

Promoting soft skills with the HOT (Higher Order Thinking) sheet assignment

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ABSTRACT

An innovative assignment to capture soft-skills and create opportunities for a health profession program is presented. A full description of this semester-long assignment will be highlighted, including the associated rubric and a student example. Assessment results provide initial insight as to how the HOT Sheet supported opportunity for soft skill development.

Keywords: soft skills, creativity, assignment, learning



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INTRODUCTION

The complex medical environment demands entry-level practitioners enter the workforce with the ability to apply their knowledge and skills with sound judgment (Langins & Borgermans, 2016), while demonstrating a capacity for interpersonal skillset to manage their patients while working within productive interprofessional teams (Langins & Borgermans, 2016). In response to developing a team of professionals, healthcare organizations recognize people they recruit must not only competent professionals, but also individuals who exercise adaptability, compassion, and ability to work with others to improve patient outcomes (Earl, 2017). Such abilities referred to 'soft skills' are most recently considered separate concepts from academic achievement and become a stronger predictor of earnings and employment in the workplace (Kyllonen, 2013). With the rapid influx of growth of individuals entering the rehabilitation workforce of 24% growth for occupational therapists and 28% for physical therapists by 2026 (Bureau Labor and Statistics, 2018), health profession programs can provide the curriculum and learning experiences to encourage students' emotional capacities to support future workplace success (Sandars & Jackson, 2015).

Rehabilitation practitioners possess skills to collect information on their clients while considering multiple dimensions of what limits their client's to participate in daily tasks that influence their way of living. Therefore, not only are skilled therapy practitioners able to demonstrate the competencies of assessing the client's client factors and external forces that influence self-skill performance, but simultaneously required to interact with the client interpersonally. Practitioners make decisions using high-level critical thinking skills, but also possess the ability to deal with uncertainty or unknowns (Seah, Mackenzie, & Gamble, 2011). Additionally, professional work environments expect practitioners to self-direct and engage, and by allowing them to develop original ideas, occupational therapy managers believe entry-level practitioners maximize their potential (n=30) (Hills, Ryan, Warren-Forward & Smith, 2013). Furthermore, workplace employers expect employees to deal with ambiguous situations independently with minimal supervision (Landrum, Hettich, & Wilner, 2010).

Soft skills Through Course Design

Soft skills are difficult to measure and not easily defined. Often considered intangible skills described by Sahni (2011) as the "efficiency, abilities, and effectiveness of a person" (p. 40). While another article refer to soft skills as the ability to communicate, function within a team, work interpersonally with others (Cicekli, 2016). For the purpose of this paper, Ruder, Stanford, and Gandhi's (2018) definition of soft skills will be used. Their definition characterizes the importance of soft skills to include creative thinking, communication, metacognition, and teamwork (Ruder, Stanford, & Gandhi, 2018, p. 29).

Generally, the concepts related to soft skills have been well established in business and leadership disciplines (MacDermott & Ortiz, 2017; Ravindranath, 2016). In higher education, soft skills have been addressed in higher education using problem-based learning approaches (Gawade & Patching, 2017; Woodward, Sendall, & Ceccucci, 2010). Despite the positive impact of problem-based learning, soft skills soft skills are related to occupational therapy fieldwork experiences (Campbell, et al., 2015; Ingwersen, Lyons & Hitch, 2017; Koski, Simon, & Dooley, 2013; Naidoo & van Wyk, 2016). Campbell and Corpus (2015) surveyed fieldwork educators the essential professional behaviors of level II occupational therapy fieldwork students. The researchers found responsibility, communication, teamwork, and adaptability as significant contributors to the fieldwork experience. Despite the emphasis of occupational therapy literature

highlighting the importance of soft skills playing a pivotal skill in the clinical setting, no literature exists relates to how soft skill development can be implemented within occupational therapy related course design.

To further emphasize the importance of soft skills in the workplace, Sanhi (2011) found 72% graduate students (n=108) were unaware of the soft skills were required for a job. To determine if explicitly teaching soft skills through a 'learn by doing' approach would improve skill performance, Sanhi (2011) found all students reported positive changes within the first 15 days of the training (p. 45). Through the implementation of this interactive program of problem-solving scenarios and creating a safe place for engagement and discourse, Sanhi (2011) confirmed soft skills could be learned and influenced if purposefully addressed within a course.

Communication is a vital aspect to soft skills which includes initiative or self-direction; "the use of initiative, thought and independent judgment to schoolwork" (Miller, Kohn, & Schooler, 1985, p. 924). Singh (2005) argues self-direction may be responsible for 70 percent of success, yet are not addressed within the curriculum. Wurdinger and Qureshi (2014) conducted a study to determine if soft skills improved when given the freedom to work on projects meaningful to the students using a problem-based approach. The researchers found significant improved responsibility, problem-solving, communication, creativity, and self-direction. Furthermore, learning within an engaged environment such as learning communities have been found to increase self-perceived educational gains (Rocconi, 2010; Masika & Jones, 2016).
Developing Critical Thinking Skills for the Workplace in the Classroom

Deliberate curriculum and subsequent course design can empower students to think critically (Asha, et al., 2016). Flores, Matkin, Burbach, Quince, & Harding (2012) assert the essential need for critical thinking is to be effective in a constantly changing environment. The workplace environment in which occupational therapists practice are generally within such environments. The term "critical thinking" represents a simplistic term for a highly complex process. Authors often cite the meaning of critical thinking differently (Flores, et al., 2012) and faculty defines critical thinking, not surprisingly, in various ways (Rezaee, Farahian, Morad-Ahmadi, 2012). For this purpose of this paper, Lipman's (1988) definition of critical thinking as, "skillful, responsible thinking that facilitates good judgment because it 1) relies upon criteria 2) is self-correcting, and 3) is sensitive to context" (pg. 39).

