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Interprofessional Education: Theoretical and Practical Considerations for Occupational Therapy Educators

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Abstract

Interprofessional education (IPE) is an integral part of occupational therapy education as programs across the United States incorporate IPE into existing courses and develop new, innovative curricula. The American Occupational Therapy Association (AOTA) Commission on Education (COE) proposed in its 2015 position paper on IPE in occupational therapy curricula, that IPE is imperative for effective and ethical practice in today's healthcare environment. Through participation in a Scholarship of Teaching and Learning program focusing on IPE, the authors examined broad constructs and practical implementation of IPE in occupational therapy education. As occupational therapy educators explore opportunities to collaborate with a diverse range of professions, this article provides information about key conceptual frameworks, approaches for faculty training and development, and methods for evaluating IPE outcomes.

Keywords

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Interprofessional Education: Theoretical and Practical Considerations for Occupational Therapy Educators

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ABSTRACT
Interprofessional education (IPE) is an integral part of occupational therapy education as programs across the United States incorporate IPE into existing courses and develop new, innovative curricula. The American Occupational Therapy Association (AOTA) Commission on Education (COE) proposed in its 2015 position paper on IPE in occupational therapy curricula, that IPE is imperative for effective and ethical practice in today's healthcare environment. Through participation in a Scholarship of Teaching and Learning program focusing on IPE, the authors examined broad constructs and practical implementation of IPE in occupational therapy education. As occupational therapy educators explore opportunities to collaborate with a diverse range of professions, this article provides information about key conceptual frameworks, approaches for faculty training and development, and methods for evaluating IPE outcomes.

INTRODUCTION
Interprofessional education (IPE) is evolving in occupational therapy education programs across the United States, particularly since interprofessional language and objectives were included in accreditation standards implemented in 2013 (Accreditation Council for Occupational Therapy Education [ACOTE], 2012). Implementation of IPE, however, is as varied as the occupational therapy curricula in which it appears. Examples of single IPE activities include interprofessional collaboration on an accessibility project (Chabot, 2017), and using interprofessional student actors as

standardized patients (Keptner, 2017). In contrast, institutions such as the University of Oklahoma implement IPE activities through an integrated occupational therapy and physical therapy curriculum (Ferretti, 2015).

The American Occupational Therapy Association (AOTA) Commission on Education's (COE) position paper on IPE in occupational therapy curricula supports occupational therapy educators' efforts to incorporate IPE and recognizes the ethical implications if students are not prepared to practice collaboratively (AOTA, 2015). As IPE evolves in occupational therapy education, it is imperative that we not only incorporate opportunities to learn to collaborate but also to evaluate the long term efficacy of these various efforts on healthcare outcomes. A broad understanding of IPE conceptual frameworks and learning outcomes is beneficial to the development of effective IPE curricula. Furthermore, occupational therapy educators must explore opportunities to collaborate with a diverse range of professions and within our own profession.

The authors of this article formed an inquiry community in 2013 through their participation in a Scholarship of Teaching and Learning (SoTL) workshop sponsored by AOTA. Interest in SoTL originated in the mid 1980's-1990's to encourage teachers to systematically evaluate the effectiveness of their teaching methods and students' learning in the classroom (Bishop-Clarke & Dietz-Uhler, 2012; Boyer, 1990). While SoTL has not always been viewed as a rigorous form of research, standards do exist for scholarly research related to teaching and learning (Bishop-Clarke & Dietz-Uhler, 2012; Glassick et al., 1997).

The AOTA SoTL program grew from a 2007 initiative of the American Occupational Therapy Foundation (AOTF) as part of the Institute for the Study of Occupation and Health. The program was designed to provide participants with the tools and support needed to design, implement, and disseminate quality SoTL research. The ultimate goal of the SoTL program was to encourage best practice in occupational therapy education through mentorship and collaboration of faculty. Therefore, a first step in the authors' SoTL collaboration was to critically examine the state of IPE and reflect on opportunities to strengthen the IPE initiative within occupational therapy education.

The purpose of this manuscript is to describe conceptual frameworks used to guide development of IPE experiences, and to examine methods for evaluating IPE curricular innovations and diverse learner outcomes. This is a critical objective given the recent call to measure the impact of IPE on student learning outcomes, as well as its influence on collaborative practice and improved client-care (Institute of Medicine [IOM], 2015).

