



2015

Gaming: Occupation-Based NBCOT Exam Preparation

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GAMING: OCCUPATION-BASED NBCOT EXAM PREPARATION

by

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Master of Occupational Therapy, University of North Dakota, 2015

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A Scholarly Project

Submitted to the Occupational Therapy Department

of the

University of North Dakota

In partial fulfillment of the requirements

for the degree of

Master's of Occupational Therapy

Grand Forks, North Dakota

May

2015

This Scholarly Project, submitted by Ilse Coleman, MOTS and Jamie Kauffman, MOTS in partial fulfillment of the requirement for the Degree of Master of Occupational Therapy from the University of North Dakota, has been read by the Faculty Advisor under whom the work has been done and is hereby approved.

Signature of Faculty Advisor

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Signature Alice M. Clemen, MOTS Date 04/23/15

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ACKNOWLEDGEMENTS

The authors would like to thank Sonia Zimmerman, Ph.D., OTR/L, FAOTA for the support, guidance, enthusiasm, and encouragement she provided throughout the process. Her faith in our abilities and willingness to work with us on our unique and unconventional idea made this project possible. We would also like to express sincere appreciation to the rest of the faculty and staff in the Department of Occupational Therapy at the University of North Dakota for lending us their textbooks to use in the development of the project. Additionally, we thank Eller Bonifacio for his creativity and assistance with the graphics and aesthetics of the game design. Finally, we would like to thank our family and close friends who were there for us with support, love, and patience throughout the entire process.

ABSTRACT

The purpose of this scholarly project was to create a novel, unique, and effective preparation tool for the National Board for Certification in Occupational Therapy (NBCOT) certification examination.

A literature review of 40 evidence-based journal articles addressed adult learning principles; guidelines for facilitating learning; types of, advantages, and disadvantages of using gaming in higher education; and preparation methods for high-stakes examinations. Information reviewed also included current preparation tools; exam blueprint; and domain, task, and knowledge statements of the NBCOT certification examination.

An Open Book: NBCOT Exam Prep Game is a board game that can be used as a supplementary preparation tool for candidates who are preparing for the NBCOT certification examination. A board game was chosen for its ability to reduce anxiety, increase motivation to study, allow test takers to learn perspectives from one another, and increase confidence for taking an exam. *An Open Book: NBCOT Exam Prep Game* is designed to use group discussion, simulated exercise, problem-solving activities, case methods, and peer-helping activities to stimulate learning and provide the opportunity to apply knowledge required for passing the certification exam. Adult learning principles and concepts from the Occupational Adaptation model provide the foundation for the project design. The design of the game board and questions were developed with the

blueprint of the NBCOT examination and the validated domain, task, and knowledge statements as foundational information.

Evidence in the literature supports the use of games in higher education to reduce anxiety, increase motivation to study, allow test takers to learn perspectives from one another, and increase confidence for taking an exam. The product of this scholarly project presents a social learning tool in the form of a board game that incorporates adult learning principles, concepts of the Occupational Adaptation model, and the NBCOT blueprint and domain, task, and knowledge statements reflecting current practice in occupational therapy. *An Open Book: NBCOT Exam Prep Game* is designed to supplement current preparation tools.

CHAPTER 1

INTRODUCTION

To become occupational therapists (OTs), practitioners first need to pass the National Board for Certification in Occupational Therapy (NBCOT) certification examination. The NBCOT certification examination is constructed to measure entry-level competence and only those who pass are deemed to have the necessary knowledge to be certified as an OT (NBCOT, 2014). Because of the consequences of passing or failing the NBCOT certification examination, it is considered to be a high-stakes examination. Current preparation tools for candidates of the NBCOT certification examination include exam outlines, entry-level self-assessment tools, online practice tests, study guides, and study packages (NBCOT, 2014). There is not a game-oriented occupation-based preparation tool to assist candidates in meeting their goal of passing the NBCOT certification examination.

Preparing for a high-stakes exam, such as the NBCOT certification examination, can be anxiety provoking, boring, and an overall challenging process (Fleming-Castaldy, 2010). A game-oriented occupation-based preparation tool could reduce anxiety and create a more positive experience of preparing for the NBCOT certification examination (Blakely, Skirton, Cooper, Allum, & Nelmes, 2009). It could also increase motivation to study and allow candidates to learn perspectives from one another prior to the exam (Blakely et al., 2009; Scalover & Henderson, 2005).

To meet the current need, the proposed product is a game-oriented occupation-based preparation tool for candidates of the NBCOT certification examination. Candidates are graduates from an accredited or approved entry-level OT program. They have completed all course-work and fieldwork requirements needed to graduate (NBCOT, 2014). The preparation tool matches the level of knowledge, skills, and abilities of the candidates. It is created as a supplement to current preparation tools.

Theoretical Model

Adult learning theory and the occupational adaptation model (OA) are used to investigate the issue and create the product. Key principles of adult learning include that learning is situation-based and life transitions are a rich time for learning in adulthood (Knowles, Holton, & Swanson, 2005). Candidates for the NBCOT certification examination are transitioning from their roles as students to practitioners, thus a life situation requiring learning. OA also applies to life transitions as the transition requires the candidates to develop adaptive responses internally to gain skills to apply knowledge to pass the NBCOT certification examination and become an OT practitioner. The description of the process of generating, evaluating, and integrating adaptive responses is useful for this population.

OA is used to analyze the needs of the target population and the experience of preparing for high-stakes examinations. Based on the information, an effective type of preparation tool is determined. Therefore, adult learning theory and OA are imbedded in the design of the preparation tool. The concepts from each theoretical model are used as a guides for designing the tool to effectively facilitate learning.

Key Terms and Concepts

Definitions of key terms and concepts for the current project include:

- National Board for Certification in Occupational Therapy (NBCOT): “National certification body for occupational therapy professionals in the United States” (NBCOT, 2014, p. 2).
- NBCOT certification examination: Exam with the purpose of “protecting the public interest by certifying only those candidates who have the necessary knowledge of occupational therapy to practice” (NBCOT, 2014, p. 2)
- Domain areas: Areas of the OT process that make up the NBCOT certification examination blueprint. Each domain creates a proportion of the test items of the certification exam (NBCOT, 2014, p. 17).
- Validated Domain, Task, and Knowledge Statements: Statements used to classify items on the NBCOT certification examination according to required knowledge, skills, and abilities to be an OT (NBCOT, 2014).
- Adaptation: Change in one’s response to the environment when facing an occupational challenge (Turpin & Iwama, 2011).
- Occupational challenge: Expectations of performance within the environment when engaging in occupation (Cole & Tufano, 2008).
- Relative mastery: A person’s self-assessment of his or her occupational performance (Cole & Tufano, 2008).
- Adaptation gestalt: The three parts (sensorimotor, cognitive, and psychosocial) in every person used to overcome an occupational challenge (Cole & Tufano, 2008).

- Adaptation response process: Process moving the person from the press for mastery to an occupational response to generate a response, evaluate the response, and promote an adaptive response to generalize to future occupational challenges (Cole & Tufano, 2008).

Conclusion

There is currently no game-oriented occupation-based preparation tool for the NBCOT certification examination. The purpose of the current project is to create a unique and effective occupation-based preparation tool for candidates of the NBCOT certification examination. The preparation tool provides an alternative method of preparation that can reduce anxiety, increase motivation to study, and allow candidates to learn perspectives from one another prior to the exam (Blakely et al., 2009; Sealover & Henderson, 2005).

The remaining chapters present the process of developing the game-oriented occupation-based preparation tool. Chapter 2 provides a summary of the review of current literature about adult learning, gaming in education, high-stakes examinations, and the NBCOT certification examination. Chapter 3 describes the process used to create the product and key decisions made during the development. Chapter 4 includes a narrative description and presentation of the product. Chapter 5 summarizes the project and identifies the plan for implementation, limitations, and future plans for the product.

CHAPTER 2
LITERATURE REVIEW
Adult Learning

Learning can be defined as gaining knowledge and expertise, illustrated by a change in behavior as a result of experience (Knowles et al., 2005). There are different theories of learning for adults and children describing how the two populations learn differently from one another. In the theory of pedagogy, or the art and science of teaching children, the learner is viewed as a dependent person whose experience is worth little as a resource and who become ready to learn what the teacher tells them (Knowles, Holton, & Swanson, 2005). The learning that occurs is subject-centered, or focused on acquiring subject-matter content, and learners are externally motivated to acquire the subject-matter by grades, teacher approval, etc. (Knowles et al., 2005). Andragogy, or “the art and science of helping adults learn” (Knowles et al., 2005, p. 61), differs from pedagogy in that the learner is responsible for his or her own decisions and have experiences that can be used as a resource for learning. The adult learner desires to acquire knowledge that is applicable to his or her real-life situations, so therefore the learning is life-centered. Finally, adults are typically internally motivated to learn by self-esteem and quality of life. (Knowles et al., 2005).

Assumptions of Andragogy

Knowles et al. (2005) provided a psychological definition for an adult as one who has arrived at a self-concept of being responsible for his or her own life. His definition correlates with the assumptions of Knowles theory of andragogy. Adults need to know why they need to learn something before deciding to learn about it. They also feel responsible for their own decisions, so they do not appreciate others imposing their wills on them as with pedagogy. Adults have a life time of experience that can be used as a rich resource for learning. Techniques that stimulate learning from past experiences include group discussions, simulated exercises, problem-solving activities, case methods, laboratory methods, and peer-helping activities. Adults are prepared and desire to learn that which is applicable to their real-life situations. Moving from one life stage to the next is a time rich with learning. Additionally, adults' learning is life-centered, or task/problem-centered. They are motivated to acquire knowledge that will help them perform tasks or solve problems they confront in life. "They gain knowledge, understanding, skills, values, and attitudes most effectively when presented in the context of application to real-life situations" (Knowles et al., 2005, p. 68). Lastly, adults are externally motivated to an extent when considering getting better jobs or passing examinations, but the most potent motivators are internal (Knowles et al., 2005).

Guidelines for Facilitating Learning

According to Knowles et al. (2005), adults are independent and self-directed in learning, so teaching the adult population is more about facilitating learning than

imparting knowledge onto others. Knowles et al. (2005) present guidelines for facilitating learning derived from a speech by Carl Rogers in 1969. The guidelines include:

- setting a trusting, relaxed, and fun mood or climate;
- clarifying the purpose of the group while permitting a sense of freedom;
- relying on each student to implement meaningful purposes;
- organizing a wide range of resources for learning and making them easily available;
- being a flexible resource to be used by the group;
- and recognizing and accepting one's own limitations.

Knowles et al. (2005) also provide guidelines derived from Goodwin Watson that are more behavioral in nature. These guidelines include:

- behavior that is rewarded is more likely to recur,
- repetition without rewards is not an effective way of learning,
- learning occurs best when learners can select and plan themselves,
- genuine participation intensifies motivation,
- and the best time to learn is when the material is immediately useful to the learner.

Additionally, educators working with adults must remember that it is imperative to utilize strategies that challenge the learners to integrate the new knowledge with knowledge they already know. In order for this information to be integrated, the learner must be offered the opportunity to actively participate in the learning experience (Knowles et al., 2005).

Conventional methods of teaching create passive learning environments, which do not facilitate the development of critical thinking skills or foster the type of learning strategies from which adult learners elicit the highest level of learning (Knowles et al., 2005; Royse & Newton, 2007). If developed and designed correctly, games can address the needs of adult learners. Games facilitate the integration of old knowledge with new knowledge, require active engagement, and allow for learners to share and utilize their life experiences to play the game and enhance their learning, which aligns with the guidelines presented above (Oblinger, 2006; Ward & O'Brien, 2005).

Gaming in Education

According to Garris, Ahlers, and Driskell (2002), there has been a shift in the field of education from using traditional didactic methods to active experiential learning strategies to educate students, especially for students currently pursuing a college education. Individuals pursuing a college education in the United States are a part of a generation which has been surrounded with an abundance of technology utilized to capture students' attention and facilitate learning (Bekebrede, Warmelink, & Mayer, 2011). Based on the principles and the theory of andragogy, it can be implied that college students have adopted a more active role in their learning as they become adult learners (Knowles et al., 2005). As American culture has evolved, traditional views and values regarding learning and teaching strategies have been ever changing. In today's world, being more active and intrinsically motivated is essential for success in the higher education world, which has led to an increased popularity in the use of gaming for education (Ward & O'Brien, 2005).

Utilizing games in education is a method of facilitating learning that can be motivating and self-directed, can tap into adults' experiences, and can be task or problem-centered (Bekebrede et al., 2011; Duque, Fung, Mallet, Pose, & Fleiszer, 2008; Metcalfe & Yankoou, 2003; Ward & O'Brien, 2005). Games can be used to make learning information that is generally considered dry and boring, fun and exciting (Baid & Lambert, 2010; Ward & O'Brien, 2005). According to Bethea, Castillo, & Harvison, (2014), games and simulations can also be used to facilitate clinical reasoning or analytical thinking skills, and Tashiro (2009) highlighted serious gaming can be utilized in healthcare education programs to support skill development and application of skills in a safe environment. Thus, there are many elements of games that can be used in higher education to support the acquisition of skills and foster a positive experience for students pursuing a degree in higher education (Nadolski et. al, 2008). In order to ensure games are effectively being used as a medium for learning, they must be articulately designed and strategically utilized in higher education (Peddle, 2011).

Types of Games Used In Higher Education

Allery (2004) defines educational games as a "competitive activity with a prescribed setting constrained by rules and regulations." Typically, the aim of programs in higher education is to guide students through Bloom's taxonomy of learning which is to recall, comprehend, apply, analyze, synthesize, and ultimately critically evaluate data for success in their future careers (Bloom, Englehart, Furst, Hill, & Krathwohl, 1956; Bethea et al., 2014). In healthcare education, games are often used to assist students in recalling and applying information required to become entry-level professionals. Games

used in higher education to move students up the continuum of Bloom's taxonomy of learning include team drawing quizzes, board games, timed question and answers, card games, charades, role plays, adventure games, puzzle games, strategy games, sport games, simulations, computer games, and games based on TV shows that have been adapted and modified to be used in higher education classrooms (Blakely et al., 2009; Graham & Richardson, 2008; Oblinger, 2006). For instance, Ward and O'Brien (2005) developed a board game for students with no clinical experience to assist them in memorizing the knowledge needed for working in the field of psychiatric nursing. Beylefeld and Struwig (2007) designed a quiz style game to increase third year medical students taking microbiology motivation and interest for studying the course materials. Gipson and Bear (2013), professors of nursing from the School of Nursing at Jacksonville University, designed a board game titled "Renal Nephron Board Game," to assist students in learning and understanding the function, pathophysiology, diagnostics, and treatment of the renal nephron. These are just a few examples of the many games developed for students pursuing a degree in higher education settings.

