c3338f7/1485374014340/METHODCARDS-v3-slim.pdf>
- Daniel, A. (2016). Fostering an entrepreneurial mindset by using a design thinking approach in entrepreneurship education. *Industry and Higher Education*, 30(3). 215-223. doi:10.1177/0950422216653195.
- Deisher, M. (2013). A systems change: Leading the way to meeting health needs. *Journal of Hand Therapy*, 26(3), 282-286. doi:10.1016/j.jht.2013.03.001
- Dudley Allen Sargent Research Fund. (2019). Retrieved from <https://www.bu.edu/sargent/research/research-funding-administration/dudley-allen-sargent-research->



fund/doctoral-candidate-application-guidelines/

Eddy, J., & Stellefson, M. (2009). Entrepreneurship in health education and health promotion: Five cardinal rules. *Health Promotion Practice, 10*(3), 333-341, doi:10.1177/1524839907300805

Facebook. (2019). Facebook ads manager. Retrieved on-line on December 2, 2019 from <https://www.facebook.com/adsmanager/manage/campaigns?act=22390199394660>  
32

Frey, B., & Alman, S. (2013). Applying adult learning theory to the online classroom. *New Horizons in Adult Education and Human Resource Development, 17*(1), 4-12. doi:10.1002/nha3.10155

Foto, M. (1998). Competence and the occupational therapy entrepreneur. *The American Journal of Occupational Therapy, 52*(9), 765-769. doi:10.5014/ajot.52.9.765

Gash, J. (n.d.) Growing potential: Creating a sustainable, flourishing business. Retrieved from <https://growing-potential.thinkific.com/courses/growing-potential-create-a-flourishing-business>

Gilbert Hunt, S. (2017). Partnership, inclusion and innovation in occupational therapy: Essential or optional ingredients to flourish in a changing environment? *Australian Occupational Therapy Journal, 64*(6), 477-485. doi:10.1111/1440-1630.12439

Heard, C. (2015). Choosing the Path of Leadership in Occupational Therapy. *The Open Journal of Occupational Therapy, 2*(1). <https://doi.org/10.15453/2168-6408.1055>

- Higgins, D., Smith, K., & Mirza, M. (2013). Entrepreneurial education: Reflexive approaches to entrepreneurial learning in practice. *The Journal of Entrepreneurship*, 22(2), 135-160, doi:10.1177/0971355713490619
- Hinojosa, J. (2007). Becoming innovators in an era of hyperchange (Eleanor Clarke Slagle Lecture). *American Journal of Occupational Therapy*, 61, 629–637. doi:10.5014/ajot.61.6.629
- Hinojosa, J. (2012). Personal strategic plan development: Getting ready for changes in our professional and personal lives. *American Journal of Occupational Therapy*, 66(3), e34- e38. doi:10.5014/ajot.2012.002360
- Holmes, W. & Scaffa, M. (2009). An exploratory study of competencies for emerging practice in occupational therapy. *Journal of Allied Health*, 38(2), 81-90.
- Hootsuite (2019). Pick the plan that's right for you. Retrieved online October 14, 2019 from <https://hootsuite.com/plans>
- HSC Media (2019). Book now. Retrieved online October 13, 2019 from [hscmedia.simplybook.me](http://hscmedia.simplybook.me)
- IDEO Design Thinking. (n.d.). Retrieved online November 19, 2019 from <https://designthinking.ideo.com/>
- Kauffman Foundation. (2019). Retrieved online September 23, 2019 from <https://www.kauffman.org/what-we-do/entrepreneurship/how-to-work-with-us#bigidea>
- Kerr, A., Bradley, N., Benton, L., Hackett, J., Daniels N. (2015). Entrepreneurship: Enhancing employability, making social impact. *Book of Abstracts from the*

*College of Occupational Therapists 39th Annual Conference and Specialist*

*Section-Work Annual Conference* (pp. 113-114). Brighton and Sussex, England:

The British Journal of Occupational Therapy. doi:10.1177/0308022615583236

Knowles, M. (1984). *Andragogy in action: Applying modern principles of adult learning*.

San Francisco: Jossey-Bass.