To address Lipman's (1998) definition of critical thinking, the educator can support the development of critical thinking with purposeful course design. Utilizing Bloom's taxonomy, a hierarchical model of cognitive domain development can help structure workplace higher-order cognitive capacities within the classroom. Bloom's taxonomy arranges cognitive skills into a hierarchy ranging from lower level factual knowledge to higher order thinking abilities (Bissell & Lemons, 2006). For example, using real-life clinical cases present problems that require creative solutions and higher order thinking abilities within the highest level of Bloom's Taxonomy. Additionally, Castle (2003) indicated critical evaluation of a given case requires the student to carefully appraise evidence and ensure patient safety when predicting potential adverse responses considering concepts and theories. Encouraging students to think critically, educators should consider shifting their role to the 'guide on the side' from the 'sage on the stage' framework of teaching (King, 1993). It is through this dynamic interaction of facilitated learning that students are permitted and encouraged to construct meaning based on prior experiences; thereby, creating an in-depth understanding of content. Subsequently, the learner is empowered to transfer and apply knowledge (Erickson, 2007, p. 39).

Educational practice should be structured to provide challenges and support required for learning (Baxter Magolda, 2012). Encouraging the learner discover how he/she knows information and identify the internal learner's process to mitigate uncertainty and move beyond knowing information on a declarative/factual level (Poutiatine & Conners, 2012). Known as metacognition, this knowledge of their own cognitive process guides the problem-solving process and improves goal directed behavior (Davidson, Deuser, & Sternberg, 1994, p. 207). Additionally, educators can enable student reflection to make decisions through the learning process as they engage constructively to make decisions (King & Baxter Magolda, 2004). One such strategy is through the use of learning partnerships. Learning partnerships can also flourish under the concept of self-authorship. These cooperative learning contexts allow educators to share authority with learners and trust learners' capabilities to navigate ambiguity (Baxter Magolda, 2014, p. 31).

Therefore, course design can support 'soft skills' necessary to meet these workplace expectations by encouraging engagement in the learning process, providing a safe environment to allow introspection, and allow acceptance for personal growth. The instructor's approach to purposefully placing ambiguity within the assignment can support the development of soft skills. This strategic approach to placing ambiguity within the assignment to ensure optimization of intellect and affective components and considered a "health ingredient of the learning environment" (Visser & Visser, 2004, p. 43).

This paper addresses the presented literature gap of purposeful course design related to soft skill development association with a unique assignment. The assignment creates a learning context for students to develop interpersonal and critical thinking skills vital to future workplace success. Using an instructor context to present purposeful ambiguity to foster decision making and self-correction and develop soft skill, the authors propose the HOT (Higher Order Thinking) Sheet assignment.

THE HOT SHEET ASSIGNMENT

The HOT (Higher Order Thinking) Sheet assignment originated by the first author to serve multiple purposes: assess students' understanding for a particular diagnosis or condition through a developed visually aesthetic reference guide for their peers to be used during their clinical experiences and pragmatically control the instructor's time to avoid grading lengthy papers. There are two key components to this assignment: the written one page, two sided paper and presentation portion. Utilizing a student-selected condition or diagnosis, each student develops an original document which later develops into an interactive presentation to their peers. The written paper and presentation phases are separate, yet both share purposeful ambiguous teacher directives. Throughout the process of the HOT Sheet assignment, students make continuous decisions as to what information is relevant and how this information will be provided to peers in written and active form. This soft skill requires time to thoughtfully process and make continual decisions that are illustrate creative intent.

Assignment Description

Prior to developing the HOT Sheet, each student self-selects the condition or diagnosis to initiate the student-directed learning process. A template-style guide for is used HOT Sheet (Appendix A-Assignment Description) to provide a general standard of presentation of material

for ease of reference and simplifies the overwhelming amount of content that should be included. An additional expectation of creativity with this assignment is expected as part of the overall product. The student is required to design a document with a strong overall visual appeal constituting creativity and originality.

In addition to the creativity requirement, a plethora of information is explored during the development of the document. It is the duty of the student to tease out information and include only that which is vital knowledge regarding the topic and produce an original, creative design in how the content is presented. Therefore, while students indicated appreciation for the organization of the template, they quickly realize the overwhelming amount of content cannot fit within the confines of two pages and need to thoughtfully produce a visually appealing document. All of which, conceptually the production of this assignment encourage student introspection and thoughtful decision making. Due to this level of ambiguity of 'what is considered creative and visually appealing,' the instructors purposefully respond to such students' presented questions to support introspection and self-evaluation.