Advantages of Gaming in Education

Games are used in all levels of education to facilitate the development of cognitive skills and ultimately for advancing and annexing all levels of Bloom's Taxonomy of Learning. Along with facilitating students journey in advancing their cognitive domain of learning, games have been found to increase levels of student involvement in learning, increase students' ability to learn perspectives from others, and decrease anxiety and stress in order to fulfill their education goals (Blakely et al, 2009;

Sealover & Henderson, 2005). Moreover, Graham and Richardson (2008) noted if developed correctly, educators can use games to facilitate activities and lessons that will foster the development of the skills graduates need to become successful professionals.

Students learn how to perform in clinical situations by recalling, understanding, synthesizing, and evaluating information, and games can be designed to facilitate this process (Bockenek, Wittekindt, Zimmerman, & Klingebiel, 2007; Duque et al., 2008; Gipson & Bear, 2013). Games require students to tap into their cognitive reservoir and facilitate students' journey in identifying how they would perform in clinical/professional situations (Blakely et al., 2009; Baid & Lambert, 2010; Sealover & Henderson, 2005; Royse & Newton, 2007). Studies in the literature indicate games can be educational tools used to assist students in developing problem-solving and decision-making skills needed in the workforce, especially in healthcare professionals who need to make decisions that will not detrimentally affect their patients (Blakely et al., 2009; Graham & Richardson, 2008). Thus, when games are used strategically their application to 'real life' situations is clear and effective (Graham & Richardson, 2008; Peddle, 2011). Medical students studying neurophysiology in Schuh, Burdette, Schultz, and Silvers' (2008) study demonstrated a significant increase in the ability to memorize, synthesize, and evaluate neurophysiology concepts necessary for medical practice. Similarly, Duque et al. (2008) demonstrated a significant increase in medical students' ability to complete house calls with geriatric patients.

Studies have demonstrated using games in higher education is a teaching strategy that can improve retention and application of knowledge over time (Baid & Lambert,

2010; Graham & Richardson, 2008; Randel, Morris, Wetzel, & Whitehill, 1992). Students in McLafferty, Dingwall, and Halkett (2009) described games as “Much more enjoyable and sticks in your mind, because you can remember most of the day and the things that we have covered and the chats that we did” (pp. 57). This excerpt correlates with findings from Randel et al. (1992) systematic analysis of 14 games used in education. Randel et al. (1992) found 10 out of 14 games demonstrated significant retention of knowledge when used to facilitate learning. Additionally, Eckert et al. (2004) found 95% of nursing students who participated in a trading card game utilized to facilitate students’ comprehension of immunology, demonstrated an increase in understanding of concepts, augmentation of retention of information/skills, and rise in grades improved secondary to students playing the game. Other studies analyzing the benefits or effectiveness of using gaming in education also support these results along with the concept that games promote and challenge students to increase their clinical reasoning skills because games can simulate real life scenarios which require clinical reasoning (Blakely et al., 2009; Graham & Richardson, 2008; Peddle, 2011; Royse & Newton, 2007; Ward & O’Brien, 2005).

Games increase the level of collaboration and student involvement in learning. Collaboration methods commonly lead to predicaments amongst collaborators as there typically are varied opinions and multifarious perspectives on how to accomplish tasks or respond to questions/scenarios. This is a situation commonly encountered in today’s workforce as team leadership and collaboration amongst professionals is the predominant form of leadership in the majority of businesses and professional positions. Games can

add and foster the development of students' ability to listen to and appreciate other people's perspectives, a skill imperative for effective collaboration amongst colleagues with diversified opinions. In addition to gaining the ability to heed to other's opinions, Hainey et al., (2013) found students felt games encourage cooperation and teamwork amongst players which leads to an improvement of communication skills.

Communication, understanding diversity, and collaboration are imperative for keeping up with the constant demands and changes in today's workforce, and especially in healthcare fields as clinicians are expected to be open to suggestions and opinions from colleagues and patients (Graham & Richardson, 2008)

Games decrease anxiety, stress, and increase confidence in students because they stimulate a less strict and rigorous studying or learning environment (Ward & O'Brien, 2005; Bantz, Dancer, Hodson-Carlton, & Hove, 2007). Ward and O'Brien (2005) confirmed games are a valid method of reducing anxiety as evidenced by students reporting decreased level of anxiety after participating in a game designed with the aim to educate students how to engage with patients in challenging clinical scenarios. Eighty-two percent of participants in Beyelfeld and Struwig's (2007) study reported invigorated levels of enthusiasm after playing a game used to learn topics within a medical microbiology course. Eighty-two percent of participants in this study also identified to have a sense of control which is translated into a positive experience of utilizing game for mastering medical microbiology class objectives. Duque et al.'s (2008) correlates with Beyelfeld and Struwig's (2007) findings evaluating the retention of knowledge of students who utilized games; 77% of students considered games to be a method for

improving retention of knowledge and confidence and 85% of students identifying utilizing games in higher education to be a good experience. McLafferty, Dingwall, and Halkett (2009) found there was a significant difference between pre-test (3.4) and post-test (4.2) in students' preference of active learning versus traditional classroom strategies after experiencing a gaming workshop designed to increase students understanding of geriatric nursing practice.

Lastly, higher education students have verbalized games can be beneficial to their learning. A student who participated in the McLafferty et al. study (2009) stated, "I can't think of any aspect of the day I didn't enjoy. I can't recall any aspect where I thought what we were doing was pointless or boring" (pp. 57). Similarly, 74% of students in the Hailey et al. (2013) study identified games can be used to learn and motivate students to learn concepts required to pass courses, because games offer the potential to master a technique or skill resulting in acquisition of learning. If designed correctly, games can be used for mastering the technique needed for passing courses in students' curriculum and promoting the development of skills required for successful careers as professionals (Peddle, 2011).

Disadvantages of Gaming in Education

Although there are many benefits to using games in higher education, there are some disadvantages to using games in education. According to Blakely et al. (2009), students have a wide range of learning styles and gaming may not be beneficial to everyone as they can be anxiety-provoking or distressing to some students. Games have the potential to create stress and to decrease confidence and self-esteem because students

may think that if they make a mistake, the other players will laugh at them (Bantz et al., 2007; Blakely et al., 2009; Graham & Richardson, 2008). Beylefeld and Struwig (2007) found that competition can be threatening to players, and it can reinforce negative feelings about students' personal evaluation of their performance or knowledge level related to a topic. Forty percent of participants felt threatened by the competitive nature of the game in their study. One participant in their study reported feeling worse about knowledge he should have had, but had already forgotten (Beylefeld & Struwig, 2007). Competition may also influence students to focus on winning the game rather than learning the content (Peddle, 2011).

Although certainly useful, games are not always the most effective way for students to synthesize knowledge. Selby, Walker, & Diwakar (2007) evaluated the outcomes of interactive versus lecture strategies for teaching students child development. Students who participated in traditional lecture scored significantly higher in a quiz evaluating knowledge regarding child development versus utilizing a gaming strategies to learn child development. Likewise, Gipson and Bear (2013) found gaming strategies did not increase student's understanding and ability to clinically apply knowledge involving the renal system.

On a different note, gaming is time consuming and can be costly to implement. Purchasing the game product and time dedicated to using the game is needed for the game to successfully support students in their learning (Peddle, 2011; Royse & Newton, 2007). Lastly, games may not spark interest or may not be intrinsically motivating enough for students to invest themselves. Beyelfeld and Struwig (2007) found 5% of

students identified games to be boring and 20% of participants in Hainey et al.'s (2013) study found games to be childish, distracting, and inappropriate at the higher education level.

Clearly, careful construction and design of the game is required when creating and using games in higher education. To reduce potential differences between responses in game play versus real world situations, ethical guidelines to follow should be described to the players prior to game play (Graham & Richardson, 2008; Peddle, 2011).

Controlling the environment in which the game is played can also be challenging and should be considered (Royse & Newton, 2007). Additionally, it is difficult to evaluate the effectiveness of games on an individual basis because the majority of games are used or designed to be played as a team. Evaluating one student's retention of knowledge, understanding, and information literacy cannot be fairly evaluated because their engagement level can vary based on their teams/peers personality dynamics. Lastly, games cannot be used as an initial teaching method because they require players to have some background or understanding in order to be a successful technique for reinforcing development of skills and knowledge in health science education. This is evidenced by Bekebrede et al.'s (2011) findings that students find gaming to be an added value to their education, however not a value that should be used in general or as the only tool to gain an understanding of the course curriculum. Thus, preparation is required to further enhance the students' skills pursuing a degree in higher education and gaming should be utilized as only an added value in education and not as the sole source for learning (Bekebrede et al., 2011).

In summary, the evidence of the effectiveness of games is predominately anecdotal (Blakely et al., 2009). There is a lack of rigorous, high level research available to state games used in education are the “gold standard” tool to use in educating students in higher education (Blakely et al., 2009). Nonetheless, the evidence that is available, although qualitative and largely based on students perceptions and not assessment of conception of knowledge, supports that games do have value in education and can be used to effectively support students’ experience of the learning, motivation to learn, and development of higher thinking skills (Beylefeld & Struwig, 2007; Blakely et al., 2009).

Games alone as a source of gaining the skills needed to be successful with higher education are not supported within the literature to be efficacious. When games are utilized in combination of lecture or readings, students identified and studies presented with higher success with gaining skills needed to evaluate and synthesize knowledge. Thus, higher levels of success with synthesizing and evaluating information is highly reported within the literature when games are used in addition to didactic teaching methods in adult learners pursuing a higher education degree (Bantz et al., 2007).

High Stakes Examinations

A common element of adults’ professional education is a high-stakes examination. A high-stakes exam is one whose results have important consequences for the test taker (Cunningham, Percuoco, Marchiori, & Christensen, 2006). The consequences can be as high as the ability to practice in a given profession. For example, graduates in multiple professions are required to pass either a licensure or certification exam prior to practicing and using the title of the given profession (Williams & Counts,

2013; Luedke, Dillon, Utsey, & Tomaka, 2012; Cunningham et al., 2006; Leanord & Bull, 2003). The passing of a licensure or certification exam “demonstrates entry-level competence of basic knowledge and skills (Williams & Counts, 2013, p.198) along with the “ability to perform at a level that meets the standards of safe, effective, and efficient practice” (Luedke et al., 2012, p. 41). Examples of professions where the passing of a licensure or certification exam is required to practice in the profession include, but are not limited to, occupational therapy, physical therapy, chiropractic, medical doctor, and law. (Luedtke et al., 2012; Cunningham et al., 2006; Leanord & Bull, 2003).

Because high-stakes examinations have such important consequences for the test taker, they can be the cause of increased stress (Fleming-Castaldy, 2010; Owen-Yeates, 2005; Putwain, 2011). Owen-Yeates (2005) found that examinations can be a significant source of stress and worry due to test-takers’ concern about passing and consequences of failure for future employment. Congruently, Putwain (2011) concluded that students feel stressed due to anticipation of failure due to memory failure on the day of the test. They also worry about not passing and therefore losing the ability to get a good job. The stress increases from having to balance multiple responsibilities, and it decreases with increased confidence, perceived competence, preparation, and test-taking practice (Putwain, 2011).

Preparation for high stakes examinations

There are a variety of high-stakes exam preparation methods intended to increase confidence, preparation, and provide test-taking practice. Preparing for a high-stakes exam can increase performance and decrease stress (Putwain, 2011; Thadani, Swanson, & Galbraith, 2000; Cunningham et al., 2006; Hagler, Poindexter, & Lindell, 2014;

Curran, 2014). Table 2.1 provides examples of the variety of preparation methods utilized by college students in multiple professions when preparing for a high-stakes exam within their field. Leonard and Bull (2003) described a commercial coaching course for the USMLE Step 1. The course was three to seven weeks long and provided students with six to eight hours of extra lecture time per day. According to Hagler et al. (2014) and Curran (2014), detailed test plans are used to compare topics and comfort level to identify knowledge gaps, formative assessments are utilized to measure current knowledge to focus preparation on areas that need improvement, and practice questions can build test-taking skills through repetition (Hagler et al., 2014; Curran, 2014).

Hagler et al. (2014) identified social learning opportunities as an effective preparation method for high-stakes exams. They reported “social learning opportunities can be effective for integrating knowledge, external accountability, and deep processing of concepts; the sense of fun and companionship may be motivating” (p.46-47). One example of a social-learning preparation tool related to gaming in education is called *Passing the BAR: A Game of Legal Reasoning* (P&R Educational Games, n.d.). Caryn Pincus and Adam Reinhardt, the creators of *Passing the BAR*, created flash cards and an interactive board game to help candidates prepare for the Multistate BAR examination. The game consists of 450 questions that allow candidates to learn the material in an enjoyable, social setting.

Table 2.1 <i>Methods Utilized by College Students when Preparing for a High-stakes Exam</i>			
High-stakes Examination	United States Medical Licensing Examination (USMLE) Step 1 (Thadani et al., 2000)	Chiropractic Science Qualifying Exam (Cunningham et al., 2006)	Other (Hagler et al., 2014; Curran, 2014)
Study Methods	Commercial guides General instructions and content description of the examination Lecture notes Textbooks Preparation materials provided by the school Commercial coaching course that focused on learning Step 1 content and test-taking strategies Group study	Commercial coaching courses Course notes Commercial note sets On-line resources	Textbook study Small group sessions Detailed test plan Formative assessments Practice questions

Although research findings are not reported, users of *Passing the BAR* reported “I enjoyed the game far more than BarBri (a review course)...I credit *Passing the Bar* with my success”, “This will be a great addition to our BAR preparation program”, “It is a fun, yet practical way of taking your mind of the realities of the BAR exam”, and “It is a good way to study without feeling tied to your desk or notes”. Other reviews were not as

positive with one reviewer stating “I doubt it helped me study for the bar exam much”, but went on to say “it certainly did not hurt” (P&R Educational Games, n.d.). The reviews demonstrate how games as learning tools can be useful for some individuals especially when used in combination with other preparation methods.