Currently, IPE is most often introduced at the classroom level due to the ease of implementation (AOTA, 2015). This manuscript provides an overview of existing conceptual frameworks and models to encourage a more intentional and broad application of IPE in occupational therapy curricula. The authors also offer resources for assessment, and advocate for selecting assessments that are consistent with IPE

experiences and desired outcomes. The overview of existing frameworks for IPE that follows (see Table 1) will allow occupational therapy educators to reflect on how their proposed or implemented IPE program or activities align with the IOM (2015) recommendations.

Table 1

Frameworks for IPE Curricula Development

Resource	Year	Framework
Canadian Interprofessional Health Collaborative (CIHC)	2009, 2010, 2012	Canadian Framework for IPE
Interprofessional Education Collaborative (IPEC)	2011, 2016	Core competencies for IPE
Interprofessional Socialization Framework (IPSF) by Khalili et al.	2013	Recommendations for the progression of socialization in IPE
Institute of Medicine (IOM)	2015	Guide for Development, Implementation, and Evaluation of IPE Curricula

CONCEPTUAL FRAMEWORKS FOR IPE: DEVELOPING CURRICULA AND EVALUATING OUTCOMES
Although theories and frameworks for IPE exist, they are infrequently used to guide the development and implementation of IPE curricula, and even less frequently applied to the evaluation of IPE outcomes. In order to address the need for systematic measurement of IPE outcomes, the IOM published a report, *Measuring the Impact of Interprofessional Education on Collaborative Practice and Patient Outcomes*. This included a proposal for a plan to measure collaborative practice and health care outcomes of IPE (IOM, 2015). The IOM committee established four objectives for guiding measurement of IPE outcomes: 1) align education and health care delivery systems; 2) develop conceptual frameworks for IPE, collaborative practice, and outcome measurement; 3) build a strong evidence base for IPE; and 4) establish clearer associations between IPE and collaborative practice (IOM, 2015). Given increased initiatives to develop IPE experiences, coordinated planning between education and health care delivery systems is needed to evaluate the impact of IPE on health care

outcomes (Cox & Naylor, 2013). The use of conceptual frameworks for IPE may help achieve better alignment between education and practice. Occupational therapy educators have an opportunity to help validate existing frameworks and explore their usefulness for measuring diverse IPE outcomes, given that occupational therapists collaborate with diverse professions across both health and social services settings.

While conceptual frameworks have been applied to studies of student perceptions and learning related to specific IPE experiences, there is a need to examine links between IPE experiences and downstream outcomes like client safety and satisfaction, quality of care, cost, and other population health indicators. One question considered in the IOM (2015) report is whether it is possible to identify and measure the impact of any one health profession's education on systems or population-level outcomes. Therefore, a comprehensive framework of IPE, describing interprofessional teaching and learning across foundational, graduate, and workplace education is needed to guide future research. Collaborations across a continuum of stakeholders, including researchers, policy makers, educators, and health care providers are also needed in order to evaluate the impact of IPE on health care outcomes.