Page one of the HOT Sheet, known as "Quick Facts," serves as a quick-reference guide to peers during clinical affiliations and includes the following sections: diagnosis and brief description, etiology, prevalence, related population(s), related disorders and/or risk factors (as applicable), medical management, condition related precautions, and finally, complications and the related impact on actual functional performance (American Occupational Therapy Association [AOTA], 2014).

The second page of the HOT Sheet includes two distinct sections, "Evidence-based Interventions" and "References." Through exploration of the chosen diagnosis, students determine two evidence-based interventions most relevant to the condition. Historically, students begin their quest through occupational therapy literature, however, while some may discover evidence within the discipline, many students must "take the leap" and determine where outside OT literature knowledge is disseminated that provides the student with evidence to support an OT intervention appropriate for the chosen condition. Students seek knowledge from a variety of scientific and behavioral sources to provide rationale for intervention choices, and/or may utilize such knowledge to determine the best interventions to include on the document. The student synthesizes the evidence supported literature that would be of perceived benefit to the practitioner in the field. With this synthesis of information, the student provides specific examples of how the intervention choice may impact a person's Performance Skills required for engagement in occupation. An example of a completed HOT Sheet is indicated in Figure A, with the student example (Appendix B).

The use of APA in-text citations is required throughout the HOT Sheet, and references should appear in alphabetical order in APA format. In addition, all photos and graphics should be appropriately cited. While the prompt provided on the assignment sheet requires students to utilize a minimum of two peer-reviewed journals as sources, students are merely advised by the instructor as to sources considered reputable, both in print and online.

As mentioned previously, the assignment is purposefully presented by the instructors to encourage individual creativity and promote decision making. As indicated in Table 1 (Appendix C), the instructor responds to student questions in ambiguous ways. This purposeful approach supports providing just enough discomfort while allowing them to find their individual creative approach "through the fog" (Strohm & Baukus, 1995, p. 56). Furthermore, the students come to expect the level of ambiguity to think reflexively; thereby, creating a more unique view to the actual outcome rather than 'what the instructor wants'.

Presentation

Communication within the workplace is essential. A systematic review revealed the highly necessary skill was communication for beginning practitioners (Adam, Peters, & Chipchase, 2013). A comprehensive, creative, memorable presentation expectation is repeated throughout the presentation period. The presentation phase of the assignment (see for assignment description) charges each student to create an engaging seven-minute lesson to teach others content of the HOT Sheet he/she created, capitalizing on professional communication abilities. To create greater learning and student engagement, the students design and develop an engaging activity. This activity is encouraged to elicit an original, fun, engaging experience to the degree the participants would deem unforgettable. In addition, the use of level of aesthetically pleasing visual media is required and determined by the student.

Set up as a rotation format mimics professional conference poster presentations, with the addition of highly interactive components. During the presentation of content, a hard copy HOT sheet is distributed to their peers. Small groups of students rotate through the presentations, collecting the work of their peers while engaging at each station. As a result of sharing work with peers, students exit the course with HOT Sheets to be used as a future reference during fieldwork and/or clinical practice. Pragmatically, the students are required to consider time, student numbers, space, equipment, and materials are accounted for by student presenters to create an optimized teaching and learning experience for peers. Therefore, similar to a clinical workplace setting, students must consider the learning environment for which they are responsible to present their work and interactive presentation, a skill uniquely understood by occupational therapists.

Suggestions for Implementation

Considering the uniqueness of the HOT Sheet assignment the students would like to share tips for implementation. In essence, lessons learned from over ten years of repeated administration, the manner and context in how this assignment is just as important as the assignment itself.

Student development of the HOT Sheet and presentation requires self-discipline and proactive planning. Each student is required to make continuous decisions as to what information is relevant and how this information will be provided to peers in written and active form. Higher order thinking requires time to thoughtfully process and make decisions that are illustrative of creative intent throughout a completed HOT Sheet. Students who do not heed the advice to proactively plan and wait to create a HOT Sheet until just days before the due date are easily identified. For this reason, it is crucial to assign the entire HOT Sheet with associated presentation assignment at the start of the semester, with sign-up for the diagnosis/condition no later than the second week of class, particularly if the HOT Sheet portion of the assignment is due at midterm. Completing these tasks at the starts of the semester allows ample time for students to become well versed in the requirements for the assignment and the topic.

During the semester if time permits, prior to the due date of the HOT Sheet, one class/lab, or a portion of a class/lab, may be devoted to a workshop to check-in on development of the HOT Sheet. Students are instructed to come prepared with a product initiated in order for the instructor to answer questions or guide the student. To address questions that arise during the development process of the HOT Sheet or presentation, prepare for typical student

questions/responses to the ambiguous directives used for this assignment. Over the years of implementation, similar questions/comments from students emerged, and overwhelmingly, the instructors were able to respond to questions or comments by in return, asking the student what he/she feels is the most vital information to disclose to peers. After all, it is the student becoming the expert on the topic, so an instructor is unable to make that determination for the student. Similarly, questions emerged about the presentations which were typically addressed by requesting students refer to the rubric which was disclosed the first week of the course, along with the assignment. Consistency in instructor response from student to student is key.

