Incorporating Online Learning into the Occupational Therapy Curriculum

Naomi Schreuer, Naomi Josman, Eynat Gal, Liat Chen, Tsameret Ricon & Patrice L. (Tamar) Weiss

Key words: problem-based learning; technology; curriculum development

Abstract

This article introduces the process of incorporating online learning into the Occupational Therapy curriculum at the University of Haifa. It presents a case study of several courses developed using an online format and examines the concomitant development of online skills on the part of both lecturers and students.

Naomi Schreuer, PhD, OT, Instructor, Department of Occupational Therapy, Faculty of Social Welfare & Health Studies, University of Haifa, Mount Carmel, Haifa, 31905, Israel; schreuer@research.haifa.ac.il

Naomi Josman, PhD, OT, Senior Lecturer and Chair, Department of Occupational Therapy, Faculty of Social Welfare & Health Studies, University of Haifa.

Eynat Gal, MSc, OT, Instructor, Department of Occupational Therapy, Faculty of Social Welfare & Health Studies, University of Haifa.

Liat Chen, M.A, OT, Instructor, Department of Occupational Therapy, Faculty of Social Welfare & Health Studies, University of Haifa.

Tsameret Ricon, Ph.D., OT, Instructor, Department of Occupational Therapy, Faculty of Social Welfare & Health Studies, University of Haifa.

Patrice L. (Tamar) Weiss, PhD, OT, Associate Professor, Department of Occupational Therapy, Faculty of Social Welfare & Health Studies, University of Haifa.

Introduction

Educating occupational therapists (OTs) at the undergraduate level is a highly complex endeavor, which has, over the years, been subject to considerable discussion and debate (McKenna, Scholte, Fleming, & Gilbert, 2001; Tryssenaar, Perkins, & Brett, 1996). Among the major reasons that this task presents so formidable a challenge is the need to grant a dual academic and professional degree to successful program graduates. This mandates that educators determine their major program orientation on a continuum ranging from one that is primarily conceptual and theoretical to one that is more practical and professional. The fundamental curriculum of an OT program includes imparting basic knowledge in the medical sciences, social sciences and occupational science, as well as fundamentals in OT intervention, incorporating both fieldwork experience and the art of clinical practice (Hocking & Ness, 2004, 1987).

In recent years, institutions of higher education face the challenge of providing more learning opportunities with fewer financial resources (Beller & Or, 2001). A number of institutions have responded to this challenge by developing new learning opportunities via Internet-based resources, generally referred to as online learning. Online learning may be carried out from a distance, in which case it is usually referred to as distance learning.

Since the students registered in most OT programs attend courses on campus, it is of greater relevance for OT curricula to use a term that is broader than distance learning, i.e., online learning. Online learning includes a continuum of Internet-based options which do not necessarily entail teaching from a distance. As described by Beller & Or's (2003) pyramid showing the different levels of Internet integration into academic teaching, the range of online learning options may vary greatly both in

format and in the extent to which teaching resources make use of electronic rather than conventional media. For example, some courses may merely provide a "home" page with course syllabus, bibliography and links to relevant Internet resources. Others may upload all course materials, including lecture presentations via an interactive courseware program such as WebCT (www.webct.com). Still others encourage interaction between lecturers and students and between groups of students by running chat rooms for synchronous communication and discussion forums for asynchronous communication.

The purpose of this article is to present a case study of several courses developed using an online format in an OT program, and to describe a framework for adopting and applying online courses within an OT curriculum, including facilitators in order to ensure the students' occupational performance.

Online Learning in an academic curriculum

Online courses, as a structured content platform, include text and multimedia support, which are usually arranged as a website on the World Wide Web (WWW), often with the aid of courseware programs. Students access the materials at their own pace and often at a location of their own choice (e.g., at home) in what is known as asynchronous learning. Online learning is often supported by face-to-face meetings, either as formal lectures or laboratories or as less formal meetings or seminars. An online learning course usually entails the use of a variety of media, each type suited to a specific purpose. For example, print media may be best for providing the syllabus and day-to-day schedule. Interactive audio or video-conferencing is an excellent and relatively inexpensive method for including guest speakers. Chat and electronic mail, alternatively, are ideally suited for sending messages, providing assignment feedback and other targeted communication to one or more class members. This instructional

format has been both driven and motivated by the push-pull of enabling technologies and market demand (Bonk, 2001). Thus, online learning has and continues to be "pushed" by the increased availability of computer classrooms, broadband communication access and Internet savvy and "pulled" by lecturer and student interest and convenience (Cerami, 1998).