National Board for Certification in Occupational Therapy Examination

To practice occupational therapy in the United States, the individual must have successfully completed the certification examination offered by the National Board for Certification in Occupational Therapy (NBCOT). As the national certification body for occupational therapy professionals, NBCOT develops and maintains the high-stakes examination. To become eligible to take the NBCOT certification examination a candidate must have either a master’s or doctoral degree. Therapists are unable to practice legally in the United States without passing the NBCOT certification examination. The exam measures the knowledge required for entry-level occupational therapy practice (NBCOT, 2014).

The exam consists of 170 multiple choice test items and three simulation test items. The questions on the exam are developed and based on practice analysis studies which measure the knowledge required for practicing entry-level occupational therapists. There are four domains that are evaluated within the exam. The domains and the percentage of the examination related to each domain are provided in Table 2.2.

Currently the tools available to assist candidates for the NBCOT certification examination prepare include exam outlines, entry-level self-assessment tools, online practice tests, study guides, and study packages. The tools have been developed by the

NBCOT, as well as other private vendors. These tools are designed to assist candidates in assessing their readiness for taking the exam. The tools specifically designed by the NBCOT are written with the same psychometric standards as the actual NBCOT certification examination. No studies evaluating the efficacy of the preparation tools were evident in the current literature.

Table 2.2 <i>Domains Evaluated within the NBCOT Certification Examination</i>	
Domain	Percentage of Test
Acquire information regarding factors that influence occupational performance throughout the occupational therapy process	17%
Formulate conclusions regarding client needs and priorities to develop and monitor an intervention plan throughout the occupational therapy process	28%
Select interventions for managing a client-centered plan throughout the occupational therapy process	45%
Manage and direct occupational therapy services to promote quality in practice	10%

(NBCOT, 2014, p. 17).

In 2013, 84% of candidates passed the exam (E., Wagonsel, personal communication, August, 13, 2014). Although passing rates are high, the experience of preparing for high stakes exams can be anxiety- provoking, boring, and an overall challenging process for students (Fleming-Castaldy, 2010). There is also much at stake, as the test-taker cannot legally practice as a registered occupational therapist without passing the examination (Fleming-Castaldy, 2010).

Current Project

Currently, there is not a preparation tool for the NBCOT certification examination based on active learning strategies or principles of andragogy available in a game format. Gaming could be utilized as a resource for examination candidates to augment their experience of preparing for the NBCOT certification examination. A game to be used as a preparation tool for the NBCOT certification examination has the potential to reduce anxiety, increase motivation to prepare, allow exam candidates to learn perspectives from one another prior to the exam, and increase confidence for taking the exam.

The aim of this scholarly project is to design a game that the exam candidate will find intrinsically motivating and will assist in preparation for the NBCOT certification examination. Specifically, the game would assist candidates in mastering the domains of the NBCOT certification examination including the ability to acquire information regarding factors that influence occupational performance, to formulate conclusions regarding client needs and priorities, to select client-centered interventions with considerations of the occupational therapy process, and to manage and direct services. Similar to the domains of the NBCOT certification examination, the game will require examination candidates to incorporate the basic concepts learned in their academic preparation to make decisions in mock clinical scenarios (NBCOT, 2014, pg. 18). Chapter 3: Methodology outlines the process utilized to create the preparation tool and meet the overall goal of the project.

CHAPTER 3

METHODOLOGY

The goal of the current project was to create a novel, unique, and effective preparation tool for the National Board for Certification in Occupational Therapy (NBCOT) examination. Based on a review of the professional literature on the effectiveness of utilizing gaming in higher education, it was concluded a board game could be created as a resource to augment candidates' experience of preparing for the NBCOT certification examination. A board game was chosen for its ability to reduce anxiety, increase motivation to study, allow candidates to learn perspectives from one another prior to the exam, and increase confidence for taking the exam (Blakely et al., 2009; Sealover & Henderson, 2005).

Theory and Model of Practice

Adult Learning

To create "*An Open Book: NBCOT exam prep game*", the project developers initially reviewed multiple learning theories including adult learning, pedagogical learning, social learning, and humanistic learning theories and concluded adult learning theory would be applicable. Key principles of adult learning include that learning is situation based and life transitions are a rich time for learning in adulthood (Knowles et al., 2005). Candidates for the NBCOT certification examination are transitioning from their roles as students to practitioners, thus a life situation requiring learning. Using adult

learning principles and guidelines for facilitating learning experiences developed by Knowles et al. (2005), a structure for *An Open Book* was outlined. The guidelines presented by Knowles et al. (2005) and how they were incorporated into *An Open Book* are presented in Table 3.1.

Table 3.1 <i>Elements of the Board Game Stemmed from Guidelines of Adult Learning</i>	
Guideline for Facilitating Learning (Knowles et al., 2005)	Elements of <i>An Open Book</i>
Set a trusting, relaxed, and fun mood or climate.	- The game incorporates fun study breaks including jokes, games, and activities.
Clarify the purpose of the group while permitting a sense of freedom.	- The purpose of the game was stated in the directions
Organize a wide range of resources for learning and make them easily available.	- Rationale and references were provided for the information in each question. - A list of references used to create the game was provided in the directions.
Be a flexible resource to be used by the group.	- Rules were provided, but house rules were encouraged in the directions. - The question cards can be used to play the actual board game or as flash cards.
Recognize and accept one's own limitations.	- Limitations of the game were included and suggestions for additional preparation methods were provided.

Occupational Adaptation Model

Two models of practice: Occupational Adaptation (OA) and Model of Human Occupation (MOHO) were reviewed. Of the two, OA was selected for this project for its emphasis on internal adaptation and its description of the process of generating, evaluating, and integrating an occupational response to an occupational challenge.

Candidates for the NBCOT certification examination are at a transitional time between being a student and a practitioner, which requires them to develop adaptive responses internally and gain skills to apply knowledge to pass the NBCOT certification examination and become an OT practitioner. Further information about the integration of OA into the current project is provided in Chapter 4: Product.

National Board for Certification in Occupational Therapy

After reviewing and incorporating adult learning and OA guidelines to the project development, the structure of the NBCOT certification examination was examined to assure *An Open Book* correlated with the examination. To follow the structure of the NBCOT certification examination, *An Open Book* was developed using the four domains of the exam as reflected in the NBCOT Handbook (2014). Each domain is represented by colored spaces on the game board; the number of spaces related to each domain directly correlates with the percentage of the test that is related to the domain. For example, there are 50 squares on the game board. Of the 50 squares, 14 (28%) are yellow to represent domain two. Table 3.2 displays the blueprint for the exam including what percentage of the exam is related to each domain. It also displays how the domains were incorporated into the board game.

NBCOT offers validated domain, task, and knowledge statements as a resource to assist candidates in their examination preparation (NBCOT, 2014). *An Open Book* game questions were developed with the domain, task and knowledge statements as foundational information. Each game question relates to a specific knowledge statement

and therefore relates to a task and domain. Table 3.3 displays organization of the questions during the development process.

Table 3.2			
<i>Domains Evaluated within the NBCOT Certification Examination and Representation of the Domains</i>			
Domain	Percentage of exam and game board	Color on game board	Number of squares
Domain 1: Evaluation	17%	Green	9
Domain 2: Treatment Planning	28%	Yellow	14
Domain 3: Intervention Implementation	45%	Blue	22
Domain 4: Management	10%	Orange	5

(NBCOT, 2014, p. 17).

Table 3.3			
<i>Organization of Questions for An Open Book.</i>			
<i>Domain 1: Assessment</i>			
<i>Task: 0101: Acquire information about a client's functional skills, roles, context, and prioritized needs through the use of available resources and standardized and non-standardized assessments in order to develop an occupational profile.</i>			
Code (Knowledge statement)	Type of question & Population	Question	Answer (with citation)
010101			
010102...			
...010106			
<i>Task 0102: Analyze evidence obtained from the occupational profile to identify factors that influence a client's occupational performance.</i>			
010201			
010202			
010203			

Question-writing

A literature review pertaining to the types of questions that are effective for facilitating learning was conducted. Based on the findings of the literature review, three types of questions: simulation, decision-making pathway, and multiple choice were selected to be included in the game. The game questions were developed using the top ten textbooks and journals referenced by item writers of the NBCOT certification examination on the review of the NBCOT curriculum text and peer reviewed journal report (NBCOT, 2013). Chapter four: Product describes and presents *An Open Book*, the board game that was created as a preparation tool for the NBCOT certification exam.

Chapter 4

AN OPEN BOOK: NBCOT EXAM PREP GAME

Introduction

The goal of the current project was to create a novel, unique, effective, and game-oriented occupation-based preparation tool for the National Board for Certification in Occupational Therapy (NBCOT) certification examination. Existing preparation tools for the NBCOT certification examination included exam outlines, entry-level self-assessment tools, online practice tests, study guides, and study packages (NBCOT, 2014). Although the profession of occupational therapy (OT) is based on using meaningful activities to accomplish goals (AOTA, 2014), there was not a preparation tool based on active learning strategies or principles of adult learning available in an game-oriented occupation-based format to support candidates' preparation.

The project developers created a board game titled *An Open Book: NBCOT exam prep game* to be used as a supplementary preparation tool for candidates of the NBCOT certification examination. *An Open Book* is a game-oriented occupation-based preparation tool to help candidates demonstrate understanding of the domains of knowledge required to reach their goal of passing the NBCOT certification examination. *An Open Book* is presented in this section with pictures of the game board, cards, and game pieces. The game questions for *An Open Book* will be presented in a table format

demonstrating how the questions were designed in relation to the domain, task, and knowledge statements identified in the NBCOT certification examination blueprint.

Theoretical Model

Adult Learning

Key principles of adult learning include that learning is situation-based and life transitions are a rich time for learning in adulthood (Knowles et al., 2005). Candidates for the NBCOT certification examination are transitioning from their roles as students to practitioners, thus a life situation requiring new learning. The structure for *An Open Book* was developed using adult learning principles and guidelines for facilitating learning experiences developed by Knowles et al. (2005). The guidelines presented by Knowles et al. (2005) and how they were incorporated into *An Open Book* are presented in Table 4.1.

Table 4.1 <i>Elements of the Board Game Stemmed from Guidelines of Adult Learning</i>	
Guideline for Facilitating Learning (Knowles et al., 2005)	Elements of <i>An Open Book</i>
Set a trusting, relaxed, and fun mood or climate.	- The game incorporates fun study breaks including jokes, games, and activities.
Clarify the purpose of the group while permitting a sense of freedom.	- The purpose of the game was stated in the directions
Organize a wide range of resources for learning and make them easily available.	- Rationale and references were provided for the information in each question. - A list of references used to create the game was provided in the directions.
Be a flexible resource to be used by the group.	- Rules were provided, but house rules were encouraged in the directions. - The question cards can be used to play the actual board game or as flash cards.
Recognize and accept one's own limitations.	- Limitations of the game were included and suggestions for additional preparation methods were provided.

Occupational Adaptation

The model chosen to guide the development of this project is the occupational adaptation (OA) model. OA was chosen because it aligns with the principles of adult learning, and the focus is not on dysfunction but rather the normal process of life. The normal process of life requires people to develop and generalize positive adaptive responses to meet the demands of occupational role expectations. Positive adaptive responses are used to reach relative mastery over an occupational challenge. Taking the certification exam is a normal step in life after graduating from an accredited master of occupational therapy program. After graduation from occupational therapy school, individuals are faced with an occupational challenge (Turpin & Iwama, 2011). In order to become practicing and registered occupational therapists, they must pass the national board for certification in occupational therapy (NBCOT, 2014). This challenge stems from a press for mastery created from each candidate's desire for mastery, along with extrinsic and intrinsic variables from the environment demanding for mastery. To overcome these challenges, candidates are required to engage in the occupation of studying in order to create and integrate positive adaptive responses that will assist them in achieving mastery over the challenge of passing the NBCOT certification examination.

To master the domains of knowledge required for the certification exam and provide quality care in the field, an OT is required to learn responses or strategies that can be generalized to overcome occupational challenges in multiple situations (Turpin & Iwama, 2011). Thus, it is essential therapists develop a changed response (adaptive positive response) in order to reach relative mastery over the domain and process to

become a certified occupational therapist. Schkade and McLung (2001) stated engagement in occupations leads to the development and integration of adaptive responses. Because it is a game *An Open Book*, is a meaningful occupation that can facilitate adaptive responses.

The project developers developed *An Open Book* and incorporated activities within the game that will provide the opportunity to apply candidates' skillset and evaluate their responses to game questions, which are similar to questions asked on the NBCOT certification examination. "An Open Book" serves as a tool which facilitates the adaptive response generation, evaluation, and generalization process. Table 4.2 explains how elements of the occupational adaptation response generation, evaluation, and integration sub-process were used to design *An Open Book*.

Table 4.2	
<i>Elements of Game Stemmed from Adaptation Response Generation, Evaluation, and Integration Sub-Process</i>	
Sub-process	Elements of the Game Stemmed from the Sub-process
Adaptive Response Generation	Adaptation Gestalt: <ul style="list-style-type: none"> – Variety of questions (simulation, decision-making pathway, multiple choice, and study break) balance the individual's sensorimotor, cognitive, and psychosocial components.
Adaptive Response Evaluation	<ul style="list-style-type: none"> – Individuals are required to evaluate their personal or peers' responses with decision-making pathway and simulation questions. – Individuals are encouraged to document domains they find the most challenging to evaluate and plan for future study.
Adaptive Response Integration	<ul style="list-style-type: none"> – Application of knowledge during the game strengthen players' skillset. – Questions within the game emulate the knowledge required to pass the NBCOT certification examination. Candidates will be able to take the information learned from the game and apply it to practice tests and the actual NBCOT certification examination.

(Cole & Tufano, 2008;Schkade & McLung, 2001;Turpin & Iwama, 2011)

Candidates who play the game will be participating in a meaningful game-oriented occupation based activity that is designed to foster the development of positive adaptive responses. The goal is for candidates to generalize the positive adaptive responses acquired in the game to questions on the NBCOT certification examination (Cole & Tufano, 2008).

Game Description

An Open Book is a board game that aligns with adult learning principles, occupational adaptation model concepts, and the NBCOT certification examination blueprint and domain, task, and knowledge statements. The game board has 57 spaces: 50 colored spaces that directly relate to the NBCOT certification examination blueprint, five study break spaces, one start space, and one finish space. The 50 colored spaces are divided into four colors to represent the four domains of the NBCOT certification examination. Each domain is represented by the percentage of the exam it makes up. The five study break spaces are spread equally throughout the board and are meant to periodically promote a cognitive break. There is also space on the game board for five piles of game cards. Figure 1 depicts the game board as it would be seen by players.