The Interprofessional Learning Continuum (IPLC) Model
The recent IOM report proposed a conceptual model for measuring IPE outcomes that needs to be validated and adapted for diverse education and health care settings (IOM, 2015). The Interprofessional Learning Continuum (IPLC) Model is based on theoretical concepts of point-of-care learning, the importance of both formal and informal learning, and a patient-centered approach to learning in health professions education (Josiah Macy Jr. Foundation, 2010; Nisbet, Lincoln, & Dunn, 2013). Kirpatrick's training evaluation model (1967, 1994) was also used as a foundation for defining learning outcomes in the IPLC model. Kirpatrick describes four levels of learning outcomes: reactions, knowledge/skills, behavior, and performance, which have been adapted for use in measuring outcomes of IPE (Kirpatrick, 1967, 1994; Reeves, Boet, Zierler, & Kitto, 2015). The overarching intent of the IPLC model is to create a framework that links IPE learning with patient health and systems-level outcomes.
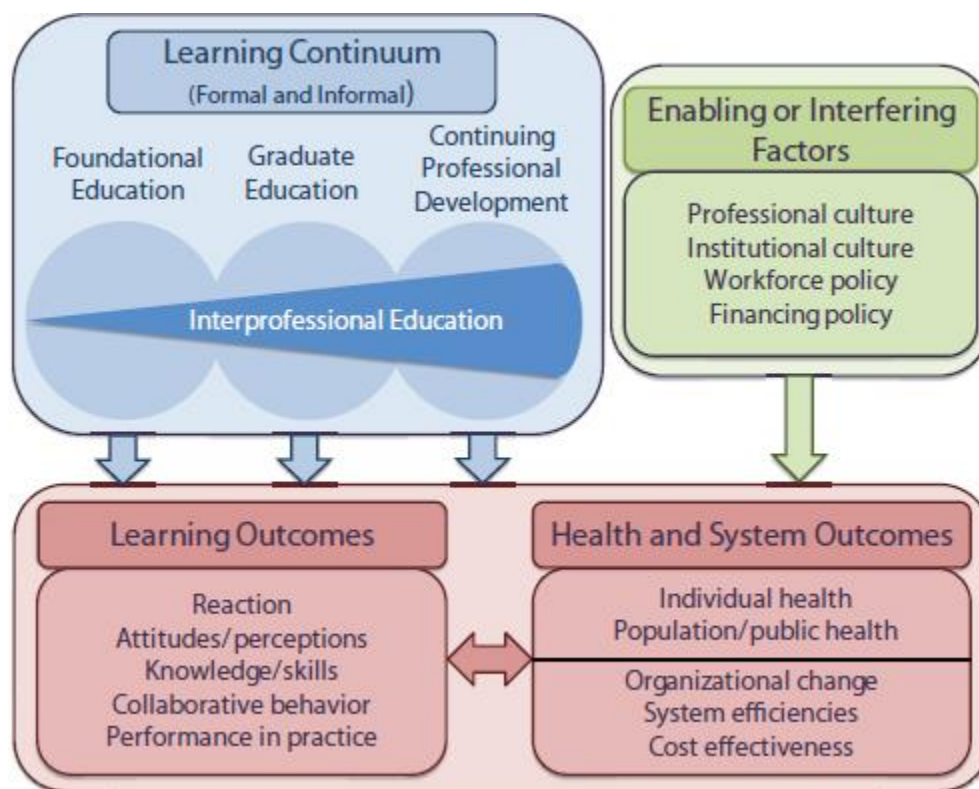
Figure 1

The Interprofessional Learning Continuum (IPLC) Model

Figure 1. Reprinted with the permission from the National Academies Press, Copyright 2015, National Academy of Sciences.

The IPLC model depicts an interprofessional learning continuum across foundational education, graduate education, and continuing professional development and contains four broad domains: learning continuum, learning outcomes, enabling and interfering factors, and health and system outcomes (see Figure 1). The first domain, the continuum of IPE, contains both formal and informal learning experiences that are linked to learning outcomes. This domain attempts to capture the phenomena of developmental learning across undergraduate, graduate, and workplace settings, and the importance of lifelong learning for interprofessional practice, as well as the increasing importance of continuing professional development focused on interprofessional collaboration. The second domain, learning outcomes, identifies reactions, attitudes/perceptions, knowledge/skills, collaborative behavior, and performance in practice as a hierarchy of potential learning outcomes of IPE. The IPLC model views performance in practice as an outcome that exceeds collaborative behavior and that may be able to be linked to other outcomes of effective health care delivery. Previous studies have examined learner reactions to and perceptions of IPE;

however, there is a need to establish links between IPE and the higher-order learning outcomes of collaborative behavior and performance in practice (IOM, 2015; Reeves et al., 2011, 2015; WHO, 2010).

The IPLC model also defines factors that enable or interfere with the development of IPE and measurement of health and system outcomes (IOM, 2015). Professional culture, institutional culture, workforce policy, and financing policy are examples of such factors (see Figure 1). Studies examining relationships among enabling and interfering factors and the learning continuum, and potential solutions for overcoming interfering factors are necessary for the continued improvement of IPE. Finally, the IPLC model identified several types of health and system outcomes important for measuring the impact of IPE (IOM, 2015). Health outcomes encompass both individual and population health. System outcomes include organizational change, system efficiencies, and cost effectiveness. Given that occupational therapists collaborate with a diverse range of health and social professions, the process of socializing occupational therapy students with other disciplines is important to consider. The Interprofessional Socialization Framework may be helpful when considering how existing or proposed programs are impacting students' socialization to other disciplines.

Interprofessional Socialization Framework
Khalili and colleagues (2013) proposed the Interprofessional Socialization (IPS) framework to help educators develop curriculum that facilitates dual identity, that is, both a discipline-specific professional identity as well as an identity as an interprofessional team member. Given that misperceptions about other professions are recognized as a barrier to IPE and practice (Carpenter & Dickinson, 2008), use of the IPS framework in IPE curriculum development may help to address these barriers and guide further study of the process of IPS.