The availability of an online course implies, essentially, that it can be used in any environment where people need improved access to information, have a need to share resources, or where learners, teachers, administrators and subject matter specialists would find it difficult or impossible to meet at the same time and/or location. Such instruction is often referred to as “learner-driven learning” with the instructor adopting the role of a moderator, facilitating access to materials and supporting the student via face-to-face and electronic interactions (e.g., electronic mail, discussion forums) (Beller & Or, 2003; Shea, Pickett, & Sau Li, 2005).

The adoption of online learning into an academic curriculum raises an important question of outcome efficacy. Do students who attend an online course (either entirely from a distance or with face-to-face support) acquire an equivalent or even increased body of knowledge and skill, as compared to participants in more traditionally formatted courses? The rapidly growing body of literature indicates that online learning can be as effective as, and sometimes more effective than, face-to-face instruction, provided that (1) teaching methods and technologies used are suited to the instructional tasks; (2) opportunities for interaction between students and between students and instructors are provided (e.g., via a chat program or discussion forum); (3) feedback from the instructor to the student is prompt and thorough and; (4) technical support is provided (Duffon et al., 2001; Fredericksen Pickett, Shea, Petlz, & Swan 1999; Shea, Pickett, & Sau Li, 2005).

A successful distance-learning program requires a coordinated effort on the part of instructors, students and technical support staff. In a traditional classroom setting, the instructor's responsibility is limited to developing an understanding of student needs and assembling the course content. Teaching that relies heavily on online technologies, however, confronts course designers with special, and usually novel, challenges. The instructor of an online course must perceive the difficulties faced by the student with whom he or she has less physical contact. Moreover, the instructor needs to appreciate and be familiar with the various technologies that are used in order to implement the course, even if full technical support is available.

A further challenge when using online technologies is the level of technical proficiency required of all students. As in any application of technology, the availability of reliable and highly competent technical experts is indispensable to the program. While online learning holds numerous potential advantages and beneficial outcomes (Bannan-Ritland, 2002), there are a number of shortcomings that need to be considered. For example, some instructors and students prefer a more traditional, interactive style of teaching and learning and others are unskilled in technology and therefore struggle with designing their courses via this method. Regardless of the skill level and familiarity with Internet-based technologies, ultimately, preparing an online course is highly labor-intensive.

The potential of online learning for the OT curriculum

Over the years, occupational therapy educators have deliberated as to the optimal methodology for teaching the core curriculum, with the goal of providing OT students with both a sound theoretical foundation and strong practical skills (Neistadt, 1999; Nolinske & Milis, 1999). For example, students need to become familiar with the major frames of reference used in different practice areas while learning how to

interview and listen to clients objectively, how to evaluate their performance, and how to provide appropriate intervention for an individual as well as for groups.

Problem-Based Learning (PBL) has emerged as a learning paradigm to meet the needs of the OT curriculum, and to prepare future OTs for a client-centered and community-based practice environment (Watson & West, 1996). PBL suits current trends in health care systems which value quality, efficiency and updated knowledge (Royeen, & Salvatori, 1997; Stern, & D'amico, 2000). These values are achieved by encouraging students to engage in reflective critical thinking, clinical reasoning, problem-solving, interpersonal communication and information sharing. All of these skills are implemented in PBL by the modeling of lifelong, self-monitored learning (Hammel et al., l999; Stern & D'amico, 2000; Watson & West, 1996).

The PBL strategy for learning is administered mainly via a self-monitored linking of current and previous knowledge, as well as via small instructional discussion groups. It is used recently in many conventional courses in OT., Novel instructional technologies offer new opportunities for Problem Based Learning via interactive learning in which information is collected from a wide range of sources, promoting exposure to a wide range of multimedia sources, analysis of in-depth case studies, online, interactive problem-solving, and knowledge-sharing via participation in synchronous (at a pre-determined time) and asynchronous online discussions (each individual goes online at his or her convenience) (Kamin, Deterding, Wilson, Armacost & Breedon, 2003; Koory, 2003). Although the benefits of online learning for OT curricula in general and the PBL approach in particular are great, the ability of both instructors and students to cope with new instructional technologies must be considered.

The Department of Occupational Therapy at the University of Haifa first introduced online learning within its regular undergraduate curriculum in 1999, with the course Ergonomics for the Health Professions (Weiss, Schreuer, Jermias-Cohen, & Josman, 2004). Following this initial successful trial, a number of additional courses were designed and delivered using online technologies. Several considerations directed the process of introducing online learning. First, what type of online studies should be included in an undergraduate OT program? At what stage in the curriculum should the online format be considered? What specific types of online courses should be designed and planned to facilitate and achieve good performance among students? Answers to these questions were in some cases straightforward. For example, it was clear that skill-based intervention courses, which are based on direct instructor-student modeling, are less suited to the online format. Such courses need to be taught in a classroom setting, where instructors may share and impart intervention and practical experiences with students. The suitability of other types of courses was less immediately evident, and contemplation of the considerations indicated above proved to be helpful in deciding when and where to include online learning technologies within the curriculum.