An Open Book also includes 136 game cards. One-hundred and sixteen of the cards consist of multiple-choice, simulation, or decision-making pathway questions that directly relate to a knowledge statement on the Validated Domain, Task, and Knowledge Statement (NBCOT, 2014). Table 4.3 provides a description and rationale for each type of question and the questions on the cards can be found in table format in Appendix A. The remaining 20 cards include activities to balance the players' cognitive, psychosocial,

and sensorimotor subcomponents. The study break cards are provided in Appendix C. Tokens of two types: “Look in a Book” and “Ask a Friend” are also included to promote self-directed research and peer helping. Figure 2 displays the tokens as seen in the game. An example of the question cards as they would be found in the game is presented in Figure 3.

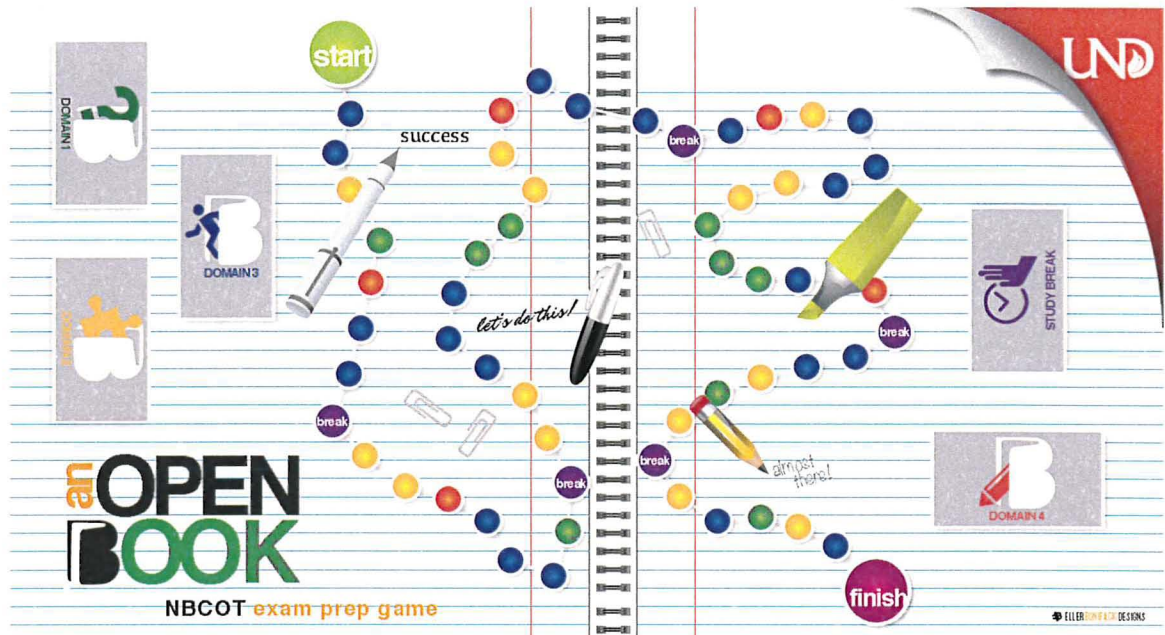


Figure 1. An Open Book Game Board

Green: Domain 1: Assessment; 17% **Yellow:** Domain 2: Treatment Planning; 28% **Blue:** Domain 3: Intervention Implementation; 45% **Orange:** Domain 4: Management & Ethics; 10% **Purple:** Study break spaces

Directions are provided with the game, but house rules are encouraged to allow the game to be a flexible resource for use by the group. The directions include the object of the game, set-up, how to play, descriptions of each type of card, and how to win. Limitations of the game and resources used for writing the questions are also provided to align with adult learning principles. Full directions can be found in Appendix B.

Table 4.3

Description and rationale for question types

Question Type	Description	Rationale
Simulation	Requires player to determine and correctly demonstrate the correct answer to a case study or question.	Stimulates critical-thinking, application of knowledge, and assessment of skills, and learning from past experience (Baid & Lambert, 2010; Knowles et al., 2005)
Decision-making pathway	Requires player to decide what to do in a given situation. No definitive answer is provided; the group discusses and decides if the response was adequate enough to move forward in the game.	Stimulate critical-thinking, decision-making, and group discussion, which promotes learning from past experience (Bochennek, Wittekindt, Zimmerman, & Klingebiel, 2007; Sealover & Henderson, 2005; Knowles et al., 2005).
Multiple-choice	Requires player to select the best choice to answer the question	Stimulate critical-thinking and emulate the multiple-choice section of the NBCOT certification examination (NBCOT, 2014)

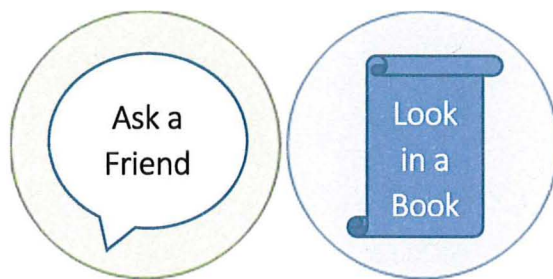


Figure 2. Tokens as Seen in An Open Book

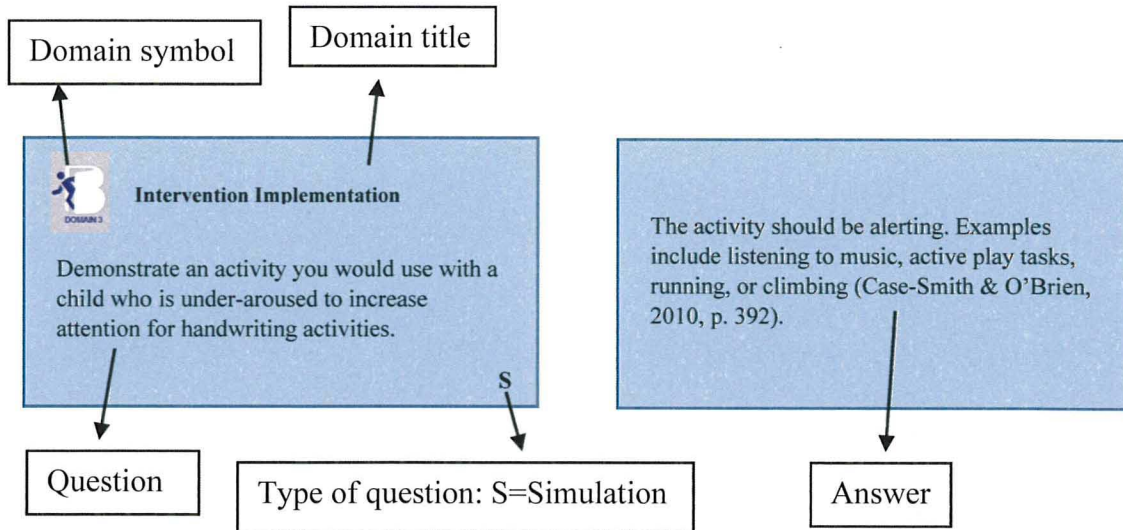


Figure 3: Example of Question Card as Seen in *An Open Book*. Left image is the front of the card and right image is the back of the card.

How to Play

Players initially must set up the board and place the cards on the board so all players have access to them. The cards are divided into five piles: Domain 1, Domain 2, Domain 3, Domain 4, and Study Break. Players then divide into teams of one to four (or more if desired) players. Each team chooses a colored game piece and places it on start. The first team chooses a card from any of the four domain card piles and responds to the question on the card. If the team correctly answers the question, a team member rolls the die and moves forward on the game board. If the team does not correctly answer the question, their turn is over and it is the next team's turn to draw a card. Once off the start space, the color of game square represents which pile to draw a card. The first individual or team to land on the finish space wins the game. At the conclusion of the game, candidates are encouraged to review their notes and plan for future study prior to engaging in the game at another time.

CHAPTER 5

SUMMARY

The purpose of this scholarly project was to create a unique and effective game-oriented occupation-based preparation tool for the National Board for Certification in Occupational Therapy (NBCOT) certification examination. The product developed is a game titled *An Open Book: NBCOT exam prep game*. A comprehensive review of the literature on high stakes exam preparation methods and gaming in education was completed to understand advantages/disadvantages of using a game as a preparation tool for the NBCOT certification examination, and to guide the design of *An Open Book*.

This review identified the following:

- Preparing for high stakes exams can be anxiety provoking, boring, and an overall challenging process (Fleming-Castaldy, 2010);
- Games in higher education facilitate development of and opportunity to apply clinical skills (Peddle, 2011); and
- Games also make difficult information fun and exciting, reduce anxiety and increase confidence, and allow players to learn perspectives from one another (Blakely et al., 2009).

Adult learning theory was chosen to guide the development of this project because key principles in adult learning theory include that learning is situation-based and life transitions are a significant time for learning (Knowles et al., 2005). Candidates

for the NBCOT examination are transitioning from the role of student to occupational therapist. This transitional period is a rich time for learning.

Concepts of the occupational adaptation model were integrated into the design of *An Open Book: NBCOT exam prep game*. The game is designed to facilitate the adaptive response generation process. The aim is for players to develop positive adaptive responses to questions in the game which are similar to questions on the NBCOT certification examination. By developing positive adaptive responses during gameplay, candidates for the NBCOT gain relative mastery of the knowledge required to pass the NBCOT certification examination.

An Open Book: NBCOT exam prep game is designed to promote configuration of players' sensorimotor, psychosocial, and cognitive systems increasing their adaptive gestalt (Schkade & McLung, 2001). The questions in the game serve as the occupational challenge for players to overcome, and require players to use all three components of the person system to answer or complete successfully. Simulation questions require the players to get up and move, which balances sensorimotor systems. Decision-making pathway requires players to discuss with peers, balancing their psychosocial system. Multiple-choice questions require the players to use cognitive systems to answer questions. Lastly, study break cards serve as a cognitive break and require players to move, laugh, and use cognition to perform the task stated on the cards.

Implementation Plan

A pilot research study will be completed to gather data on the experience of playing *An Open Book*. The pilot study will measure players' perception of

effectiveness, efficiency, and satisfaction of using *An Open Book* as a supplementary tool for preparing for the NBCOT certification examination. In addition, the data will be helpful to evaluate the game design. Lastly, the project developers will investigate possible copyright and patent of *An Open Book: NBCOT exam prep game* and then present the game to various publishing and marketing companies.

Limitations & Recommendations

Gaming is most effective as a learning tool when the player enjoys and finds meaning in playing games (Beyelfeld & Struwig, 2007; Hainey et al., 2013). Therefore, if candidates preparing for the NBCOT certification examination do not enjoy engaging in the occupation of playing games, they likely will not benefit from playing *An Open Book: NBCOT exam prep game*. It is recommended that a candidate of the NBCOT certification examination reflect on whether or not they enjoy playing games before they use the tool to prepare for the exam. If the candidate determines they do not like games, the candidate could use the questions from the game as flashcards to study for the NBCOT certification examination.

Games are most effective as a learning tool after the learner has a basic understanding of the topic (Bekebrede et al., 2011). *An Open Book: NBCOT exam prep game* was intended to be played after candidates have already begun preparing for the NBCOT certification examination. It is also recommended players review the NBCOT certification examination blueprint before they play the game, as the structure of the game emulates the NBCOT certification examination blueprint. If a candidate uses *An Open Book: NBCOT exam prep game* before they have reviewed the NBCOT

certification examination blue print or studied any material, it is unlikely they will benefit from utilizing the game as a preparation tool and could become discouraged and anxious about the NBCOT certification examination (Blakely et al., 2009). If a candidate uses *An Open Book: NBCOT exam prep game* before studying any other material, it is recommended he or she document the domains they have difficulty with and use this information to guide future studying.

An Open Book: NBCOT exam prep game has not been trialed at this time, so its effectiveness is unknown. Research, both qualitative and quantitative in nature, on the effectiveness of using *An Open Book: NBCOT exam prep game* to prepare for the NBCOT certification examination would increase the validity and reliability of this preparation tool. This information could be used to modify *An Open Book: NBCOT exam prep game* or guide the development of a new gaming preparation tool.

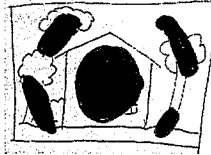
Conclusion

The purpose of *An Open Book: NBCOT exam prep game* is to provide candidates with a gaming-oriented occupation-based preparation tool for the NBCOT certification examination. The game assists candidates in reaching their goal of passing the NBCOT certification examination. *An Open Book: NBCOT exam prep game* is a supplementary preparation tool that can reduce anxiety, increase motivation to study, and allow candidates to learn perspectives from one another prior to the exam (Blakely et al., 2009; Sealover & Henderson, 2005).

APPENDICES

Appendix A
Game Questions in Table Format

Domain 1: Assessment			
<i>Task: 0101: Acquire information about a client's functional skills, roles, context, and prioritized needs through the use of available resources and standardized and non-standardized assessments in order to develop an occupational profile.</i>			
Code (Knowledge statement)	Type of question & Population	Question	Answer (with citation)
010101	Simulation Pediatrics	Demonstrate the landau reflex and state the age of integration.	Answer: When held in prone position, child's head will right to vertical (active head and neck extension). Spine will extend. Scapulae will adduct, forearms pronate, & hips may partially extend 1-2.5 years (McCormack & Perrin, 1997).
	Decision- making pathway Physical Disabilities	Describe expected musculoskeletal changes of an aging adult.	Expert Opinion: Muscles- number and sizes of muscles decreases with age, slower-rate of nerve conduction Joints-ligaments and tendons become less resilient, viscosity of synovial fluid decreases Bones-loss of bone mass and density (Radomski-Trombly & Latham, 2008, p. 978).