To ensure students' HOT Sheet content was accurate and clinically applicable, the instructor vetted each document. Therefore, time to review each HOT sheet was dependent on the students' end product. For example, a HOT Sheet that was thrown together over a short period of time resulted in a poor end-product, requiring the instructor to provide more feedback and additional suggestions. Remember, the HOT sheet provides students in the course a "go-to" reference during fieldwork, and potentially clinical practice and suggested edits must be made by students to the final edition handed out to peers on the presentation day despite the grade from the initial submission standing. This prevents students from turning in a mediocre or failing assignment and expecting the instructor to do a surplus of editing work on their behalf. Again, it is recommended the grade earned based on the initial instructor review stands.

A key feature of this assignment is flexibility and adaptability to meet course needs based on content, number of students, space allowances, and curriculum sequence. For example, a larger number of students (50 – 100 students) in a course may result in students collaborating in partners or small groups to complete the HOT Sheet and presentation. While the HOT sheet and associated presentation originated in occupational therapy coursework, the assignment was successfully adapted for a leadership course assignment on personal branding. The desired student-author experience, the process and the outcome, of the HOT sheet and presentation assignment are achievable when modified to fit any topic supported by literature.

ASSESSMENT

The expectation exists for academics to justify and provide methods of assessment while maintaining active engagement within a learning-centered environment. Facione's definition of critical thinking, "to be purposeful, self-regulatory judgment which results in interpretation, analysis, evaluation, and inference as well as explanation of the evidential, conceptual, methodological or contextual consideration upon which that judgment is based" (as cited by Flores et al., 2012, pg. 215), further supports assessment of the HOT sheet and its associated presentation.

A survey of 78 alumni on 54 areas of workplace readiness (Landrum, Hettich, & Wilner 2010, p. 102) revealed skills or qualities most important for success in the workplace included demonstration of self-motivated learning, exhibited by students producing work quality beyond expectation with less focus on the grade as the outcome of increased effort but rather, emphasis on the actual product (HOT Sheet) and presentation of said product to peers. Landrum, Hettich, & Wilner (2010) found additional qualities of a workplace ready individual included motivation of oneself to function at optimal levels of performance, in this case, framed by instructors via a level of expectation revealed in the associated grading rubrics. The rubrics associated with this assignment are seen within Table 2 (Appendix D) and designed to extract desired student abilities known to facilitate high levels of critical thinking: decision making, creativity

encouraged through self-directed actions; and soft skills: interpersonal skills and engagement “Creativity means working through a process to determine the best possible solution to a problem” (Jones, 2014, p. 26). In particular, the notion of creativity is central to the presentation rubric as students are given total control over creativity and ability to teach peers.

In addition, the work of Landrum, Hettich, & Wilner (2010) indicated the ability to work without supervision was ranked in the top ten desired workplace readiness qualities. Growth in this area is facilitated through both the student process to develop the HOT sheet as well as the presentation portion where as a group activity, students educate each other, lending to the instructor role as a “guide on the side” versus “sage on stage” as indicated earlier. Students are considered the experts on their respective conditions or diagnoses and subsequently engage in a shared community of knowledge.

DISCUSSION

The HOT Sheet assignment creates a meaningful context for learning on various levels, with the primary purpose being student self-authorship. Through the process of fostering creativity and risk-taking, the student can be given the freedom to translate his/her knowledge and assert individual personality with this highly engaging assignment. Furthermore, the purposeful creation of trust and guided opportunity between the student and the instructor enhances the learning experience.

The manner of how the HOT Sheet was designed and implemented is known as high engagement teaching, a strategy that encourages students to think about the process. Through this interaction, students can build strong peer relationships while developing within discipline concepts and vocabulary (Huskin, 2016). As they individually develop content, students are required to backwards map, plan and prepare to meet the presented deadline. Again, this inherent part of the assignment requires the student to use time wisely with the repeated advice to never underestimate the time and effort required to present the original document and produce a presentation. Backward mapping requires time management (Huskin, 2016) and self-discipline to not only complete with intention and effort, but also recognize the implication of how their document will help peers’ success within fieldwork settings.

Opportunity for deeper learning through peer teaching is further evidentiary within the literature (Huskin, 2016; Nadia, 2014). For example, students are permitted to select their topics, allowing for natural curiosity and connection to their developed content to emerge (Nadia, 2014). The HOT Sheet provides the “just-right-challenge” by providing the structure for students to actively connect course content and new knowledge. Through this supported framework, expectations are consistent from student to student, however the presentation of each HOT Sheet and produced document are highly original and personally meaningful. This level of collaboration amongst students is a valued method to learning (Huskin, 2016; Witkowski & Cornell, 2015).