Online instructional tools

All academic institutions that support online learning provide instructors with courseware tools that facilitate the presentation of teaching materials and support interactive activities. The most common tools are the primarily asynchronous platforms such as HighLearn (http://www.britannica-ks.com) or WebCT (www.webct.com). These platforms provide intuitive tools for uploading all course materials, including the syllabus, lecture presentations, case studies, readings and

video-clips. They also include interactive tools such as a chat room, discussion forums and survey polls.

Interwise ECP Connect (www.interwise.com) is a primarily synchronous online platform that supports a variety of teaching formats including voice conferencing, web meetings, virtual classes, web seminars, and webcasts that may be delivered to the user's home or work location. This platform allows for the creation of virtual classes or meetings in which real-time, two-way interaction takes places between the participants (including one or more lecturers and students).

Guidelines for adopting online learning in the OT curriculum

We developed an approach to guide the process for determining which courses may be appropriate to online learning methods, and to identify strategies for implementing suitable facilitators. *Facilitators* are the instructional features used to help students overcome any barriers to learning and are needed whenever there is lack of a balance between the human, occupation and environment components, which may impede students' performance and lead to their dissatisfaction.

The first step in determining whether a given course is suited to online instruction is to examine its goals and objectives, and to determine whether these will be enhanced if the course material is delivered via this alternate teaching format. If didactic reasoning supports the decision to develop an online course, the next step is to select facilitators in order to clarify the content and arouse enthusiasm among students and instructors who might be techno phobic due to lack of familiarity with it. Examples for facilitators can be tutorial support of the online technologies, supplementing online instruction with face-to-face teaching, and the use of various multimedia aids (for instance, providing a CD with video clips.

Our Table of the Five W's (see Table 1) is a systematic template for delineating the important factors in online courses which can help in the identification of the facilitators needed to ensure success:

Why teach this course in an online format?

Who are the designated lecturers and students and what kind of interaction is expected between them during the course?

What content and activities will be included in the course?

Where will the course be delivered and which technologies will be used?

When will the course take place?

-- Insert Table 1 about here --

A case study of several courses in our curriculum that have adopted some degree of online learning as a teaching method will be presented in order to illustrate the use of the Five W's template. The process wherein online teaching has been gradually planned and integrated into the OT curriculum will be highlighted as well.

Case study: examples of online courses

Figure 1 shows the OT courses in which online learning technologies were first employed. In the first year of the curriculum a basic computer skills course is taught so that students unfamiliar with computers may benefit from online courses as other students may. In addition, two courses offered later in the curriculum, Approaches to Intervention in Occupational Therapy and Ergonomics for the Health Care Professions, were designed as primarily online courses.

— Insert Figure 1 here —

Approaches to Intervention in Occupational Therapy was designed for second year undergraduate students during the first semester, in accordance with a problem-

based learning approach. There are two parts to the course: the first is presented in an online format in which specific OT intervention approaches are presented and the second consists of a series of seminars. In these seminars each student is required to present a lecture wherein s/he proposes an intervention for a student-selected case study, based on materials learned during the online part of the course. Following the student presentation there is a face-to-face group discussion about how the approach may be used with populations other than the specific one presented. In addition, fellow students and the instructor offer feedback about the presentation. Hence, the online course constitutes the resource component of problem-based learning, while the seminar component helps the students to integrate and discuss proposed solutions.

The online component of this course includes a syllabus, PowerPoint presentations describing each approach, video-clips showing different types of clients and links to relevant home pages and to specific literature from databases accumulated in the library specifically for each topic. Students may enter the computer lab at a given time (synchronous) and view the online materials, with the instructor available for answering questions. Students may also choose to view the materials from home at any time (asynchronous) and pose questions via email. There is a short assignment to be completed and sent via e-mail at the conclusion of each class.

In addition to this general Introduction to Intervention course, online support was added for three more specific intervention courses: OT Intervention for Developmental Disabilities; OT Intervention for Physical Disabilities; and OT Intervention for Psychosocial Disabilities. These courses are delivered during the second semester of the second year of the undergraduate curriculum. The teaching material is presented in traditional face-to-face format by a lecturer, yet the syllabus and all PowerPoint presentations are uploaded to the course website at the beginning

of the semester. This method enables students to review course material before class and they are thereby more prepared to discuss issues and to ask questions during the lectures.