010101 (Continued)	Multiple choice Pediatrics	What types of food should a 12 month old be eating? A. Soft foods, mashed table foods B. Meats, coarsely chopped foods C. Coarsely chopped table foods including most meats and raw vegetables	Answer: B Explanation: At this age of development, children should be able to chew and swallow meats, and coarsely chopped foods (Case-Smith & O' Brien, 2010, p. 451).
010102	Simulation Physical Disabilities	Draw a picture of a house from the perspective of a client with advanced macular degeneration.	Example: 
	Decision-making pathway Physical Disabilities	What adaptive equipment would you expect to provide a client with a T10 spinal cord injury in order for them to complete bathing tasks?	Expert opinion: Padded transfer bench and handheld shower (Pendleton & Schultz-Krohn, 2013 p. 975)
	Multiple choice Mental Health	Your client is diagnosed with major depression, first episode. The client has a history of generalized anxiety, and has a family member who has experienced one major depressive episode in the past. What is the client's prognosis? A. Good; it is the first major depressive episode, services were received quickly, and the family member has only experienced one major depressive episode. B. Fair; it is her first major depressive episode, but she has multiple diagnoses and a family history of depression. C. Poor; she has more than one psychiatric disorder and a family history of major depression.	Answer: A Explanation: Prognosis for a specific depressive episode is generally good. It is influenced by length of illness prior to treatment, previous hospitalizations, other psychiatric disorders, length of episode, and family history in that the family member's course can be a predictor of the individual's course (Bonder, 2010, p. 146)

010103	Simulation All	State two questions you would ask a client during an initial evaluation to develop an occupational profile.	Examples: <ul style="list-style-type: none"> - Why were you admitted into the hospital? - What are your goals? Questions during initial evaluations should be: <ul style="list-style-type: none"> - Open ended - Narrative - Elicit factual information (Crepeau, Cohn, & Boyt-Schell, 2009, p. 348)
	Decision-making pathway All	Describe a data-gathering technique you would use to gather information about a client's performance in activities of daily living (ADL's).	Expert Opinion: Therapist could observe, review records, interview the client, and construct an occupational profile (Crepeau, Cohn, & Boyt-Schell, 2009, p. 346).
	Multiple choice Physical Disabilities	A client demonstrates limitations in daily occupations due to cognitive impairments. Which of the following performance-based assessments would provide the most comprehensive information about this client? <ul style="list-style-type: none"> A. Assessment of Motor and Process Skills (AMPS) B. Fluff Test C. The ADL test for those with Apraxia D. Assessment of Communication and Interaction Skills 	Answer: A Explanation: The AMPS is an observational assessment used to measure the quality of a person's ADL assessed by rating the effort, efficiency, safety, and independence of 16 motor and 20 process skill items (Gillen, 2011, p. 504).

	<p>Simulation Physical Disabilities</p>	<p>Set up and administer (with a partner or opponent) an assessment you would use to assess for visual inattention in a client who experienced a CVA. Interpret the results.</p>	<p>Assessment options: 1. Clinical observation 2. Behavioral Inattention Test (BIT) <i>Subtests of BIT:</i> – Line Crossing – Star cancellation – Figure and shape copying – Line bisection (Zoltan, 2007, p. 89-93)</p>
<p>010104</p>	<p>Decision-making pathway All</p>	<p>Describe the steps you would take to competently administer a standardized assessment that is new to you.</p>	<p>Expert Opinion: “Steps to becoming a competent test user: 1. Study the test manual 2. Observe experienced examiners 3. Practice using the test. 4. Check inter-rater agreement with an experienced examiner. 5. Prepare administration and scoring cue sheets. 6. Prepare the testing environment. 7. Consult with experienced examiners about test interpretation. 8. Periodically recheck inter-rater agreement.” (Case-Smith & O’Brien, 2010, p. 237)</p>

<p>010104 (Continued)</p>	<p>Multiple choice Pediatrics</p>	<p>You want to test fine and gross motor skills of a four-year-old client and are deciding between the Peabody Developmental Motor Scales (2nd edition) (PDMS-2) and the Quality of Upper Extremity Skills Test (QUEST). Which assessment would be the best choice and why? A. The PDMS-2 B. The QUEST</p>	<p>Answer: A Explanation: The PDMS-2 is a standardized, norm- and criterion-referenced measure of gross and fine motor skills, so can be utilized to monitor developmental progress over time (criterion-referenced) and compare progress to a normative sample (norm-referenced) (Case-Smith & O'Brien, 2010, p. 214).</p>
<p>010105</p>	<p>Simulation Physical Disabilities</p>	<p>Demonstrate the loss of motor function a person with a complete C6 spinal cord injury would have when attempting to apply roll-on deodorant.</p>	<p>Answer: – Pt. has radial wrist extensor therefore can use tenodesis grasp – Pt. should have fully innervated proximal scapular and shoulder muscles (including biceps) – When acting this out the player should demonstrate difficulty grasping the deodorant because of loss of ability to flex fingers (Radomski & Trombly-Latham, 2008, p. 1189).</p>

010105 (Continued)	Decision-making pathway Physical Disabilities	A referral for a client who recently experienced a CVA states the client demonstrates ideational apraxia when engaging in activities of daily living (ADL). Describe the challenges you expect the client will have when brushing his/her teeth.	Expert Opinion: The client may not know what to do with the toothbrush or toothpaste. They will not know how to sequence the task and may perform it inappropriately. i.e: smear the toothpaste on their face (Gillen, 2011, p. 478).
	Multiple choice Physical Disabilities	You are working with a client who has a diagnosis of pseudo-bulbar paralytic dysphagia due to a brain injury. How would you expect this to affect this client's ability to participate as a church choir member? A. Does not interfere with participation B. Decreased laryngeal elevation results in only 50% participation C. c. Increased or reduced muscle tone causing drooling and decreased tongue control inhibits performance	Answer: C Explanation: Pseudo-bulbar paralytic dysphagia can cause increased or reduced muscle tone which can lead to drooling, poor lip closure, and loss of tongue control (Radomski & Trombly-Latham, 2008, p. 1325).
010106	Simulation Physical Disabilities or Mental Health	Demonstrate one behavior of an individual at an Allen's Cognitive Level 3.	Answer: Displayed one of the following behaviors: 1. Attend to tactile cues 2. Attend to or use materials within arm's reach 3. Imitate manual actions 4. Complete activities from procedural memory 5. Display interest in projects that involve manipulating objects 6. Repeat a step of an activity until the end is reached or all of the material is used (Cole & Tufano, 2008, p. 191)

010106 (Continued)	Decision-making pathway Mental Health	During an interview, an adult client begins to display manipulative behavior. How would you respond?	<p>Expert opinion: Remember to respond with intentionality. When using interpersonal reasoning, you could:</p> <ol style="list-style-type: none"> 1. Collaborate with the client to display an appropriate way to retain and use power within the therapeutic relationship; 2. Pause to try to understand the reasons behind the client's behavior; or 3. Instruct that the behavior is interfering with the assessment and is not acceptable. <p>(Taylor, 2008, p. 241-242)</p>
	Multiple choice Physical Disabilities	<p>A client with a spinal cord injury complains of light headedness and dizziness during an initial evaluation. What is occurring and how would you respond?</p> <ol style="list-style-type: none"> A. Autonomic dysreflexia: have the client sit upright, loosen clothing, and seek medical assistance. B. Autonomic dysreflexia: have the client lie down and recommend abdominal binders or elastic stockings. C. Orthostatic Hypotension: have the client sit upright, loosen clothing, and seek medical assistance. D. Orthostatic Hypotension: have the client lie down and recommend abdominal binders or elastic stockings. 	<p>Answer: D</p> <p><i>Orthostatic hypotension</i> is a sudden drop in blood pressure due to blood pooling in the lower extremities when assuming an upright position whereas <i>autonomic dysreflexia</i> is a sudden increase in blood pressure due to an unopposed sympathetic response to noxious stimuli (i.e. distended bladder, urinary tract infection, or fecal impaction) (Radomski & Trombly-Latham, 2008, p. 1175-1176).</p>

Task 0102: Analyze evidence obtained from the occupational profile to identify factors that influence a client's occupational performance.

	<p>Simulation Mental Health</p>	<p>You are planning an outing with a client who has a diagnosis of agoraphobia. Simulate with another player a preparatory cognitive behavioral technique you could use to decrease stress levels and anxiety in your client before leaving.</p>	<p>Answer: Mindfulness meditation, progressive muscle relaxation, or imagery (Brown & Stoffel, 2011, p. 323).</p>
<p>010201</p>	<p>Decision-making pathway All</p>	<p>A client demonstrates slow processing skills. Using principles of the Ecology of Human Performance model, describe factors within the environment you would evaluate to assist the client to learn skills needed to perform job tasks as a cashier.</p>	<p>Expert Opinion: Therapist should review components within the physical, social, and cultural environment as described by the EHP model. Physical: non-human aspects such as tools, objects, building, etc; Social: norms, role expectations, and social routines that are part of significant relationships to the person as well as organization, institutions, political and economic systems; Cultural: includes customs, beliefs, activities patterns, and behavioral standards shared by the person's associated group and includes politics, laws, opportunities for education, services, employment, and financial assistance (Cole & Tufano, 2008, p. 119).</p>

010201 (Continued)	Multiple Choice Pediatrics	You are working in a school setting and received a referral to evaluate and treat a 9 year old child with autism. If you are using principles from sensory integration frame of reference to guide your evaluation and treatment, what assessment would be appropriate to use with this client?	Expert Opinion: The sensory integration and praxis test is the standardized assessment used to identify sensory integrative problems. Asking parents, teachers, and the child questions will also provide you with more information regarding sensory integrative problems (Case-Smith & O' Brien, 2010, p. 48).
010202	Decision- making pathway Mental Health	A client with schizophrenia is experiencing decreased functioning in completing college course work. What aspect of the environment could be negatively affecting performance?	Expert opinion: An environment with high stress or a professor who is not understanding could negatively affect the student's performance (Bonder, 2010, p. 131).
	Decision- making pathway Pediatrics	A school-aged client displays difficulty with handwriting. Which performance skills could increase functional performance in the activity?	Expert opinion: Performance skills affecting handwriting ability could include: <ul style="list-style-type: none"> - Eye-hand coordination - Dexterity - Visual-motor integration/coordination - Perceptual-motor processes - Cognitive processes - Language processes (Case-Smith & O' Brien, 2010, p. 556-557)

010202 (Continued)	Multiple Choice Physical Disabilities	During the initial evaluation, an outpatient who experienced a myocardial infarction reported difficulty with completing carpentry work. What demand of carpentry do you predict is making it difficult for the client? A. 90 degrees of shoulder flexion. B. 5.5-6.5 METs. C. 120 pounds of grip strength.	Answer: B Explanation: The client's endurance is likely to be impaired following a myocardial infarction (Radomski & Trombly-Latham, 2008, p. 177).
010203	Simulation Mental Health	Simulate a side effect a client taking an SSRI and SNRI for depression may experience that would negatively impact participation in occupational therapy.	Answer: Insomnia, Drowsiness, and Nausea (Brown & Stoffel, 2011, p. 163)
	Decision- Making Pathway Physical Disabilities	You are performing a home assessment for a client diagnosed with Alzheimer's disease. Caregivers express they want the client to stay home as long as possible. Share environmental components within the home that may hinder occupational performance.	Expert Opinion: Therapist should evaluate the following: – Clutter within home – Color & texture of furniture, carpet, and walls in home – Organization of home – Safety of home (stoves/furnaces/fall hazards?) (Radomski & Trombly-Latham, 2008, p. 993)
	Multiple Choice Pediatrics	You are working with a child who has difficulty voluntarily releasing grasp in the right hand. How will this affect the child's performance in play tasks? A. Unable to use grasp patterns during play that involve control of the intrinsic finger muscles B. Overextend fingers during release, limiting ability to manipulate toys C. Unable to combine wrist flexion and finger extension when reaching for toys	Answer: B Explanation: Child's grasp and release patterns are atypical, so when attempting to grasp/release an object, a child will overextend fingers, limiting ability to manipulate toys (Case-Smith & O'Brien, 2010, p. 306-307).

Domain 2: Treatment Planning			
<i>Task: 0201: Analyze and interpret standardized and non-standardized assessment results, using information obtained about the client's current condition, context, and priorities in order to develop and manage client-centered intervention plans.</i>			
Code (Knowledge statement)	Type of question & Population	Question	Answer (with citation)
020101	Simulation Physical Disabilities	Give this card to another player who will assume the muscle strength listed on the back of the card. Assess his or her elbow flexion strength via manual muscle test and determine if the individual needs strengthening as part of the intervention plan.	Manual muscle score: <i>Left: 4/5</i> (good: the part moves through full range of motion (ROM) against gravity and takes moderate resistance) <i>Right 2/5</i> (poor: the part moves through full ROM in a gravity-eliminated plane with no added resistance) *Strengthening would be beneficial as a part of the intervention plan considering the current scores (Radomski & Trombly-Latham, 2008, p. 146).
	Multiple Choice Pediatrics	During observation of a pediatric client in the classroom setting, you notice the child struggles to turn the pencil from writing to erasing position, to manage the worksheet, and to use the eraser for correcting errors. What performance skills may be influencing the child's handwriting ability? A. Poor in-hand manipulation skills and fine motor coordination B. Short attention span and impulsiveness C. Decreased gross motor coordination and visual-perceptual skills	Answer: A Explanation: in-hand manipulation and fine motor skills are used for managing the paper and pencil while writing. (i.e. complex rotation involves the rotation of an object 180 degrees as in turning a pencil over to use the eraser). (Case-Smith & O'Brien, 2010, p. 284-285 & 563).

<p>020101 (Continued)</p>	<p>Multiple choice Physical Disabilities</p>	<p>A 40-year-old male client averaged 75 pounds of grip strength for his dominant right hand. The average score for his age group is 117 with a standard deviation of 21. Is grasp considered weak for the client? A. Yes B. No</p>	<p>Answer: B Explanation: Grasp is considered weak or abnormal if it is 3 standard deviations (SD) from the mean. In this example, his score is only 2 SD below the mean as shown below. <u>His score (75) – Norm score (117)</u> SD (21) = -42/21 = -2 SD (2 SD below the mean) (Radomski & Trombly-Latham, 2008, p. 176)</p>
	<p>Decision-making pathway All</p>	<p>What steps would you take to assure accurate interpretation of a standardized assessment when administering the assessment for the first time?</p>	<p>Expert opinion: “Read the test interpretation section of the examiner’s manual and discuss interpretation of the test with experienced examiners. Understand what conclusions can and cannot be drawn about a client’s performance based on the items administered and standard scores obtained” (Case-Smith & O-Brien, 2010, p. 237).</p>

020101 (Continued)	Simulation Pediatrics	Calculate the chronologic age and corrected age for a child who was due on September 20, 2014, but born on June 12, 2014. The date of testing is February 25, 2015. Round to the nearest month.		Year	Month	Day
			Chronologic Age			
			Date of Testing	2015	2	25
			Birth Date	2014	7	12
			Chronologic Age	0	7	13
			Prematurity			
			Due date	2014	9	20
			Birth date	2014	7	12
			Prematurity	0	2	8
			Corrected Age			
			Chronologic Age		7	13
			Prematurity		2	8
			Corrected Age		5	5
			<p>Chronologic Age: 7 months (round down when day is 15 or less) Corrected Age: 5 months (Case-Smith & O-Brien, 2010, p. 222)</p>			
020102	Simulation Physical Disabilities	A client has been referred to you for driving rehabilitation. After performing a depth perception screening and the Motor-Free Visual Perception Test, you find your client has poor depth perception. Write a short-term goal for this client.	Example: Client will independently perform driving simulation with 0 reported crashes.			
			Factors to include in establishing goals can be found in: (Crepeau, Cohn, & Boyt-Schell, 2009, p. 557).			