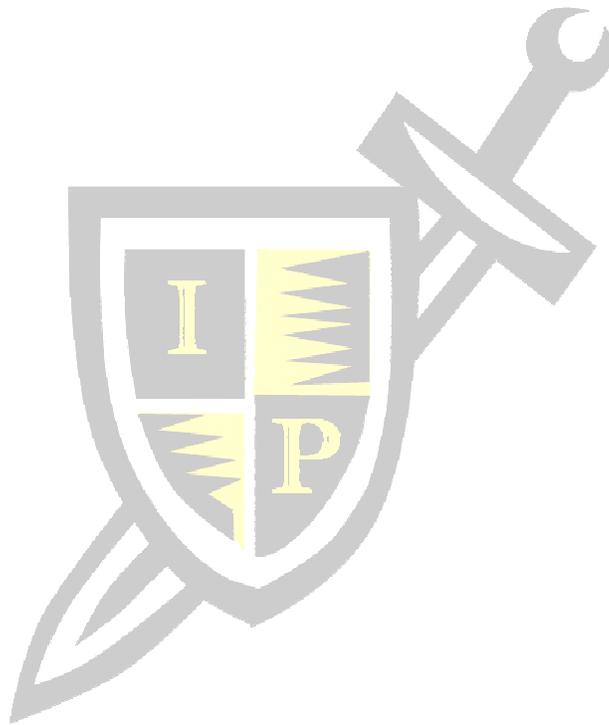
CONCLUSION

The HOT Sheet is a unique assignment that promotes student learning and engagement, with the added benefit of being an ongoing resource beyond the classroom. Anecdotally, students have indicated usefulness of their peer’s HOT Sheets within their clinical fieldwork placements for intervention ideas and preparing for their board examinations. Occupational therapy

educators have the exclusive task of designing courses to meet the profession's standards. The HOT Sheet assignment provides the structure to fulfill such standards while encouraging student self-authorship and supporting critical thinking expected within the workplace environment.

Declaration of Interest

Both authors have no conflicts of interest with the contents of this presented manuscript. The HOT Sheet assignment was developed by the authors without any interest to any proprietary entity. Jenna Ruholl is a former student, who has provided permission to use her document as part of this publication.



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APPENDIX

Appendix A: Assignment Description

HOT Sheet Assignment Expectations**HOT Sheet Description: 50 Points**

You will choose a specific diagnosis of personal interest to research and produce a quick reference guide, or **HOT Sheet**. This HOT Sheet assignment will allow you to share evidence-based interventions with your peers and serve as a useful quick reference tool during Level II Fieldwork experiences. The HOT Sheet must follow the template (provided below) and include the title of each section in capital letters for consistency and ease of review. Limit: (1) two-sided sheet (including references). This assignment will be submitted via anti-plagiarism software to the University's online learning platform using either **Adobe (pdf) OR Word doc format** only. It is recommended you double check your submission to be sure your document was uploaded as intended.

***Learning Objectives:**

1. Analyze, synthesize, and apply models of occupational performance and theories of occupation to individuals with neuromusculoskeletal dysfunction, movement related dysfunction, and bodily systems dysfunction (ACOTE standard B.2.11).
2. Apply theoretical constructs, models of practice, and frames of reference in designing occupational therapy interventions for individuals with neuromusculoskeletal dysfunction, movement related dysfunction, and bodily systems dysfunction (ACOTE standard B.3.3).
3. Demonstrate an understanding of approaches and techniques to develop, remediate, and compensate for neuromusculoskeletal dysfunction, movement related dysfunction, and bodily systems dysfunction (ACOTE standard B.5.5).

*Note: The above ACOTE standards were assigned to the related course. The HOT Sheet can be modified to meet other ACOTE standards.

HOT Sheet Template

QUICK FACTS (Page One): Bullet format acceptable

Diagnosis & brief description

Etiology

Prevalence

Related population(s)

Related disorders and/or risk factors (as applicable)

Medical management of diagnosis

Condition related precautions

Complications and related impact on **Performance Skills** (OTPF, 3rd edition)

EVIDENCE BASED INTERVENTIONS (Page Two): Be sure to fully explain.

Briefly describe 2 occupational therapy interventions (include any contraindications/precautions-as necessary)

Link to theory, model, or frame of reference

Reference each intervention using APA

Provide specific examples of how intervention would impact **Performance Skill** necessary for occupation.

Justify your interventions with the presented research

APA REFERENCES:

At least 2 references must come from journal-based research advocating or supporting the specific intervention.