Ergonomics for the Health Care Professions is offered during the second semester of the third year of studies. The course objectives are to provide theoretical information from relevant disciplines (anatomy, physiology, neuromuscular pathology, engineering, sociology and psychology) as they relate to ergonomic principles and methods, and to apply these principles and methods to individuals throughout the lifespan (e.g., children at school, adults at work, and the elderly in homes for the aged). A full description of this course has been presented elsewhere (Weiss et al., 2004). The application of the Five W's to the online Ergonomics for the Health Care Professions course illustrates the use of appropriate facilitators and highlights the gradual use of technological teaching methods.

Why? (Rationale)

Online learning is particularly relevant when teaching about ergonomics. New developments such as computer-based evaluation software and interactive tasks (for example, simulations of the effect of ergonomic adaptations) can be readily incorporated into this format. In addition, ergonomics is multi-disciplinary, calling upon diverse areas of expertise, which can be easily obtained in online learning (e.g., guest lectures delivered over the web).

Who?

Fifty female students, towards the end of the undergraduate OT program, participated in the required ergonomics course. They had prior experience using computers in various applications in previous courses. Their motivation was quite

high, due to the innovative aspect of taking one of the first online courses offered at the university.

What? (Content and activities)

The course was divided into six units, each devoted to a major topic in ergonomics. An introductory unit consisted of an overview of Cumulative Trauma Disorder (CTD) and an interactive case study showing the evaluation and treatment of a professional classical guitarist with CTD symptoms. Students were polled about their own usage of computers in this unit; results of the class survey were compared to a group of American students surveyed by Peper & Gibney (2001). Our students related to the similarity in symptoms (pain and discomfort at their neck, shoulders, back and eyes) and in computer usage (intense) between themselves and their American counterparts.

The second and third units presented material related to biomechanical, environmental and psychosocial risk factors. Theoretical background material from the literature was accompanied by illustrative graphics and links to relevant websites. A collection of streamed video clips of about 20 different workers (e.g., hair stylist, bus driver, metal worker, and cook) was used to provide examples of the various risk factors. Once again, an interactive case study was employed to reinforce the concepts. In the fourth unit, an overview of evaluation tools was provided, while the fifth unit focused on information related to ergonomic prevention and intervention. The sixth unit included a summary of the course, as well as a special lecture presented by Prof. Karen Jacobs by video-conference between Boston University and the University of Haifa

Where? (Physical and technological environments)

Tutorial and lecture time was scheduled for a 90-minute period each week in one of the university's computer classrooms. During this time, the course lecturers provided an overview of the current unit and presented a portion of the material in a seminar format. The remaining class time was devoted to self-paced learning by the student, using the asynchronous HighLearn platform. The students were required to use this system to complete weekly assignments. Instructors or tutorial assistants were available during the entire session to respond to any queries posed by the students. The videoconference session was conducted in a specially designed lecture room.

When?

The online ergonomics course was offered during the second semester of the third year of undergraduate studies. It was a required course that had been newly incorporated into the curriculum. The course was taught for 12 weeks, with six face-to-face meetings; the bulk of the material was learned independently.

Facilitators

Occupational Performance models can be helpful in identifying and planning the facilitators needed to integrate the components of the course in order to achieve its goals (Law, M., Cooper, B.A., Strong, S., & Stewart, D., 1997; Strong, S., Rigby, P., Stewart, D., Law, M., Letts, L., & Cooper, B., 1999). Various facilitators were used to improve the fit between the students, the activities, the learning materials and the environment. In the case of the ergonomics course, the facilitators focused on tools to increase and support students' skills and expertise. For example, course-related tasks were adjusted to the students' pace; questions of an individual student that were posed during an online discussion forum, would, if they had a more general relevance, be used to lead to an open, critical discussion, including the sharing of materials and links. One way that the environment was adapted was by commencing the course with

a face-to-face lecture, continuing on subsequent weeks with smaller group, computer laboratory sessions and eventually running completely remote online classes.

Since the ergonomics course is offered to undergraduate students with some experience with computers, but with large variability among the students regarding the availability of technology, more facilitators were required. There was a need for: a gradual increase in the demands in the course assignments; a variety of multimedia materials and activities to fit different student strengths and learning styles; the combined use of synchronous, asynchronous, and face-to-face meetings; and classes with skilled technical support staff and accessible computers to support students. In other words, a gradual increase in the tasks demanded from students improved their participation and performance. This required a detailed analysis of the online learning activities and the environmental demands including a transition from highly structured to relatively non-structured tasks, a gradual shift from interaction with the lecturer to a group sharing of information and review, and a shift from viewing simple text files to processing complex interactive applications and multimedia.