020102 (Continued)	Decision-making pathway Pediatrics	Describe 2 factors therapists' must consider when establishing a goals for clients.	Expert Opinion: Factors to include in establishing goals: <ul style="list-style-type: none"> – Analysis of evaluation – Client's ability to learn – Prognosis – Time allocated for intervention – Client's discharge disposition – Client's ability to follow through with routine/technique (Crepeau, Cohn, & Boyt-Schell, 2009, p. 557).
	Simulation Mental Health	An outpatient in a day treatment program is developing a plan for returning to school. The client is disorganized in thought processing and has poor short-term memory. What would be an appropriate long-term goal for this client?	Example Goal: Client will develop an educational plan with use of organizational tool (ie: calendar, planner) independently. Factors to include in establishing goals can be found in: (Crepeau, Cohn, & Boyt-Schell, 2009, p. 557).
	Multiple Choice Physical Disabilities	An outpatient has a goal of gaining grip strength on the right upper extremity to increase performance in daily tasks after a distal ulna fracture. In the 3rd week of therapy, grip strength has increased from 10 lbs. to 15 lbs. on the right dominant hand. Should you continue working on this skill in therapy? A. Yes, the client needs to gain 5 lbs. of grip strength to perform daily tasks. B. Yes, the client still needs to gain 10 lbs. of grip strength to perform daily tasks.	Answer: A Explanation: Client requires ~ 20 lbs. of grip strength to open most generic containers (Rahman, Thomas, & Rice, 2002).

020102 (Continued)	Simulation Pediatrics	After completing an assessment, you find your client has difficulties discriminating vestibular-proprioceptive information. Role play with another player an intervention that would facilitate the child's development of vestibular-proprioceptive skills using a sensory integration approach.	An activity that would meet the child's needs should be a tactile activity combined with vestibular and proprioceptive activities to improve praxis and spatial awareness (Crepeau, Cohn, & Boyt-Schell, 2009, p. 807).
020103	Simulation All	Think about the community in which you completed your fieldwork and identify a need for program development or client advocacy. Share with the group.	Identified a need within the community or facility that would benefit the population served (Jacobs & McCormack, 2011, p. 311).
	Decision-making pathway Physical Disabilities	While working in a transitional care unit, you notice a large percentage of referrals to occupational therapy are due to falls within clients' homes. Describe a program you would implement to meet the needs of the population.	Expert opinion: Develop a multi-disciplinary program that includes several of the following approaches: home modifications, education on health and safety, medication management, vision management, gait and balance training, and exercise (Chase, Mann, Wasek, & Arbesman, 2012).
	Multiple choice All	Which of the following aspects of federal legislation requires continued advocacy for the profession? A. Includes rehabilitation and habilitation as a mandatory benefit. B. Does not cover occupational therapy services provided via telehealth. C. Promotes accommodations to enable employment.	Answer: B Explanation: Occupational therapists must advocate for reimbursement of their services to maintain the profession. (Jacobs & McCormack, 2011, p. 445)

020103 (Continued)	Decision-making pathway All	What is the FIRST step in developing a diabetes prevention program within your community?	Expert opinion: Conduct a needs assessment to “establish the potential demand for a product or service within a target population.” (Jacobs & McCormack, 2011, p. 146)
	Multiple Choice All	Several clients who recently acquired insurance through the same insurance company have been denied reimbursement for mental health services. What policy would help you advocate for this person? A. Americans with Disabilities Act of 1990 B. Balanced Budget Act of 1997 C. Patient Protection and Affordable Care Act of 2010	Answer: C Explanation: The Patient Protection and Affordable Care Act of 2010 includes mental health and substance abuse services under the required benefits category for all new health plans. (Jacobs & McCormack, 2011, p. 447)
<i>Task 0202: Collaborate with the client, the client’s relevant others, occupational therapy colleagues, and other professionals and staff, using a client-centered approach to manage occupational therapy services guided by evidence and principles of best practice.</i>			
020201	Decision-making pathway Mental Health	Describe the responsibilities of an occupational therapist working as case manager in an assertive community treatment program.	Coordinating care with other team members, carrying a caseload, and carrying out all duties of a team member (Brown & Stoffel, 2011, p. 576).
	Multiple Choice Physical Disabilities	An outpatient is working toward gaining independence with driving post-stroke. During a driving simulation session, you notice the client is having difficulty following road signs. From which of the following do you request a consult? A. Physician B. Speech Language Pathologist C. Nursing D. Optometrist	Answer: B Explanation: Speech language pathologist will be the expert of any language deficits that may be contraindicated for safe driving (Gillen, 2011, p. 602).

<p>020201 (Continued)</p>	<p>Decision-making pathway Physical Disabilities</p>	<p>Describe the roles of a physical therapist and occupational therapist when treating a client with dysphagia.</p>	<p>Expert Opinion: PT's primary focus is on increasing balance, strength, and motor control of client.</p> <p>Occupational therapy's role is to facilitate appropriate positioning during eating, improvement of motor control at each stage of swallow, reestablishment of oral eating to the safest, optimum level on the least restrictive diet, prevent aspiration, and maintenance of an adequate hydration and nutritional intake (Pendleton & Schultz-Krohn, 2013, p. 698).</p> <p>**highly variable depending on practice setting</p>
	<p>Multiple Choice Physical Disabilities</p>	<p>A client who was referred for treatment of right upper extremity bicep tendinitis verbalizes a 7/10 pain level, demonstrates positive speeds test, and upon palpation you cannot find the insertion of the biceps tendon. Client reports that he heard a pop in his elbow during work. What should you do next?</p> <ul style="list-style-type: none"> A. Continue with therapy and contact primary care provider B. Discontinue therapy and contact primary care provider C. Continue with therapy and monitor status 	<p>Answer: B Explanation: Speed's test: A positive speed test is indicative of a bicipital tendinitis. If no tendon is felt at the insertion of the biceps this can be indicative of a rupture. If a rupture is suspected upon evaluation therapist should stop evaluation and contact physician (Konin et al., 2006, p. 27).</p>

<p>020201 (Continued)</p>	<p>Simulation Physical Disabilities</p>	<p>Describe the roles of an occupational therapist and a physical therapist in a falls prevention program.</p>	<p>Physical therapist may look at how clients negotiate stairs, gait patterns, balance, and movement. (Waite, 2014, p. 11-14).</p> <p>Occupational therapists analyze environment to identify risk factors, make recommendations on adaptations or changes to environment to prevent falls, identifying subjective influences on functional capacity (Peterson, Finlyason, Elliot, Painter, & Clemson, 2012).</p>
<p>020202</p>	<p>Decision-making pathway Mental Health</p>	<p>An inpatient in a psychosocial setting was recently deemed medically stable and safe outside of the hospital. The client continues to display decreased communication, emotional regulation, and stress management skills. What services would you recommend for discharge?</p>	<p>Expert opinion: A partial hospitalization program or intensive outpatient program would provide support for recovery and allow the client to practice new skills while the client can participate in meaningful life roles at home (Brown & Stoffel, 2011, p. 587).</p>
	<p>Multiple Choice Mental Health</p>	<p>You are writing the intervention plan for an individual with schizoaffective disorder who was referred to your day treatment program. What would you expect for the duration of services for this individual?</p> <ul style="list-style-type: none"> A. Days to weeks B. Weeks to months C. Months to years 	<p>Answer: A (Pendleton & Schultz-Krohn, 2013, p. 44)</p>

020202 (Continued)	Decision-making pathway Physical Disabilities	An inpatient in a rehabilitation setting is tested as “modified independent” with all ADLs, but has concerns regarding the IADLs of driving and meal preparation. A supportive social network can assist with the IADL tasks as needed. What discharge setting and services would you recommend?	Expert opinion: Discharge to home with out-patient services for remaining functional deficits (Pendleton & Schultz-Krohn, 2013, p. 50).
	Multiple choice Physical Disabilities	A client who is experiencing functional deficits with ADLs due to a traumatic brain injury was admitted to your acute rehabilitation facility. What frequency of services will you provide? A. Daily for at least one hour sessions B. Daily for 30 minute sessions C. Weekly for one hour sessions D. Monthly for one hour sessions	Answer: A Explanation: Clients in an acute rehabilitation facility receive 3 hours of therapy services per day divided between PT, OT, and SLP (Pendleton & Schultz-Krohn, 2013, p. 44).
	Multiple Choice Pediatrics	A pediatric client who comes from a family of low socioeconomic status would benefit from positioning devices and adaptive equipment for feeding that are not covered by insurance. What recommendations or resources would you provide the family? A. Retail store that sells new adaptive equipment and medical supplies B. Program that donates or sells used adaptive equipment and medical supplies C. Refrain from recommending adaptive equipment that the family cannot afford	Answer: B Explanation: A therapist who is sensitive to and understands a family with a low socioeconomic status can make recommendations that help the child while supporting the family (Case-Smith & O’Brien, 2010, p. 133).
020203	Decision Making Pathway All	How do you determine when to discharge a client from an acute hospital setting?	Expert Opinion: A therapist should make recommendations based on the client’s current functional status and rehabilitation needs. Client should be medically stable at time of discharge (Smith-Gabai, 2011, p. 687).

020203 (Continued)	Simulation Mental Health	A client is admitted to a long-term psychiatric hospital and is unable to participate in work, activities of daily living, and leisure occupations. Write two short-term goals for this client and prioritize the goals based on expected outcomes of a client receiving services at a long-term psychiatric hospital.	<p>Before admission to a long-term psychiatric hospital, a client's life is in turmoil. Therefore, occupational therapists must work with clients to facilitate the acquisition of skills required for engaging in a daily routine (Brown & Stoffel, 2011, p. 552).</p> <p>Example of Goals:</p> <ol style="list-style-type: none"> 1) Client will utilize relaxation techniques (deep breathing, taking a break, reading, etc;) to regulate emotions with 1-2 verbal cues. 2) Client will complete oral hygiene tasks 2x/day with 1-2 verbal cues. <p>Factors to include in establishing goals can be found in: (Crepeau, Cohn, & Boyt-Schell, 2009, p. 557).</p>
	Multiple Choice Physical Disabilities	<p>Which of the following goals is the most crucial goal to address in order to ensure a client successfully transitions from the hospital to a skilled nursing facility?</p> <ol style="list-style-type: none"> A. Client will perform lower body dressing tasks with moderate assistance by discharge. B. Client will tolerate 1 hour of activity with no rest breaks by discharge. C. Client will perform upper body dressing tasks with stable vitals and moderate assistance by discharge. 	<p>Answer: C</p> <p>Explanation: A person transferring to a skilled nursing facility must be medically stable and able to tolerate at least 1.5 hours of therapy (Smith-Gabai, 2011, p. 693).</p>


020203 (Continued)	Multiple Choice Physical Disabilities	<p>Your client had an extensor V zone repair on the 2nd digit of the dominant hand. The client reports having difficulty brushing hair. Which of the following is the MOST appropriate goal to address four weeks post-surgery?</p> <ul style="list-style-type: none"> A. Client will demonstrate 45° of extension of PIP joint of 2nd digit in order to perform grooming tasks. B. Client will demonstrate 70° of extension at PIP joint of 2nd digit in order to perform grooming tasks. C. Client will don splint independently in order to protect surgical wound when completing hygiene tasks. 	<p>Answer: A Explanation: At four – five weeks post-surgery clients should demonstrate full AROM (Burke, 2006, p. 283)</p>
	Multiple Choice Mental Health	<p>Your client was admitted to a long-term psychiatric hospital after being arrested for walking around town shirtless and actively hallucinating about the rapture. Police reports state client was living a chaotic lifestyle and was in and out of jail for the past 6 months. Which of the following goals is the most important goal to work toward in order to prepare the client for discharge?</p> <ul style="list-style-type: none"> A. Participate in daily routine with 3-4 verbal cues for initiation. B. Identify 3 strategies to use for regulating emotions with 1 verbal cue. C. Sequence a meal with 1-2 verbal cues. 	<p>Answer: A Explanation: Before admission to an acute psychiatric hospital, the client's life was in turmoil. Therefore, occupational therapists must work with clients to facilitate the development of skills required for engaging in a safe daily routine (Brown & Stoffel, 2011, p. 552).</p>

Domain 3: Intervention

Task: 0301: Manage interventions for the infant, child, or adolescent client, using clinical reasoning, the intervention plan, and best practice standards consistent with pediatric conditions and typical developmental milestones (e.e., motor, sensory, psychosocial, and cognitive) in order to support participation within areas of occupation.

Code (Knowledge statement)	Type of question & Population	Question	Answer (with citation)
030101	Multiple Choice Pediatrics	Deficits in which body function associated with cerebral palsy can isolate the child, create stress and frustration for child and parent, and negatively affect the development of psychosocial skills? A. Sensory B. Speech and language C. Neuro-musculoskeletal	Answer: B Explanation: Speech and language deficits lead to communication limitations (Case-Smith & O'Brien, 2010, p. 160)
030102	Multiple Choice Pediatrics	A child stands too close to peers and exerts too much pressure on a pencil. Which of the following interventions is most appropriate for increasing the child's performance in these school-related tasks? A. Activities aimed to increase body awareness B. Activities aimed to increase bilateral motor coordination C. Activities aimed to increase motor accuracy	Answer: A Explanation: Body awareness is the conscious awareness of the location, position, and movement of body parts (Case-Smith & O'Brien, 2011, p. 354-356).
030103	Simulation Pediatrics	Demonstrate an activity you would use with a child who is under-aroused to increase attention for handwriting activities.	The activity should be alerting. Examples include listening to music, active play tasks, running, or climbing (Case-Smith & O'Brien, 2010, p. 392).