Include references related to Quick Facts as appropriate

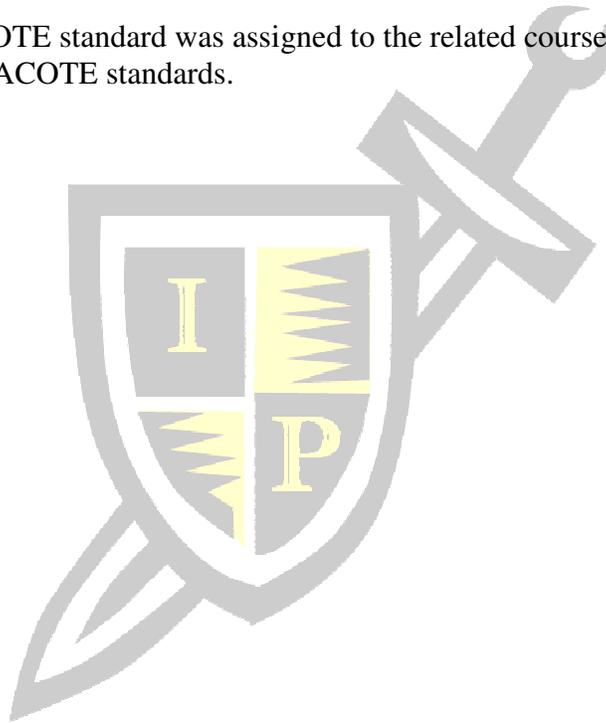
Presentation Description: 40 Points

Utilizing the HOT Sheet as a guide, you will develop a brief (10 minutes) interactive learning station (similar to rotation stations). Each station must include an **interactive** teaching/learning component to **optimize peer engagement** using media of your choice. In other words, the choice of visual media: poster, game, etc. is your choice; however, the media choice must be representative of creative thought and effort and professional in appearance. If any props or OT Program equipment are required to be used, it is your responsibility to secure check-out with the instructor a minimum of 1 week prior to the presentation date.

****Objective:**

1. Discuss strategies to educate the client, caregiver, family, and significant others to facilitate skills in areas of occupation (ACOTE standard B.5.16).

****Note:** The above ACOTE standard was assigned to the related course. The HOT Sheet can be modified to meet other ACOTE standards.



Appendix B

Figure A: Student Example
Page One

Emphysema

By: Jenna Ruhoff

DIAGNOSIS & BRIEF DESCRIPTION

- Respiratory limitation due to damaged lung aveoli
- Results in shortness of breath, wheezing, & difficulty coughing & talking
- Smoking is the primary cause (Mayo Clinic Staff, 2014; Slezak, 2014)
- Diagnosis is confirmed by:
 - Imaging tests: chest x-rays & CT scans
 - Arterial blood gas tests
 - Lung functioning tests: spirometer (Mayo Clinic Staff, 2014)

Retrieved from: <http://www.britannica.com/Echecked/topic/166092/emphysema>

MEDICAL MANAGEMENT OF DIAGNOSIS

- Irreversible
- Relieve symptoms & slow progression with:
 - Medications: bronchodilators (anticholinergics & beta-agonists); inhaled steroids; antibiotics; vaccinations (pneumonia vaccine & influenza vaccine) (American Lung Association, 2014)
 - Therapy: pulmonary rehabilitation; nutrition therapy; oxygen therapy
 - Surgery: lung volume reduction surgery; lung transplant
 - Adapted lifestyle: stop smoking; avoid respiratory irritants; avoid excessive heat & cold; exercise regularly (Mayo Clinic Staff, 2014; Slezak, 2014)

ETIOLOGY

- See diagram above (American Lung Association, 2010)
- Inherited AAT alpha- antitrypsin protein deficiency
 - Protein that protects the lung's elastic structures (Slezak, 2014)

CONDITION RELATED PRECAUTIONS

- Be aware of the following conditions individuals may experience if symptoms worsen:
 - Pneumothorax- collapsed lung
 - Cor pulmonale- weakened heart
 - Lung bullae- large holes in lung (Mayo Clinic Staff, 2014)
- Anxiety and panic attacks due to airway discomfort causing breathlessness symptoms to worsen
- Suicidal thoughts due to depression resulting from decreased occupational engagement
- Be aware of possible muscle weakness due to reduced physical activity
- Choking risk during eating due to limited airflow
- Take breaks as needed during strenuous activities that may cause fatigue, dizziness, or lightheadedness (Huntley, 2014)
- Avoid exercising in excessive heat or cold to prevent symptoms from worsening (Mayo Clinic Staff, 2014; Slezak, 2014)

PREVALENCE

- 4.7 million Americans diagnosed (Centers for Disease Control and Prevention [CDC], 2014)
- 92% diagnosed are 45 years or older
- 80% diagnosed are smokers
- 2-3% diagnosed have inherited AAT (alpha-antitrypsin) deficiency
- More common in men than women (American Lung Association, 2014)

COMPLICATIONS & IMPACT ON PERFORMANCE SKILLS

- Due to breathlessness, individuals may experience difficulties with the following performance skills:
 - Motor: Persisting in strenuous occupations; Maintaining energy during ADLs; Lifting heavy objects; Walking long distances; Climbing stairs; Bending & reaching for objects; Sleeping throughout the night
 - Process: Pacing self during daily routine to conserve energy; Prioritizing occupations to eliminate unnecessary tasks; Organizing environment to avoid excessive physical activity; Utilizing relaxation strategies to cope with anxiety
 - Social Interaction: Speaking fluently during conversation; Participating in social outings due to anxiety/depression (Mayo Clinic Staff, 2014; American Occupational Therapy Association [AOTA], 2014)