Discussion

How can OT students be trained to cope with the challenges of the 21st century? Will the use of online technologies in teaching promote this goal? How can we train students to be good clinicians who demonstrate clinical reasoning and interpersonal abilities, and at the same time to become scholars who constantly update knowledge throughout their careers, employing evidence-based practice? These questions claim the constant attention of academicians who have been entrusted to establish curricula and train OT students.

The fine balance between academic teaching and teaching an applied profession must be maintained in OT education, as in other health care related

disciplines. This entails modeling and supervision, as well as practical experiences, all using a creative problem-solving process. Many of these components may be taught exclusively face-to-face, some in workshops and others during closely supervised clinical fieldwork placements. However, we have observed, and the literature supports, the use of novel teaching methods as a means of preparing students for the modern era, with the aim of attaining and then maintaining mastery of an ever-expanding quantity of information (NDCC, 2004; Bannan-Ritland, 2002).

Three current teaching tools which are significant to studies in any professional curriculum are computer literacy for searching for and processing information, active and shared learning (Conway, & Sharkey, 2002) and approaches to problem-focused study aimed at integrating case studies (Hammel, et al., 1999; Stern, & D'amico, 2000). Computer literacy is defined as the ability to use computer-based technologies and to benefit from electronic information, including the basic technological skills necessary for efficient participation in the work force and higher education (Fichten et al. 2003; Zeszotarski, 2000). Information technology includes software and hardware, services and support which rely on an infrastructure to manage and relay information (NDCC, 2004). Active sharing and learning take advantage of technology via Internet forums in which students develop skills that they will use in their future roles as OTs to share sources and to discuss the relevance of online materials to clinical practice within the context of their work place (Conway & Sharkey, 2002).

Learning which is focused on problem-solving takes advantage of technology in presenting problems via the collecting and organizing of existing knowledge, searching for new knowledge, analyzing problems in teams and presenting possible solutions (Stanton, 2001; Stern & D'amico, 2000; Weiss et al., 2004).

Occupational therapy educators strive to instill in their students a drive to keep abreast of new developments and thereby help them make the transition from the learning of isolated technology skills to a more global approach of integrating "information skills" within a professional context. The use of online learning technologies appears to simultaneously support knowledge-centered, learner-centered and lecturer-centered approaches. Opportunities for active updated learning and high levels of participation are important course design features to encourage learning and are core features found in online courses (Beller & Or, 2001; Fredericksen, et al., 2002; Bannan-Ritland, 2002).

Occupational therapists, like other professionals, are required to use up-to-date technologies in their education, in patients' care, in administration and in research in order to aid the removal of environmental obstacles and to attain a better fit between the individual, the environment and occupation, leading to optimal participation in community roles (Green, 1996; Hedberg-Kristensson & Iwarsson, 2003; Moyers, 1999). OTs employ assistive technology into daily routines when indicated, in order to improve function and quality of life. Today technology is used in many OT intervention processes, from assessment and evaluation to treatment, including virtual reality, and to documentation, research and management (Foto, 1996; Green, 1996; Velozo, Kielhofner & Lai, 1999). Providing OT students with a deep familiarity of and confidence in the use of technology in all areas of OT equips them with tools that enable them to cope with future challenges. It requires gradually training students to be open to and aware of technology's potential, while recognizing its limitations and learning how to harness its strengths.

An awareness of student characteristics is helpful when considering online learning. A correlation was found between a positive attitude towards the course,

women, mature students and their success, satisfaction and confidence (Duffon et al., 2001; Gunn & McSporran, 2002; Nachmias, 2002). On the other hand, general undergraduates tend to receive lower grades in online courses than they do in conventional courses (Duffon et al., 2001; Fredericksen et al., 1999; Valenta, Therriault, Dieter & Mrtek, 2001). Students who reported that technical difficulties impeded their learning reported significantly less learning overall than other students.

One goal of an OT curriculum should be to have all students – those who lack prior computer knowledge and experience, those with no access to computers nor support at home and those with different learning styles – attain a sense of control and confidence when using technology such that there will be no barriers to online learning (Fredericksen et al., 1999). This goal could be achieved by gradually increasing levels of online learning, according to several factors: the complexity of educational demands (Beller & Or, 2003), technological complexity (Bonk et al., 1999; Beller & Or, 2003), a trade-off between classroom meetings and online studies (Beller & Or, 2003; Richardson, & Swan, 2003) and the rate of independent learning and problem-solving (Bonk et al., 1999; Eisenberg & Johnson, 2002). Various models of gradual assimilation and diffusion processes have been suggested to investigate the outcomes of online learning (Nachmias, 2002).

This evidence of gradual assimilation of technology in teaching is in keeping with the gradual progress of material taught within the OT curriculum. In many conventional face-to-face courses there is often a progression from reading literature that was distributed and reviewed to seeking literature and processing it in a theoretical seminar, and from the ability to understand research articles and critiques of assessment tools to planning and giving a research seminar.