030104	Simulation Pediatrics	A child demonstrates a manual muscle strength of 3/5 on bilateral upper extremities. Simulate a play activity that could be used to strengthen this child's upper extremities.	When a child demonstrates a muscle grade of 3/5, an activity requiring little to no resistance and movement against gravity is appropriate (Pendleton & Schultz-Krohn, 2013, pp. 744).
030105	Decision-making Pathway Pediatrics	You are designing a small group life-skills program for adolescents. Describe how you would design or modify a meal preparation group to meet the client factor needs of a client with intellectual disability.	Expert opinion: Provide a picture-based cookbook for following a recipe (Case-Smith & O'Brien, 2010, p. 534).
030106	Decision-Making Pathway Pediatrics	Describe the most appropriate splint to use for a child who has severe flexor spasticity of an upper extremity.	Expert Opinion: Wrist in slightly more extension than child usually would receive and fingers in slight extension (Case-Smith & O'Brien, 2010, p. 354-356).
030107	Multiple Choice Pediatrics	Which of the following is a high-tech assistive device for a pediatric client with inherited retinal degenerative disorder to enhance participation in educational settings? A. Screen and text reader B. Eyeglasses C. Graphic organization software D. Environmental control unit	Answer: A Explanation: Retinal degenerative disorders affect vision. A screen and text reader is a high-tech assistive device to help with low vision, whereas eyeglasses are considered a low-tech device (Case-Smith & O'Brien, 2010, p. 616).
030108	Multiple Choice Pediatrics	A pediatric client has poor short-term memory due to a head injury. Which of the following is the most appropriate adaptations you can make during interventions to meet the child's needs? A. Use preferred tasks B. Use verbal cues (e.g., jingles, rhymes, songs) C. Amplify sensory characteristics of objects	Answer: B Explanation: Verbal cues will assist the client in remembering sequence of tasks (Case-Smith & O'Brien, 2010, p. 493).

030109	Simulation Pediatrics	Demonstrate one intervention you could use with a pediatric client to decrease oral hypersensitivity.	<p>Player demonstrated an oral sensory exploration or a desensitization technique. Examples include:</p> <ul style="list-style-type: none"> - A song/game that encourages self-directed touch to the face - Applying firm pressure to the gums or palate - Generalized sensory deep pressure or calming strategy such as slow, linear rocking to use prior to feeding (Case-Smith & O'Brien, 2010, p. 460)
030110	Decision-making pathway Pediatrics	<p>Describe a positioning technique that could be used to maximize independence with eating for the child depicted in this picture.</p> 	<p>Expert Opinion: Therapist must identify positions supporting independent task performance and consider the following:</p> <ul style="list-style-type: none"> - Weight is evenly distributed on the sitting base - Feet and elbows are supported - Hands positioned for use - Visual focus on task <p>Some appropriate modifications for this child:</p> <ul style="list-style-type: none"> - Position child in a seat with safety belt - Provide back support with use of a cushion <p>(Case-Smith & O'Brien, 2010, p. 493).</p>

030111	Multiple choice Pediatrics	<p>You are addressing the interests and needs in the area of employment for a high-school student with emotional and behavioral disabilities. Which of the following is the FIRST intervention to use with the adolescent?</p> <ul style="list-style-type: none"> A. Explicit teaching, coaching, and support to develop self-advocacy skills B. Social skills training, practice, and feedback during a variety of work experiences C. Identification of a safe place within the work setting to go to relax 	<p>Answer: B Students with emotional and behavioral disabilities experience difficulty obtaining and maintaining employment due to lack of workplace social skills and behaviors and self-awareness regarding job performance (Case-Smith & O'Brien, 2010, p. 822).</p>
030112	Multiple choice Pediatrics	<p>A child who uses a wheelchair for mobility has poor posture at the spine, buttocks, and thighs. Which of the following is the most appropriate type of seating system for this child?</p> <ul style="list-style-type: none"> A. Contoured B. Planar C. Custom-molded seat cushions 	<p>Answer: A Explanation: contoured seating system allows the body to have more contact with the support surface because its shape conforms to the curves of the spine, buttocks, and thighs (Case-Smith & O'Brien, 2011, p. 641).</p>
030113	Decision-making pathway Pediatrics	<p>A pediatric client with muscular dystrophy requires a wheelchair for mobility. What environmental modifications would you recommend to improve accessibility of the child's bedroom?</p>	<p>Expert opinion: Examples of modifications may include a low closet pole, built-in bookshelves at low and medium heights, a downstairs bedroom, and increased space around objects (Case-Smith & O'Brien, 2010, p. 492).</p>

030114	Simulation Pediatrics	Draw a picture of a playground that would accommodate children who use wheelchairs for mobility.	Picture should contain at least one of the following: - ½ of elevated play areas must be wheelchair accessible - 1 of each type of ground level play activity must be wheelchair accessible - Accessible route of travel to the play area (Department of Justice, 2010)
030115	Multiple Choice Pediatrics	What is the most important information to obtain from parents of a pediatric client prior to making recommendations for a home program? A. Family's daily routines and typical flow of activities B. Number of family members living at home C. Skills the client needs to improve occupational performance	Answer: A. Explanation: Understanding the daily routines will allow the therapist to make recommendations that are realistic and can be incorporated into the family's routine, which could increase adherence to the program (Case-Smith & O'Brien, 2010, p. 132).
<i>Task 0302: Manage interventions for young, middle-aged, or older adult client, using clinical reasoning, the intervention plan, and best practice standards consistent with general medical, neurological, and musculoskeletal condition(s) in order to achieve functional outcomes within areas of occupation.</i>			
030201	Decision-making pathway Physical Disabilities	Describe how the occupation of sleep can affect marital relationships if one of the partners has a lower limb amputation.	Expert Opinion: Client may have difficulties interacting with their spouse during sleep (Pendleton & Schultz-Krohn, 2013, p. 1187).

030202	Simulation Physical Disabilities	A client was recently diagnosed with rheumatoid arthritis. Demonstrate a joint protection strategy that you would give the client to reduce pain and deformity.	<p>Demonstrated one of the following principles of joint protection:</p> <ul style="list-style-type: none"> - Respect pain as a signal to stop the activity - Maintain muscle strength and joint ROM - Use each joint in its most stable anatomical and functional plane - Avoid positions of deformity and forces in their directions - Use the largest, strongest joints available for the job - Ensure correct patterns of movement - Avoid staying in one position for long periods <p>(Radomski & Trombly-Latham, 2008, p. 1222)</p>
030203	Simulation Physical Disabilities	With an opponent, simulate how a card game can be used to increase standing tolerance.	<p>Activities are graded according to abilities and capacities of each client. A therapist could instruct a client to stand during his/her turn or for half of time playing the game.</p> <p>(Pendleton & Schultz-Krohn, 2013, p. 736)</p>

030204	Multiple Choice Physical Disabilities	<p>Following a peripheral nerve injury, a client can now perceive 30 cycles per second vibration and moving touch in the affected area. Which of the following is a technique for <i>early-phase</i> sensory re-education?</p> <ul style="list-style-type: none"> A. Instruct client to grasp and manipulate items with eyes open, closed, and then open again. B. Apply moving strokes to affected area and instruct client to put into words what is being felt. C. Time the correct identification of a variety of objects with vision occluded. 	<p>Answer: B Explanation: During early-phase sensory reeducation, the focus is on developing the ability to perceive constant and moving touch at the fingertips and demonstrating localization of touch. The techniques in answers a and c would be used during late-phase sensory reeducation. (Radomski & Trombly-Latham, 2008, p. 721)</p>
030205	Multiple Choice Physical Disabilities	<p>A client reports increased pain, weakness, and fatigue using right upper extremity to perform daily tasks. Which of the following physical agent modalities is the most appropriate to use as an adjunct to therapy?</p> <ul style="list-style-type: none"> A. Ultrasound B. Neuromuscular electrical stimulation C. Ice pack D. Iontophoresis 	<p>Answer: B Explanation: Neuromuscular electrical stimulation; This modality is used to increase motion, reduce edema, reeducate muscles, & decrease pain (Pendleton & Schultz-Krohn, 2013, p. 748).</p>
030206	Simulation Physical Disabilities	<p>Your client experienced trauma to the ulnar collateral ligament of the metacarpal-phalangeal joint. Form a paper example of the splint you would fabricate for the client. Use a partner or opponent's hand as a model.</p>	<p>Demonstrated process for developing a hand-based thumb-spica splint with IP joint free. See picture below for an example (Radomski & Trombly-Latham, 2008, p. 432)</p> 

030207	Decision-Making Pathway Physical Disabilities	Describe adaptive equipment a client with a complete C4 spinal cord injury could use for repositioning in bed.	Expert Opinion: Client likely will require a caregiver to assist with bed mobility. Full electric hospital bed with bed rails would be most appropriate for decreasing caregiver burden. Client will likely be able to assist with log rolling by hooking arm through bed rails (Pendleton & Schultz-Krohn, 2013, p. 971).
030208	Multiple Choice Physical Disabilities	A client with dysphagia displays drooling and food/drink spillage from the mouth. What is a feeding technique used during the oral preparatory stage? A. Use a straw when drinking liquids B. Tuck chin toward chest during swallow C. Clear throat immediately after swallow	Answer: A. Explanation: Using a straw when drinking liquids would be used during the oral preparatory stage, whereas B. is a technique used during the oral stage and C. is during the pharyngeal stage (Pendleton & Schultz-Krohn, 2013, p. 707).
030209	Simulation Physical Disabilities	Instruct an opponent how to complete a transfer from standing to sitting after a left posterolateral hip replacement.	Therapist should instruct client to extend operated leg forwardly, reach for armrests while leaning back slightly, and sit down slowly keeping operated leg straight so hip does not bend past 90 ⁰ (Pendleton & Schultz-Krohn, 2013, p. 1084).

030210	Decision-making pathway Physical Disabilities	An elderly client with Parkinson's disease lives in an assisted living facility where the dining room and garage are both located a long distance from the client's apartment. Would you recommend a manual or electric wheelchair for this client? Justify your choice.	Expert opinion: Electric chair; consider the following questions when making the decision: Does the client: <ul style="list-style-type: none"> - Demonstrate insufficient endurance and functional ability to propel a manual wheelchair independently? - Demonstrate progressive functional loss, making powered mobility an energy-conserving option? - Need powered mobility to enhance independence at home and in the community? - Demonstrate cognitive and perceptual ability to safely operate a power-driving system? (Pendleton & Schultz-Krohn, 2013, p. 250)
030211	Decision-making pathway Physical Disabilities	Describe home modifications used to increase accessibility and mobility for a client with Parkinson's disease.	Expert Opinion: Loose rugs should be removed, furniture should be placed close to walls, bath and toilet railings, and a raised toilet seat are appropriate (Pendleton & Schultz-Krohn, 2013, p. 943).

030212	Simulation Physical Disabilities	Demonstrate a physical activity demand that places people at risk for the development of cumulative trauma disorders in the work place.	<p>Demonstrated an activity found within a work place that includes one or more of the following:</p> <ul style="list-style-type: none"> - Repetition - Force - Awkward or static posturing - Prolonged direct pressure on soft tissue - Vibration - Exposure to cold - Inappropriate or inadequate hand tools <p>(Pendleton & Schultz-Krohn, 2013, p. 369)</p>
030213	Multiple Choice Physical Disabilities	<p>A client who has diabetic retinopathy reports difficulties reading and writing texts on the cellphone. Which of the following adaptations would BEST improve the client's ability to text on their phone?</p> <ul style="list-style-type: none"> A. Increase the size of the font B. Increase the brightness on the phone C. Change the background colors to increase contrast 	<p>Answer: C Explanation: Clients with diabetic retinopathy develop scotomas, which cause decreased contrast sensitivity and color discrimination (Radomski & Trombly-Latham, 2008, p. 730).</p>

030214	Decision-Making Pathway Physical Disabilities	An inpatient with coronary heart failure and limited endurance is being discharged to home in three days. What would you include in a home program for this individual?	Expert opinion: A home program for an individual with coronary heart failure could include the following: <ul style="list-style-type: none"> - Tips for pacing and work simplification - A mild exercise program - Information regarding diagnosis - Signs and symptoms of coronary heart failure and when to seek help (Radomski & Trombly-Latham, 2008, p. 1305)
<i>Task 0303: Manage interventions for the young, middle-aged, and older adult client, using clinical reasoning, the intervention plan, and best practice standards consistent with psychosocial, cognitive, and developmental abilities in order to achieve functional outcomes within areas of occupation.</i>			
030301	Decision Making Pathway Mental Health	Describe how performance in work activities can be affected if a person has borderline personality disorder.	Expert Opinion: Typically, individuals with borderline personality disorder are independent in self-care tasks, except when in crisis. Individuals may be impulsive at times and have poor emotional regulation skills; this can cause challenges in performing this occupation (Cara & MacRae, 2013, p. 331).

030302	Decision-making Pathway Mental Health	A young adult in a life skills group often interprets or offers solutions to other members' problems instead of commenting about personal issues demonstrating fear of being rejected. What would you do as the therapist to address the fear in the group setting?	Expert opinion: Raise the fear of rejection as a group issue to allow the group members to identify with and support each other (Cara & MacRae, 2013, p. 688).
030303	Simulation Mental Health	Simulate how you would use a cognitive remediation approach to assist a client with schizophrenia how to independently manage their medications.	Repetition and rehearsal are essential characteristics of the interventions when using this approach (Brown & Stoffel, 2011, p. 251).
030304	Multiple Choice Mental Health	Which of the following is the best environmental modification to enhance social participation for residents within a group home? A. Add decorations that demonstrate sensitivity to diversity B. Provide computer access, training, and supervision C. Change furniture placement to facilitate interaction D. Assure adequate lighting for tasks and activities	Answer: C Explanation: Facilitating interaction could enhance social participation among residents of a group home. Answer A. is an example of a modification related to the cultural environment, B. is related to the virtual environment, and D. is related to the physical environment (Cara & MacRae, 2013, p. 35).
030305	Simulation Mental Health	Create a compensatory tool to make home management tasks more manageable.	Creation of a weekly checklist or schedule would make this task more manageable (Brown & Stoffel, 2011, p. 254).