RISK FACTORS

- Long-term exposure to airborne irritants
 - Tobacco smoke
 - Marijuana smoke
 - Secondhand smoke
 - Indoor & outdoor air pollution
 - Manufacturing fumes
- Inherited AAT (alpha-antitrypsin) protein deficiency (Mayo Clinic Staff, 2014)

RELATED DISORDERS

- Chronic bronchitis
 - Inflammation of bronchial tubes/ airways
- Chronic obstructive pulmonary disease (COPD)
 - Combination of emphysema & chronic bronchitis (Slezak, 2014)

Intervention: Due to the fear of experiencing breathlessness, individuals with emphysema may experience anxiety during occupations; therefore, to prevent this uncomfortable feeling, he/she may decrease his/her occupational engagement. A decrease in occupations may cause depression among many other issues, including social isolation, physical deconditioning, and decreased independence. To address these issues, occupational therapists may use a cognitive behavioral therapy (CBT) approach. Based on research, a suggested format of a CBT intervention, specifically for clients with emphysema, includes a weekly, two hour, interactive group session (with approximately six individuals) for four weeks. Throughout the intervention, participants will modify negative thoughts and maladaptive behaviors through the use of self affirmation statements and emphysema education. Individuals may be educated on coping strategies, such as, planning, pacing, problem-solving, goal-setting, energy conservation, relaxation techniques, etc. Participants should be encouraged to practice these modifications and strategies throughout their daily routine, as well as, record any anxiety related thoughts and reactions (Howard, Dupont, Haselden, Lynch, & Wills, 2010).

Performance Skills: CBT interventions may assist individuals with *modifying* anxious thoughts to increase occupational engagement, *participating* in social activities, *conserving* energy throughout occupations, and *independently solving* problems that arise due to breathlessness (AOTA, 2014).

Precautions/Contraindications: Because participants of the program are experiencing anxiety, they may experience increased breathlessness, which may lead to pain, fatigue, dizziness, or lightheadedness especially with any increased physical activity.

Research: To eliminate variance between each individual's results, the CBT intervention described above was tested through a level II research study: a within-subjects, repeated measures experimental design. The 48 participants of the study were diagnosed with COPD, which presents symptoms very similar to emphysema. After receiving the CBT intervention, participants' results showed decreases from pretest to posttest in anxiety and significant decreases in depression. The level of this research, as well as, the significant results portray this article as a strong supporter of CBT intervention to reduce anxiety and depression in individuals with emphysema (Howard et al., 2010).

Pulmonary Rehabilitation

Intervention: The primary symptoms of emphysema are shortness of breath and fatigue. These symptoms negatively affect individuals' quality of life, including their attitude, concentration, and everyday occupations. According to research, an effective intervention for managing emphysema symptoms include components of pulmonary rehabilitation (Deng et al., 2013; Jacome & Marques, 2014). Each pulmonary rehabilitation program is structured differently. Deng et al. (2013) completed a study examining the effectiveness of a pulmonary rehabilitation program on dyspnea and fatigue. The intervention, which consisted of different stages, lasted 12 weeks and included three 30 minute sessions each week. The first stage, psychological intervention, focused on creating a therapeutic relationship with the client, as well as, a psychological evaluation. The second stage, cognitive intervention, provided clients with general emphysema education. During the third stage, behavioral intervention, clients were educated on nutritional importance and self management strategies for anxiety and energy conservation. Throughout the fourth stage, physical-function intervention, individuals participated in respiratory and extremity exercise training, as well as, practicing different breathing strategies. After completion of the intervention, individuals were given an individualized home exercise program (Deng et al., 2013).

Performance Skills: Pulmonary rehabilitation intervention programs may assist individuals with *tolerating* more strenuous activities, such as, *walking* longer distances and *reaching* for objects. The program may also assist individuals with *independently utilizing* self management strategies to cope with breathlessness and fatigue (AOTA, 2014).

Precautions/Contraindications: Because participants of the program may be experiencing anxiety and increased physical activity, they may experience increased breathlessness, which may lead to pain, fatigue, or lightheadedness.

Research: To eliminate bias and extraneous variables, the pulmonary rehabilitation program intervention described above was tested through a level I research study: a randomized, controlled two-group pretest and posttest design. After completion of the intervention, when compared with the control group, individuals in the intervention group had significantly lower scores on fatigue and dyspnea. The level of this research, as well as, the significant results indicate this article as a strong supporter of pulmonary rehabilitation intervention to reduce fatigue and dyspnea, the primary symptoms of emphysema (Deng et al., 2013).