In clinical setting one sees the gradual sequencing examined in varying dimensions such as from collecting information about a client and setting goals to application of intervention and controlling for its quality. The gradual assimilation of technology in current teaching methods is quite new, and can be facilitated through an analysis derived from OT theory and practice.

In conclusion, this article has suggested using the Five W's template to offer a new way for educators to teach students of occupational therapy. This article strove to analyze significant variables in assimilating the use of current technology in learning. This analysis may be helpful in planning and implementing facilitators which act as a bridge, enabling efficient, successful and satisfying learning for the student.

References

Bannan-Ritland, B. (2002). Computer-mediated communication, e-learning, and interactivity: a review of the research. *The Quarterly Review of Distance Education*, 3(2), 161-179.

Beller, M., & Or, E. (2003). Learning technologies at the service of higher education: Global trends and local Israeli opportunities, *Work,* 20(1), 23-33.

Bonk, C., Cummings, J.A., Hara, N., Fischler, R.B., & Lee, S.M.(1999). A ten-level web integration continuum for higher education: New resources, partners, courses, and markets. Retrieved September 21,2003,from http:// php.indiana.edu/*cjbonk/paper/edmdia99.html.

Bonk, C. (2001). Online teaching in an online world. Retrieved on January 12, 2006 from: http://www.publicationshare.com/docs/corp_survey.pdf

Cerami, E., (1998). *Delivering Push*. New York: McGraw Hill.

Conway, J., & Sharkey, R. (2002). Integrating on campus problem based learning and practice based learning: Issues and challenges using computer mediated communication. *Nurse Education Today,* 22(7), 552-562.

Duffon, J., Duffon, M., & perry, J. (2001). How do online students differ from lecture students? Retrieved on July 3, 2003 from: http://www.aln.org/publications

Fichten, C. S., Barile, M., & Asuncion, J. (2003). Computer technologies and postsecondary student with disabilities: Implication of recent research for rehabilitation psychologists. *Rehabilitation Psychology*, 48(3), 207-214.

Foto, M. (1996). Nationally speaking. Presidential address – trends, tools, and technology. *The American Journal of Occupational Therapy*, 50(8), 619-625.

Fredericksen, E., Pickett, A., Shea, P., Petlz, W., & Swan, K., (1999). Student satisfaction and perceived learning with on-line courses: principles and examples from the SUNY Learning Network. Retrieved from: http://www.online.uillinois.edu/aln-workshops/papers/suny-2-aln.doc, January 13, 2006.

Green, S. (1996). Occupational therapy and information technology: One decade on. *British Journal of Occupational Therapy*, 59(7), 301-306.

Gunn, C., & McSporran, M.N. (2003). Dominant or different? Gender issues in computer supported learning. Journal of Asynchronous network, 7 (1). Retrieved from: http://www.aln.org/publications, 18.1.2006.

Hammel, J., Royeen, C.B., Bagatell, N., Chandler, B., Jensen, G., Loveland, J., & Stone, G. (1999). Student perspectives on problem-based learning in an occupational therapy curriculum: A multiyear qualitative evaluation. *The American Journal of Occupational Therapy*, 53(2), 199-206.

Hedberg-Kristensson E., and Iwarsson S., (2003). Documentation quality in occupational therapy patient records: focusing on the technical aid prescription *process. Scandinavian Journal of Occupational Therapy*, 10(2); 72-80.

Hocking C., and Ness, N.E., (2004). WFOT minimum standards for the education of occupational therapists: shaping the profession. WFOT Bulletin, 50; 9-17.

Kamin, C.D., Deterding, R.D.,Wilson, B., Armacost, M., & Breedon, T., (2003). The development of collaborative distance learning program to facilitate pediatric problem-based learning. Retrieved on 18.1.2006, from: www.med-ed-online.org/t0000008.htm.

Koory, M.A., (2003). Differences in learning outcomes for the online F2F versions of an introduction to Shakespeare. *Journal of Asynchronous Learning Networks, 7*, 18-35.

Law, M., Cooper, B.A., Strong, S., & Stewart, D. (1997). Theoretical contexts for the practice of occupational therapy.(ch.4) In: C. Christinsen & C.M. Baum (Eds.). *Occupational Therapy: Enabling function and well-being* (2nd Ed.) Slack.

McKenna, K., Scholte, A. A., Fleming, J., & Gilbert, J. (2001). The journey through an undergraduate occupational therapy course: Does it change students' attitudes, perceptions and career plans? *Australian Occupational Therapy Journal*, 48(4), 157-169.