030306	Multiple Choice Mental Health	<p>A psychiatric inpatient has difficulty expressing personal opinions and primarily desires to please the therapist. Which type of activity would most benefit this client?</p> <p>A. Structured activity with few choices B. Unstructured activity with several choices</p>	<p>Answer: B Explanation: Offering a selection of materials and no one 'right' way to complete the project allows the client to explore and experiment with personal preferences and choice (Cara & MacRae, 2013, p. 660).</p>
030307	Decision- Making Pathway Mental Health	<p>Describe topics of education appropriate for a caregiver of a client with dementia.</p>	<p>Expert Opinion: Therapist should provide education on:</p> <ul style="list-style-type: none"> - Etiology and progression of disease - Strategies to adapt activities - Compensatory techniques to use with client <p>(Brown & Stoffel, 2011, p. 235).</p>

Domain 4: Management			
<i>Task: 0401: Maintain and enhance competence, using professional development activities relevant to practice, job responsibilities, and regulatory body in order to provide evidence-based services.</i>			
Code (Knowledge statement)	Type of question & Population	Question	Answer (with citation)
040101	Decision- making Pathway All	List two professional development activities you will use in your first five years of practice.	Expert opinion: Professional development activities can include the following: <ul style="list-style-type: none"> - Mentorship - Self-reflection - Self-assessment - Professional portfolio - AOTA Professional Development Tool (Jacobs & McCormack, 2011, p. 244)
	Simulation All	Develop one question you would ask yourself during self-reflection in relation to professional development.	The question related to career goals, strengths, skills they wish to gain, or weaknesses they wish to overcome. The following are sample questions that could be asked: <ul style="list-style-type: none"> - What are my career aspirations? - What are my goals for the next 2, 5, and 10 years? - What competencies do I need to develop? What do I need to know more about? (Jacobs & McCormack, 2011, p. 244)

40102	Decision-making Pathway All	Describe differences between a type I and type II research error.	Expert Opinion: Type I error is when a researcher rejects the null hypothesis when it should be accepted. Type II error is when a null hypothesis is accepted when it should be rejected (Stein, Rice, & Cutler, 2013, p. 216).
	Multiple Choice All	The purpose of using a paired-data sample statistical model in research is to test the difference between which of the following? A. Sample means from two independent groups. B. Sample mean and a parameter mean. C. Two conditions (means) in the same sample.	Answer: C This test measures a group's performance and/or characteristics on two measures (Stein, Rice, & Cutler, 2013, p. 316).
040103	Multiple Choice All	What is the BEST method for gathering information for a self-assessment used to determine competency? A. Self-ratings of performance, assets, and limitations B. Supervisor feedback during performance evaluations C. Feedback from colleagues, supervisors, clients, and self-reflection	Answer: C Explanation: Feedback from multiple sources enhances the validity of the self-assessment (Jacobs & McCormack, 2011, p. 492).
	Multiple Choice All	Which learning method would be MOST appropriate for knowledge acquisition about a specified topic? A. Role-playing and video feedback B. Self-study program with readings C. Case studies and discussions with peers D. Practice and demonstration to a colleague	Answer: B Explanation: The learning method chosen should be appropriate to the content required (Jacobs & McCormack, 2011, p. 494).
	Decision-making Pathway All	Identify one method of documenting a continuing competency plan.	Expert opinion: A reflective portfolio with evidence that supports competence and reflection of progress toward goals (Jacobs & McCormack, 2011, p. 494).

<i>Task 0402: Manage occupational therapy service provision in accordance with laws, regulations, accreditation guidelines, and facility policies and procedures governing safe and ethical practice in order to protect consumers.</i>			
040201	Multiple Choice Pediatrics	What part of the Individuals with Disabilities Education Act (IDEA) defined the role of OT in school settings for children four years of age? A. Part A B. Part B C. Part C	Answer: B Explanation: IDEA part B defines role of OT for children ages 3-21 years old. Part C describes OT as a supportive services for children ages 0 to 3 (Case-Smith & O' Brien, 2010, p. 216).
	Multiple Choice Pediatrics	In an elementary school setting, would you be most concerned with an individualized education program (IEP) or an individualized family service plan (IFSP)? A. IEP B. IFSP	Answer: A Explanation: An Individualized Education Program (IEP) is associated with IDEA part B, which covers children ages 3-21. IFSP is associated with IDEA part C, which covers children ages 0-3. (Case-Smith & O' Brien, 2010, p. 216).
040202	Multiple Choice All	You receive an order for OT services, but after a chart review, you determine OT is not indicated for the individual. What is your next step? A. Call the physician B. Assess the client C. Discard the order	Answer: B Explanation: The Joint Commission (JCAHO) requires that if an order is received, the therapist must visit with the client and perform some level of assessment before determining that therapy is not indicated (Smith-Gabai, 2011, p. 27).
040202	Decision-making Pathway All	A sibling of a client asks you about the client's status. You have not met the sibling before and have not checked the client's chart regarding privacy release. What action would you take?	Expert opinion: Inform the sibling that the information is confidential according to HIPAA Privacy Rule (Jacobs & McCormack, 2011, p. 507).

040203	Simulation All	State one worst-case scenario risk that could occur within a community based OT program.	Example: Lack of participants in the program. A worst-case scenario risk includes failure to obtain clients or catastrophic outcomes for clients (Jacobs & McCormacks, 2011, p. 154).
	Simulation All	A therapist is opening a private therapy clinic. State one inevitable risk the business will encounter.	Examples: Greater monetary loss due to purchase of equipment not originally planned for in budget. Not purchasing adequate amount equipment to meet demands of clinic. An inevitable risk is a financial risk associated with startup costs (Jacobs & McCormacks, 2011, p. 154)
040204	Multiple Choice All	Which of the following program evaluation methods would be the BEST option for assessing what participants learned from the program? A. Pre and post test B. Satisfaction survey C. Focus group	Answer: A Explanation: Pre and posttests identify change in knowledge or skills whereas satisfaction surveys and focus groups determine how participants feel about the program (Doll, 2010, p. 287).

040204 (Continued)	Simulation All	Ask a question that you would include on a satisfaction survey to evaluate the outcomes of an OT program or intervention.	Asked a question that would evaluate an aspect of the program. <i>Example:</i> How satisfied are you with the services provided to you? a. Satisfied; b. not satisfied (Jacobs & McCormack, 2011, p. 409)
040205	Decision-Making Pathway All	Describe how an occupational therapy assistant can contribute to intervention planning.	Expert Opinion: Occupational therapy assistants are responsible for understanding evaluation results and for providing input to intervention plan based on clients' needs. (AOTA, 2004).
	Simulation All	Simulate how you would use modeling to increase an occupational therapy assistant's (OTA) understanding of energy conservation techniques. The player on your left will assume the role of a OTA	Example: Player shared with occupational therapy assistant ideas on how a client could reorganize work schedule so that most taxing tasks occur when the client has the most energy. (AOTA, 2004).
	Multiple-Choice All	How can an occupational therapy assistant contribute to the modification of an intervention plan? A. Independently modifying plan throughout intervention process and document changes in the clients' needs, goals, and performance B. Exchanging information with and providing documentation to supervising OT clients	Answer: B Explanation: An occupational therapy assistant can contribute to the intervention plan by sharing information with supervising occupational therapist regarding clients' responses to and communications throughout the intervention (AOTA, 2004).

040206	Simulation All	Report the objective information you would include in a contact note after a 15-minute session that consisted of reviewing and practicing total hip precautions.	Included description of intervention implemented, client's behavior and response to treatment, and data or information obtained during the session. <i>Example:</i> A 15-minute OT session was administered in the client's room. Client accurately recalled 3/3 total hip precautions and followed hip precautions with no verbal cues when transferring to and from edge of bed to recliner. (Jacobs & McCormack, 2011, p. 373)
	Multiple Choice Physical Disabilities	You have completed the evaluation and plan of care for a client with Medicare in a long-term care facility. What is the NEXT step in your service provision? A. Provide intervention B. Offer recommendations C. Get physician signature	Answer: C The Joint Commission (JCAHO) and Medicare mandates require a physician signature on OT's plan of care for treatment in order to ensure the patient receives the most optimum care (Smith-Gabai, 2011, p. 28).

Appendix B:
Full Game Directions as Found in *An Open Book: NBCOT Exam Prep Game*

CONTENTS

- o Game board
- o 136 question cards
- o 4 pawns
- o 1 die
- o 16 Tokens

DIRECTIONS

OBJECT OF THE GAME

To correctly answer enough questions to advance to the finish square. The ultimate goal is to have fun, socialize, and give/receive support from peers while successfully preparing for the National Board for Certification in Occupational Therapy (NBCOT) certification examination.

SET-UP

Place the cards on the board so all players have access to them. Divide into teams of one to four (or more if desired) players. *Teams do not need to be equal if you have an uneven number of players.* Choose a colored game piece to represent each team. Place the game pieces on the start square of the game board. Roll the die to determine the order of play. The highest roller starts.

THE PLAY

To begin the game, the first team chooses a card from any of the four main categories (not including study break cards). Each category represents a domain on the NBCOT exam.



Domain 1: Assessment



Domain 2: Treatment Planning



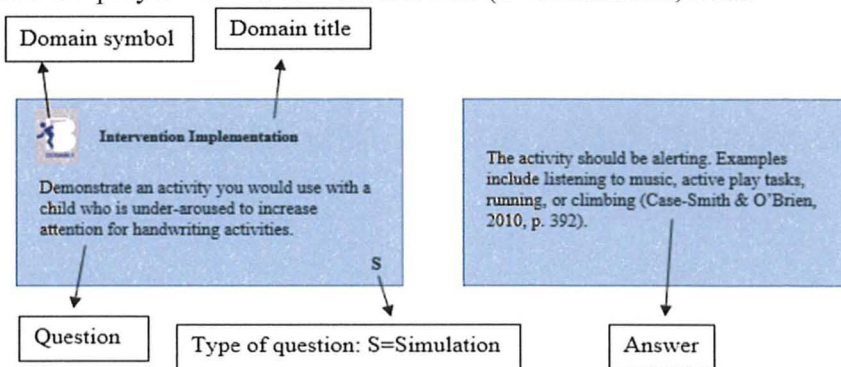
Domain 3: Intervention Implementation



Domain 4: Management & Ethics

The starting team reads and responds to the question on the card, which will be one of three types of questions: simulation, multiple choice, and decision-making pathway. On the bottom right corner on the front of the question card, a letter will identify the type of question the player drew and must answer. (S=Simulation, DMP=Decision-making pathway, MC=Multiple Choice)

The picture on the right depicts the layout of all the question cards. The front of the card shows a question and the back has the answer.



If the team correctly answers the question, a team member rolls the die and moves forward on the game board. *The die is not rolled until a team correctly answers a question.* If the team does not correctly answer the question, their turn is over and it is the next team's turn to draw a card. Once off of the start space, the color of the game square represents which category to draw a card.

Simulation

Designed for critical-thinking and application of knowledge. This type of question will require you to determine and correctly demonstrate the right answer (it is beneficial if you state the answer before simulating it).


Multiple Choice

Designed like the NBCOT exam question items to provide practice for the exam. This type of question will require you to select the best choice to answer the question.

Decision-making Pathway

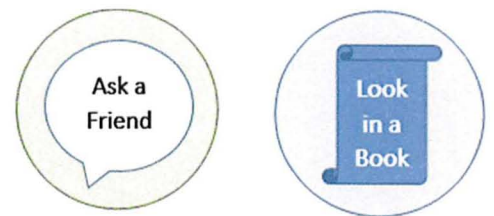
Designed for critical thinking, decision-making, and to promote group discussion. This type of question will require you to decide what you would do in a given situation. The group discusses and decides if your response is adequate enough to move forward in the game. No ‘one right’ answer is provided. Instead, an expert opinion is provided as an example. *Your answer does not have to match the expert opinion. It is up to the group if you are ‘right’ enough to move forward!*

Study Break Spaces

Designed to give your brain a break and balance your adaptation gestalt to enhance learning during preparation. When you *land on OR pass* a study break space, **stop on the study  space** and choose a card from the study break pile and complete the activity on the card. The card will include a humorous joke or statement to balance your psychosocial components or a physical activity to balance your sensorimotor components. After completing the activity, your turn is over and play moves on. On your next turn, choose a card from any category and continue play as normal.

Tokens

Each team is provided two “Ask a Friend” and “Look in a Book” Tokens. The “Ask a Friend” tokens allow you to ask another player to help you answer or complete the activity on the question card you drew. The “Look in a Book” tokens can be used to search for the answer to a difficult question in an appropriate textbook. These tokens can be used at any time during play.



HOW TO WIN

Be the first individual or team to land on the finish space.

OTHER

- If you do not enjoy playing games, you can use the domain cards as flashcards to study for the NBCOT certification examination.
- *An Open Book* was created as a supplement to traditional preparation tools.
 - Self-assessment tools, exam blueprints, study guides, and practice tests can be found at <http://www.nbcot.org/exam-prep>
 - Review and study guides and commercial preparation courses can be found at <http://www.therapyed.com/>

HOUSE RULES

The directions provided are optional! Feel free to make the game your own and create fun house rules each time you play.

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Appendix C:
Study Break Activity Cards

**Search and watch a funny video online!
Share with your peers.**

**Play a quick game of tic-tac-toe with
the person on your left**

Share a funny story with your peers.

**Stand up clasp your hands overhead
and see if you can balance on one foot.**

**With your peers choose a song you all
know and hum it together!**

**Have a thumb war with the player
across from you.**

**Play a quick game of rock, paper, and
scissors with the person on your right.**

**Do 5 jumping jacks, 4 squats, touch
your toes 3 times, roll your shoulders
back twice, and take one deep breath!**

Share an occupational therapy related joke with your peers.

Share a hidden talent with your peers.

Stand on one foot, pat your head, and rub your stomach.

See which player can flare their nostrils the fastest.

Take 10 deep breaths and move around and stretch for two minutes.

Play some music on your phone, computer, or radio and stand up and dance!

Write a poem about shoehorns.

Name as many movies as you can that start with the letter S.

Share all your knowledge about the civil war with your peers.

Play a rock song on your phone, computer, or radio and show everyone your air guitar moves.

Stand up and while turning counterclockwise spell occupational therapy backwards in less than 20 seconds.

Teach your peers how to perform your favorite dance move.

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