The IPS framework emerged from the theoretical concepts of professional socialization and role learning. During acculturation to a health profession, the aim is often to protect areas of knowledge and scope of practice thought to be unique to that profession. While this process is important for shaping the values and beliefs of a health professional, it can also contribute to "in-group favoritism" and "out-group discrimination" as well as education in silos (Baker et al., 2011; Khalili et al., 2013; Tajfel & Turner, 1986). Uni-professional models of education shape the values and identities of learners in ways that may isolate them from other professions and inhibit IPS (Carpenter & Dickinson, 2008; Gilbert, 2005; Khalili et al., 2013). The IPS model depicts a process of socialization where learners move from a single professional view to a broader interprofessional identity. As learners move through the stages of interprofessional socialization, educators can address attitudinal barriers to interprofessional identity through the design of IPE learning activities and curricula.

The IPS framework proposes that IPE include opportunities for interprofessional socialization both early and frequently in health professions education. While further research is needed to understand the process of dual identity development, the IPS

framework provides a theoretical foundation in professional role learning for curriculum development. The theoretical basis of professional role learning acknowledges that socialization into a profession shapes norms, values, attitudes, and knowledge (Becker, Geer, Hughes, & Strauss, 1961; Newman, 2005), and the stages of IPS emerge from this foundation of uni-professional identity. The IPS framework recognizes three stages of dual identity development: 1) breaking down barriers, 2) interprofessional role learning, and 3) dual identity development as a process of becoming reflective about collaboration. In stage one, breaking down barriers, emphasis is on openness when considering individual perspectives, clarity of one's own professional role, and understanding of other team member's roles. IPE experiences for learners in stage one can include cross-professional interactions where misperceptions are intentionally and explicitly challenged through open, interactive discussion (Sockman & Sharma, 2008). Stage two, interprofessional role learning, emphasizes norms, values, and behaviors for collaboration. The objective in this stage is for learners to establish interprofessional views on client-centered care. One method for accomplishing this is use of a case-based teamwork approach focused on collaborative client-centered care. As learners experience successful interprofessional collaborations on a case, misperceptions are broken down and a sense of identity as a team member is developed in participants (Clark, 1997; Khalili et al., 2013). Next, in stage three, the learner is ready to move further towards development of an interprofessional identity. The process of dual identity development continues with emphasis on becoming more deeply reflective about collaboration and teamwork. Strategies to facilitate learning in stage three include creating a learning environment supportive of giving and receiving feedback within the context of an interprofessional team. Khalili and colleagues' (2013) IPS framework is another example of a theoretical model that can help strengthen IPE development and guide research linking the process of IPE with downstream health care outcomes.

EDUCATOR TRAINING
Frameworks for IPE can be used to guide decision making about training, such as when to implement IPE and how to weave it into curricula. Current literature consistently indicates that intentional efforts are needed to create optimal interprofessional approaches to client care (Freeman, Wright, & Lindquvist, 2010; Hamilton, 2011). Hamilton (2011) identified several objectives for interprofessional health care training, including fostering sensitivity to alternative professional values, challenging pre-existing ideals and stereotypes, improving experiences with clients, and improving overall healthcare outcomes. Freeman, Wright and Lindquvist (2010) described IPE as inclusive of classes that promote interaction between students from different professions by professors who embrace IPE values with a positive attitude. This experience goes beyond a shared lecture situation where students are merely sitting in the same classroom space. IPE is, by definition, "(w)hen students from two or more professions learn about, from and with each other to enable effective collaboration and improve health outcomes" (WHO, 2010).

The academic community is the place where education and socialization for interprofessional practice must take place, if the expectation is that various

professionals work collaboratively in health care settings. Professional cultural shifts are necessary for interprofessional practice to occur, therefore early and repeated training is essential while students are in their academic programs.

Training Examples

Pecukonis, Doyle, and Bliss (2008) described an interprofessional training program for an academic setting, entitled IDEA (Interaction, Data, Expertise, Attention). Interaction refers to the opportunity for individuals from various health professions to learn from and work with each other. This is an intentional process where students become familiar with the professions and challenge stereotypes and preconceived ideas. The authors indicated that this is best done from the beginning of the various academic programs.

Data refers to the accumulation of accurate pieces of information regarding the various professions. This includes the specific training within the particular academic programs, as well as information about the professional role. In addition, an awareness is built regarding perceptions of wellness, illness, values, ethics, among other topics, since these differ within the health professions. Data also refers to understanding the people who have chosen the particular professions. Activities which support an understanding of personal characteristics and strengths/areas of needed improvement, are beneficial for increasing an understanding between the professions. Professional traditions and historical perspectives may also add to "data" clarity.