Knowlton, J. (n.d.). The Mindset of a Social Entrepreneur [Abstract]. Retrieved from

<https://www.occupationaltherapy.com/ot-ceus/course/mindset-social-entrepreneur-4265>

Knowlton, J. (n.d.). Assistive Technology: From Design to Market [Abstract] Retrieved

from <https://www.occupationaltherapy.com/ot-ceus/course/mindset-social-entrepreneur-4265>

Kornblau, B. (n.d.). Starting a private practice- Part 1 [Abstract]. Retrieved from [https://](https://www.occupationaltherapy.com/ot-ceus/course/starting-private-practice-part-1-4142)

[www.occupationaltherapy.com/ot-ceus/course/starting-private-practice-part-1-4142](https://www.occupationaltherapy.com/ot-ceus/course/starting-private-practice-part-1-4142)

Kornblau, B. (n.d.). Starting a private practice: Following your occupational therapy

dream- Part 2 [Abstract]. Retrieved from <https://www.occupationaltherapy.com/ot-ceus/course/starting-private-practice-following-your-4261>

KU Medical Center. (n.d.). Department of occupational therapy education: Curriculum

and Degree requirements. Retrieved from <http://www.kumc.edu/school-of-health-professions/occupational-therapy-education/entry-level-otd/curriculum-and-degree-requirements.html>

- Lamb, A. (2016). The power of authenticity (Presidential Address). *American Journal of Occupational Therapy*, 70, 7006130010. doi:10.5014/ajot.2016.706002
- Lamb, A. (2017). Unlocking the potential of everyday opportunities (Presidential Address). *American Journal of Occupational Therapy*, 71(6) doi:10.5014/ajot.2017.716001
- Lamb, A. (2018). InnOvaTe (Presidential Address). *American Journal of Occupational Therapy*, 72. doi:10.5014/ajot.2018.726002
- Latchner, L. & Szymanska, I. (2016). Teaching Entrepreneurship through interprofessional collaboration. *American Journal of Occupational Therapy*, 70. doi:10.5014/ajot.2016.70S1-PO3066
- Learning Revolution. (2019). Equipment to create video courses. Retrieved on-line September 23, 2019 from <https://www.learningrevolution.net/tools/create-video-courses-equipment/>
- Leland, N., Crum, K., Phipps, S., Roberts, P., & Gage, B. (2015). Health Policy Perspectives—Advancing the value and quality of occupational therapy in health service delivery. *American Journal of Occupational Therapy*, 69. doi:10.5014/ajot.2015.691001
- Linton, G. & Klinton, M. (2019). University entrepreneurship education: A design thinking approach to learning. *Journal of Innovation and Entrepreneurship*, 8(1), 1-11, doi:10.1186/s13731-018-0098-z

- Martin, W., Mazzeo, J., & Lemon, B. (2016). Teaching Public Health Professionals Entrepreneurship: An Integrated Approach. *Journal of Enterprising Culture*, 24(2), 193-207. doi: 10.1142/S0218495816500084
- McClure, P. (2011). Developing entrepreneurial skills in occupational therapy students. *British Journal of Occupational Therapy*, 74 (11), 499. doi:10.4276/030802211X13204135680749
- Medium (2019). We believe in feeding minds, not mindless feeds. Retrieved online October 13, 2019 from <https://medium.com/membership>
- Mehta, A., Yoon, E., Kulkarni, N., & Finch, D. (2016). An exploratory study of entrepreneurship education in multi-disciplinary and multi-cultural environment. *Journal of Entrepreneurship Education*, 19(2), 120-138.
- Merriam, S. (2001). Andragogy and self-directed learning: Pillars of adult learning theory. *The new update on adult learning theory: New directions for adult and continuing education*, 89, 3-13. doi:10.1002/ace.3
- Miller, T., Wesley, C., Williams, D. (2012). Educating the minds of caring hearts: Comparing views of practitioners and educators on the importance of social entrepreneurship competencies. *Academy of Management Learning and Education*, 11(3), 349-370. doi:10.5465/amle.2011.0017
- Mitcham, M. (2014). Education as engine (Eleanor Clarke Slagle Lecture). *American Journal of Occupational Therapy*, 68, 636–648. doi:10.5014/ajot.2014.686001