Mendez, A., (1987). Editorial for the bulletin. *WOFT Bulletin, 15*, 2-4.

Moyers, P.A. (1999). The guide to occupational therapy practice. *American Journal of Occupational Therapy, 53(3)*, 247-322.

Nachmias, R. (2002). A research framework for the study of a campus-wide web-based academic instruction project. *The Internet & Higher Education*, 5: 213-229.

North Dakota Century Code – NDCC, Chapter 54-59 Information Technology department., Definitions. Retrieved on 08 May, 2004, from http://www.state.nd.us/lr/cencode/t54c59.pdf

Neistadt, M.E. (1999). Educational interpretation of "cooperative learning as an approach to pedagogy". *American Journal of Occupational therapy,* 53(1), 41-43.

Nolinske, T., & Milis, B. (1999). Cooperative learning as an approach to pedagogy. *American Journal of Occupational Therapy,* 53(1), 31-40.

Oren, A., Mioduser, D. and Nachmias, R. (2002). The development of social climate in virtual discussion groups. International Review of Research in Open and Distance Learning, Retrieved on January 12, 2006, from: http://www.irrodl.org/content/v3.1/mioduser.html

Peper, E., & Gibney, K.H. (2001). Computer related symptoms: A major problem for college students, Retrieved on January 12, 2006, from: www.tifaq.org/articles/computer_related_symptoms-peper_gibney.html

Royeen, C.B., and Savatori, P., (1997). Comparison of problem-based learning curricula in two occupational therapy programs. *Canadian Journal of Occupational therapy,* 64(3), 197-202.

Shea, P., Pickett, A., and Sau Li, C., (2005). Increasing access to higher education: A study of the diffusion of online teaching among 913 college faculty. *International review of research in open distance learning*. Retrieved on January 12, 2006, from: http://www.irrodl.org/content/v6.2/shea.html

Stanton, S. (2001). Going the distance: Developing shared web-based learning programs. *Occupational Therapy International*. 8(2), 96-107.

Stern, P., & D'amico, F.J. (2000). Problem effectiveness in an occupational therapy problem-based learning course. *The American Journal of Occupational Therapy*, *55*(4), 455-461.

Strong, S., Rigby, P., Stewart, D., Law, M., Letts, L., & Cooper, B. (1999)

Application of the person-environment- occupation model: A practical tool. *Canadian Journal of Occupational Therapy, 66 (3),* 122-133.

Tryssenaar, J., Perkins, J., & Brett, L. (1996). Undergraduate interdisciplinary education: are we educating for future practice? *Canadian Journal of Occupational Therapy, 63*(4), 245-251.

Valenta, A., Therriault, D., Dieter, M., & Mrtek, R. (2001). Identifying student attitudes and learning styles in distance education. *Journal of Asynchronous Learning Networks 5* (2), p. 111-127. Retrieved on January 12, 2006, from: http://www.sloan-c.org/publications/jaln/index.asp

Velozo, C.A., Kielhofner, G., & Lai, J. (1999). The use of Rasch analysis to produce scale-free measurement of functional ability. *The American Journal of Occupational Therapy,* 53(1), 83-90.

Watson, D.E., & West, D.J. (1996). Using problem-based learning to improve educational outcomes. *Occupational Therapy International*, 3(2), 81-93

Weiss, P. L., Schreuer, N., Jermias- Cohen, T., & Josman, N. (2004). An online learning in Ergonomics, *Work*, 23, 95-104.

Zeszotarski, P. (January, 2000). Computer literacy for community college students. Retrieved Nov. 2, 2004, from ERIC Clearinghouse for Community Colleges Web site: http://www.ericfacility.net/ericdigests/ed438010.html