Cognitive Behavioral Therapy (CBT)

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Appendix C: Instructor Clarifications

Table 1: Instructor Clarification of HOT Sheet Components

Section	Title	Description
QUICK FACTS (appear on page 1)	Diagnosis and Brief Description	Concise, general overview of the condition
	Etiology	Condition Cause or Origin
	Prevalence	Proportion of a population who have (or had) a specific characteristic in a given time period
	Related Population(s)	May include populations defined by age, race, gender, geographical location, etc.
	Related Disorders and/or Risk Factors (as applicable)	Other associated conditions or diagnoses associated and/or attribute that increases risk for developing
	Medical Management	Typical medical methods of treatment and/or management of the condition.
	Condition Related Precautions	Measure taken in advance to prevent harm Example: fall precautions, surgical precautions
	Complications and Related Impact on Performance Skills	Specific impact on motor skills, process skills, and social interaction skills as guided by the AOTA's OTPF, 3 rd Edition
EVIDENCE-BASED INTERVENTIONS (appear on page 2)	Title of each OT intervention (total of 2) as named by student (Introduce to reader the intervention through a concise, descriptive title)	For each of 2 OT interventions, include narrative link to theory, model, or frame of reference, examples of impact of intervention on Performance Skills, and justification of intervention choice. Include in-text APA citations as appropriate
REFERENCES (appear on page 2)	Same as section title	All references must appear in APA format, including in-text citations throughout document
Questions	Student Questions	Instructor Responses
	How do you define creativity?	Unique, original...not seen before
	What do you mean by visual appeal (from rubric)?	Unique visual appeal is original, creative...with purposeful inclusion of visually appealing content.
	This is so much content, how will I make it fit two pages?	I know you can determine what is most important for your peers to know.
	Should I include _____?	You need to determine what is most beneficial for your peers to know and understand (on fieldwork).

The table above presents a quick-reference guide for instructors to better understand each component of the HOT Sheet assignment and serve as a tool for increased accuracy in grading against associated the HOT Sheet rubric. Please note the above information is not provided to students to whom the HOT Sheet is assigned but is intended for instructor use only

Appendix D: Rubrics

Table 2: HOT Sheet and Presentation Rubrics

HOT Sheet Grading Rubric

HOT Sheet 50 Points	10-9 Exemplary	8-7 Competent	6-4 Inconsistent	3-0 Improvement Needed
Quick Facts	All required components demonstrate accurate facts throughout document with clarity and thoroughness and/or required 1-2 instructor clarification(s).	Minor difficulties noted with 1-2 components and/or required 3-4 instructor clarifications.	Missing 1 required component and/or required 5-7 instructor clarifications.	Missing 2 required components and/or information considered inaccurate.
Evidence Based Interventions	Interventions based on evidence with clear and concise descriptors of all required components. Interventions presented beyond expectation in terms of choice (research quality), timeliness, attention to detail, and clinical utility.	Interventions based on evidence with adequate descriptors of all required components. Greater clarification required and/or application to occupation not clear OR evidence provided met the expectation of the assignment.	One intervention lacked evidence and/or precautions not identified for the intervention(s)-as appropriate OR evidence provided not timely/reflected use of textbook sources only.	Both interventions lacked evidence for efficacy.
Creative and Visual Appeal	Creative, professional, and appropriate organization of content throughout. Demonstrated obvious original and purposeful design: layout and use of visuals.	Design is unique, but lacks aesthetic appeal in terms of use of selected visuals and/or missed opportunity to use visuals not capitalized.	Design is rudimentary in terms of design and presentation. Use of prepackaged template design and/or no visuals used within the document.	Significant difficulties related to overall creative and visual appeal. Document does not use color and/or visuals within any portion of the document.
Overall Presentation	Overall document demonstrates efforts in regards to multiple editing efforts: Zero format, spelling, and/or grammatical errors	Met the required components of the assignment; however, lacked creativity and/or visual appeal. 1-3 errors of any type	Overall, sheet would require major revisions due to overall lack of design and/or professional presentation. 4-6 errors of any type	>6 errors of any type
APA References	Proper APA referencing: both in-text and reference page with 0-2 APA reference errors.	3-4 APA referencing errors	5-6 APA referencing errors	>6 APA referencing errors

Presentation Grading Rubric

Presentation 40 Points	10-9 Exemplary	8-7 Competent	6-4 Inconsistent	3-0 Improvement Needed
Presentation	For the entire session, presenter showed ability to engage all peers interpersonally with genuine excitement and enthusiasm.	Entire session, presenter showed average engagement and/or difficulty engaging with peers, either non-verbally or verbally.	Decreased ability to share given content as evidenced by inconsistent ability to answer questions or clearly uncomfortable presenting the given content/activity.	Lack of professional presentation during any portion of the presentation period (i.e. dress, behavior, etc.) or overall lack of preparedness.
Media	Creative and obvious thoughtful effort throughout. Effective use of media which added to overall presentation.	Adequate use of media and acceptable addition to the presentation.	Ineffective media presented or not adequately presented as an adjunct to the presentation.	Media component unclear and/or not presented.
Engagement	All participants actively engaged with creative activity & associated content easily remembered 24 hours later.	Activity demonstrated appropriate content association; however purpose and/or interactive piece not clear.	Activity and/or given content not easily remembered and/or effort lacked overall professional presentation	Activity showed limited link to actual presentation content.
Overall	Obvious creativity effort and originality throughout presentation.	Met the requirements of the assignment; however, overall presentation lacked originality & creativity.	Unclear connection of presentation purpose requiring key content instructor clarification during the presentation.	Failed to meet the purpose of the actual presentation or required instructor request to stop presentation.