- Mosely, G., Wright, N., & Wrigley, C. (2018). Facilitating design-thinking: A comparison of design expertise. *Thinking Skills and Creativity*, 27, 177-189.  
doi:10.1016/j.tsc.2018.02.004
- Moyers, P. (2007). The innovation imperative. *Occupational Therapy In Health Care*, 21(1-2), 291-294. doi:10.1080/J003v21n01\_28
- Nashville Entrepreneur Center. (2019). Join our community. Retrieved on-line September 25, 2019 from <https://www.ec.co/member>
- Newcomer, K., Hatry, H. & Wholey, J. (2015). Planning and designing useful evaluations (p.7-35). In K.E. Newcomer, H.P. Hatry, & J.S. Wholey. (Eds.) *Handbook of practical program evaluation*. San Francisco, CA: Jossey-Bass.
- Newcomer, K. & Triplett, T. (2015). Using surveys (p. 344-382). In: K.E. Newcomer, H.P. Hatry, & J.S. Wholey. (Eds.) *Handbook of practical program evaluation*. San Francisco, CA: Jossey-Bass.
- The Non-Clinical PT (2019). Retrieved on-line October 13, 2019 from <https://thenonclinicalpt.com/>
- Rogers, P. & Goodrick, D. (2015). Qualitative data analysis (p. 561-595). In: K.E. Newcomer, H.P. Hatry, & J.S. Wholey. (Eds.) *Handbook of practical program evaluation*. San Francisco, CA: Jossey-Bass.
- Niccum, B., Sarker, A., Wolf, S., & Trowbridge, M. (2017). Innovation and entrepreneurship programs in US medical education: A landscape review and thematic analysis. *Medical Education Online*, 22(1),  
doi:10.1080/10872981.2017.1360722

- Nielsen, S. & Stovang, P. (2015). DesUni: University entrepreneurship education through design-thinking. *Education + Training*, 57(8/9), 977-991. doi:10.1108/ET-09-2014-0121
- Pache, A., & Chowdhury, I. (2012). Social Entrepreneurs as Institutionally Embedded Entrepreneurs: Toward a New Model of Social Entrepreneurship Education. *Academy of Management Learning & Education*, 11(3), 494-510. doi:10.5465/amle.2011.0019
- Pappas, C. (2013). The adult learning theory- andragogy- of Malcolm Knowles. In *e-learning industry*. Retrieved from <https://elearningindustry.com/the-adult-learning-theory-andragogy-of-malcolm-knowles>
- Parris, D. & McInnis-Bowers, C. (2017). Business not as usual: Developing socially conscious entrepreneurs and intrapreneurs. *Journal of Management Education*, 41(5), 687-726. doi:10.1177/1052562917720709
- Pattinson, M. (2008). Creating our own destiny. *British Journal of Occupational Therapy*, 71(10), 405. doi:10.1177/030802260807101001
- Philadelphia University & Thomas Jefferson University (n.d.). Academic catalog. Retrieved from <https://www.eastfalls.jefferson.edu/catalog/CourseDescriptions/index.aspx>
- Quintana, R., Haley, S., Levick, A., Holman, C., Hayward, B., Wojan, M. (2017). The persona party: Using personas to design for learning at scale. *Proceedings of the 2017 CHI Conference Extended Abstracts on Human Factors in Computing Systems* (p. 933-941). doi:10.1145/3027063.3053355

- Richardson, K. (2019). Wanted: Innovative and out of the box entrepreneurs in occupational therapy. Retrieved from <https://otceus.com/emerge/>
- Roberts, P., Bridgwood, B., Jester, R. (2009). Development of entrepreneurial activity in nurse education. *Nursing Standard*, 23(28), 35-41.  
doi:10.7748/ns2009.03.23.28.35.c6922
- Rogers, P. & Goodrick, D. (2015). Qualitative data analysis (p. 561-595). In: K.E. Newcomer, H.P. Hatry, & J.S. Wholey. (Eds.) *Handbook of practical program evaluation*. San Francisco, CA: Jossey-Bass.
- Salminen, L., Lindberg, E., Gustafsson, M., Heinonen, J., & Leino-Kilpi, H. (2014). Entrepreneurship Education in Health Care Education. *Education Research International*. doi:10.1155/2014/312810
- Sirelkhatim, F. & Gangi, Y. (2015). Entrepreneurship education: A systematic literature review of curricula contents and teaching methods. *Cogent Business & Management*, 2(1), doi:10.1080/23311975.2015.1052034
- Smith, R. (2017). Technology and occupation: Past, present, and the next 100 years of theory and practice (Eleanor Clarke Slagle Lecture). *American Journal of Occupational Therapy*, 71, doi:10.5014/ajot.2017.716003
- Squarespace (2019) Set up your site, pick a plan later. Retrieved online September 24, 2019 from <https://www.squarespace.com/pricing>
- Stickley, A. J., & Hall, K. J. (2017). Social enterprise: A model of recovery and social inclusion for occupational therapy practice in the UK. *Mental Health and Social Inclusion*, 21(2), 91-101. doi:10.1108/MHSI-01-2017-0002