Figure 1: Incorporating online teaching into OT curriculum

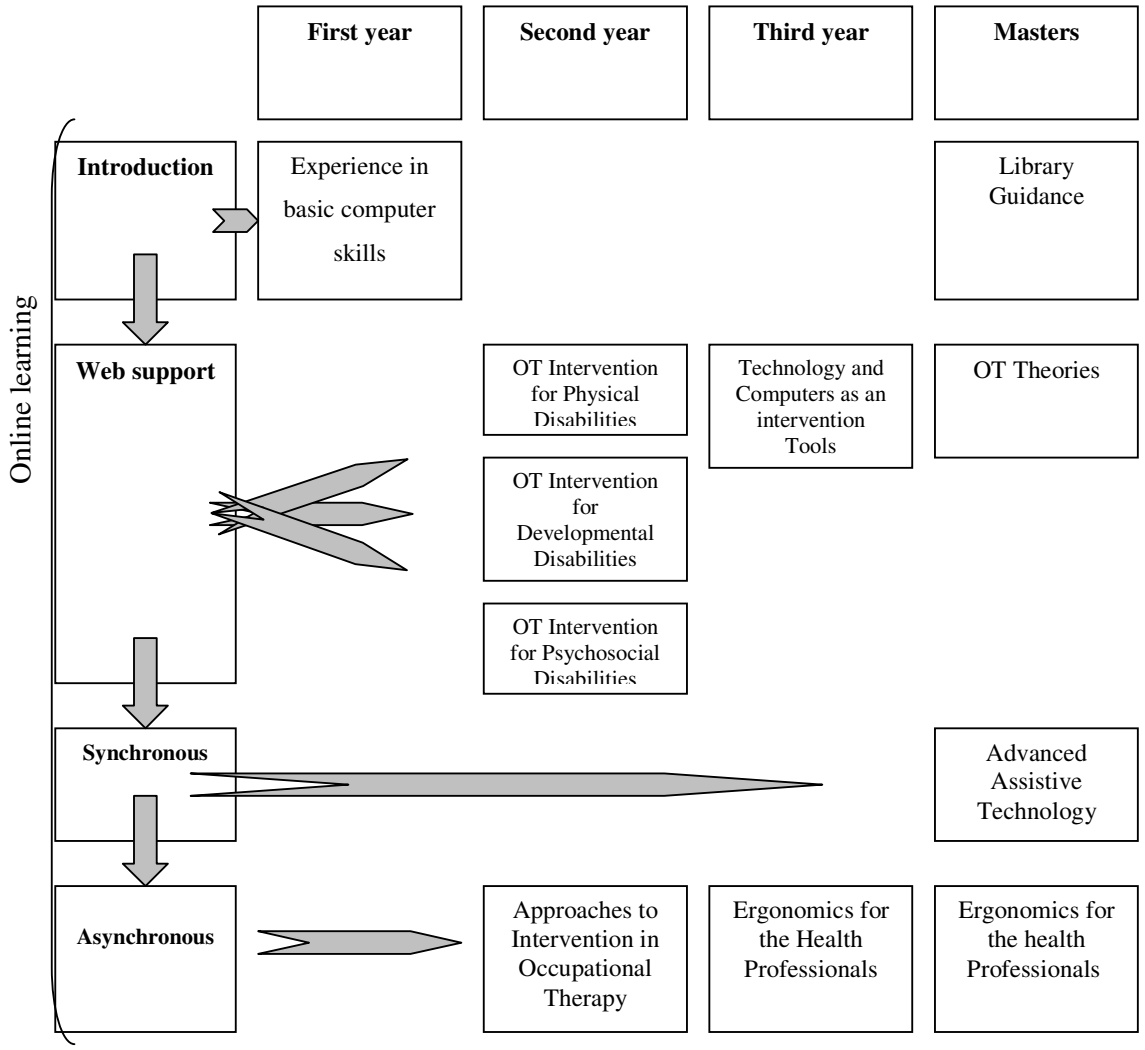

Table 1: The Five "Ws":

A systematic instrument to analyze the online courses

Why? **W**hether at all?	**W**ho?	**W**hat?	**W**here? **W**hich technology?	**W**hen?
* Is online learning appropriate for the goals of the course? *Will it contribute an added value to the course? * Is there a choice of leaning method?	* Age * Gender * B.A. or M.A. * Experience with computer * Learning styles/ Teaching styles * Attitudes & expectations * Motivation * What kind of interactions are expected?	* Content * Activities * Sharing knowledge * Updated needs * Searching the web	* In a class room * In computers lab * Anywhere within a distance * Available technologies * Computer interface	* On the study Sequence (which year? Experience?) * Synchronous * Asynchronous * Time of the day

שילוב של למידה מתוקשבת (הוראה מרחוק) בתוכנית הלימודים בריפוי בעיסוק

מילות מפתח: למידה המבוססת על בעיות; טכנולוגיה; פיתוח תכניות לימודים

תקציר

מאמר זה מציג את התהליך של שילוב למידה מתוקשבת בתוכנית הלימודים בריפוי בעיסוק בפקולטה ללימודי רווחה ובריאות באוניברסיטת חיפה. במאמר מוצגת סקירה של קורסים שונים ששולבה בהם תוכנית מתוקשבת ונבחנת ההתפתחות המקבילה של מיומנויות מתקושבות בקרב מרצים וסטודנטים. במתכונת זאת.

נעמי שרויאר, נעמי יוסמן, עינת גל, ליאת חן, צמרת ריקון ותמר וייס, מרצות בחוג לריפוי בעיסוק, הפקולטה ללימודי רווחה ובריאות, אוניברסיטת חיפה. schreuer@research.haifa.ac.il