- Stoffel, V. (2015). Engagement, exploration, empowerment (Presidential Address).  
*American Journal of Occupational Therapy*, 69. doi:10.5014/ajot.2015.696002
- Thayer-Hart, N., Dykema, J., Elver, K., Schaeffer, N., Stevenson, J. (2010). *Survey Fundamentals: A Guide to Designing and Implementing Surveys*. Madison, WI: Office of Quality Improvement, University of Wisconsin Survey Center
- Thinkific. (2019). Pricing. Retrieved online September 23, 2019 from  
<https://www.thinkific.com/pricing/>
- Thomas Jefferson University. (n.d.). Advanced practice certificate in using design in healthcare delivery, curriculum. Retrieved from <https://www.jefferson.edu/university/rehabilitation-sciences/departments/design-in-healthcare-delivery/curriculum.html>
- Tufts University (n.d.). Department of occupational therapy: entry-level doctoral program: courses. Retrieved from <https://ase.tufts.edu/occupationalTherapy/programs/ELOTDcourses.htm>
- The University of Illinois at Chicago. (n.d.). Occupational therapy (OT) courses. Retrieved from <https://catalog.uic.edu/all-course-descriptions/ot/>
- University of North Carolina at Chapel Hill. (2019). Retrieved from  
[https://www.med.unc.edu/ahs/ocsci/files/2019/02/Spring-2019\\_SCHED\\_COURSES.pdf](https://www.med.unc.edu/ahs/ocsci/files/2019/02/Spring-2019_SCHED_COURSES.pdf)
- University of North Carolina at Chapel Hill. (n.d.). M.S. program in occupational therapy: Curriculum themes and broad learning objectives. Retrieved from  
[https://www.med.unc.edu/ahs/ocsci/files/2018/02/Curriculum\\_Themes.pdf](https://www.med.unc.edu/ahs/ocsci/files/2018/02/Curriculum_Themes.pdf)

- University of Pittsburgh. (2019). School of rehabilitation sciences and occupational therapy doctor of occupational therapy: Curriculum. Retrieved from <https://www.shrs.pitt.edu/otd/curriculum>
- University of Southern California Chan Division of Occupational Science and Occupational Therapy. (n.d.). Course descriptions. Retrieved from <https://chan.usc.edu/academics/course-descriptions>
- U.S. News and World Report. (2016). Best occupational therapy schools. Retrieved from <https://www.usnews.com/best-graduate-schools/top-health-schools/occupational-therapy-rankings>
- Vakili, F., Tahmasebi, N., Tahmasebi, S., & Tahmasebi, D. (2016). Role of Education in Entrepreneurship Development. *Journal of Ecophysiology and Occupational Health, 16*(3/4), 78-87. doi:10.18311/jeoh/0/16046
- Van de Grift, T., & Kroeze, R. (2016). Design Thinking as a Tool for Interdisciplinary Education In Health Care. *Academic Medicine, 91*(9), 1234-1238. doi:10.1097/ACM.0000000000001195
- Vannucci, M., & Weinstein, M. (2017). The nurse entrepreneur: Empowerment needs, challenges, and self-care practices. *Nursing: Research and Reviews, 7*, 57-66, doi:10.2147/NRR.S98407
- Vorbach, S. Poandl, E. & Korajman, I. (2019). Digital entrepreneurship education- The role of MOOCs. *International Journal of Engineering Pedagogy, 9*(3), 99-111. doi:10.org/10.3991/ijep.v9i3.10149

Washington University in Saint Louis. (n.d.). Program in occupational therapy. Retrieved from <https://www.ot.wustl.edu/education/doctorate-otd-587>

Welsh, D. & Dragusin, M. (2013). The new generation of massive open online course (MOOCS) and entrepreneurship education. *Small Business Institute Journal*, 9(1), 51-65. Retrieved from <http://www.sbij.ecu.edu/index.php/SBIJ/article/view/166>

**CURRICULUM VITAE**