Expertise refers to the actual dialogue that occurs between professions in relationship to client care. Gaining confidence regarding professional opinion and sharing that opinion in an optimal way, is part of interprofessional cultural competence. Openness to listening to another professional's opinion and discussing the various perspectives, allows the merging viewpoints to benefit the client. Clear explanations and reframing of the problem may occur in open and effective dialogue. This may be practiced in academic settings through case studies, shared lab experiences and other interprofessional activities that deal with client case problem-solving in a supportive environment.

Attention refers to a process of self-reflection on the part of the student. An exploration of one's personal values, biases, and stereotypes is beneficial in creating interprofessional competence. This exploration must include time to also reflect on their chosen profession's history and culture. Inherent in most curricula are classes that provide historical information about the selected profession, but students also need to relate this specifically to themselves and the meaning of this history to their selection of the profession. Reflection of how this aligns to their personal values and beliefs is a significant step in interprofessional competence. Creating open forums where students from different health professions can discuss their impressions about their own disciplines is a helpful process in this area of attention as well.

Other strategies to promote interprofessional training in academic settings include common course offerings, interprofessional teaching teams, interprofessional student

groups on committees, and using accreditation standards to promote the interprofessional activities (Pecukonis, Doyle, & Bliss, 2008).

Hamilton (2011) recommended that the same strategies for cultural competence training be applied to interprofessional competence training. This is accomplished by exploring underlying beliefs, values and pre-conceived ideas about the various health professions, building awareness about the various professions, then using case-based and problem-based methods to discuss alternative approaches for addressing client needs. The shared experience of working together in these types of experiences allows the student to gain interprofessional competence. The author referred to another acronym, "LEARN," for Listen, Explain, Acknowledge, Recommend and Negotiate. Although these self-explanatory terms were used in interprofessional client care, he suggested use of the application of LEARN for the basis of interprofessional communication. As first steps towards this goal, it is recommended that an assessment of current courses and opportunities for infusion be done, as well as an evaluation of barriers to effective implementation (Hamilton, 2011).

Freeman, Wright, and Lindqvist (2010) discussed the significance of training the trainer for optimal interprofessional education results. They shared how faculty at the University of East Anglia in the UK, attend training themselves before educating students. Their program occurs for four hours a week for a period of three weeks. Based on adult learning theory, their approach included training with a choice of activities based on preferred learning styles. For example, reflectors are given time to process and review within their training sessions. The eight main components of the faculty training include the following:

1. Collaborative learning objectives
2. Underlying theory, background and context of IPE
3. Small group work (practice activities that students will do in their training, give presentations for critical feedback)
4. Role playing (practice working with other professionals, discuss experiences)
5. Discussion and reflection on developing skills
6. Training material (review what they'll be providing to students)
7. Ongoing support
8. Evaluation and review (encourage reflection at the end of the academic year, make changes as necessary)

In the United states, the National Center for Interprofessional Practice and Education T3 Train the Trainer Program (NCIPE, 2017), funded by the Josiah Macy Jr. Foundation (Hall & Xierler, 2014; Zierler, 2015) supports faculty development. The program offers interactive workshops focused on "preparing health professions faculty and collaborative practice clinicians from all professions to lead IPE efforts and promote interprofessional team-based care" (NCIPE, 2017, p.1). Faculty engage in pre-work, three and one- half day in person, and mentored training through completion of an IPE experience.

It is clear from these literature examples that academic units need to establish intentional strategies for training in IPE if optimal results are expected. Understanding and valuing the objectives of interprofessionalism, engaging in careful planning, implementation and assessment are all key ingredients for interprofessional education. To assess the efficacy of IPE, one must reflect on the specific learning objectives and determine the best means of assessment.

ASSESSMENT

A "one size fits all" assessment of the efficacy of IPE does not exist. To evaluate any IPE initiative or program, the team leaders should select an assessment or assessments that are consistent with the stage or stages in the IPS framework that their learning experiences best fit (Khalili et al., 2013). Consideration should also be given to the Interprofessional Education Collaborative (IPEC) core competencies and their potential impact on interprofessional education and practice (IPEC, 2011). The next step would be to determine preferred evaluation methodologies. Qualitative and quantitative methods both provide meaningful data and may also be combined for mixed-methods outcomes. If using quantitative methods, a challenge is to select valid and reliable instruments that best measures outcomes for the intended purpose and population.

Efficacy research utilizing quantitative methods for interprofessional education and practice outcomes is dependent upon the availability and use of valid and reliable instruments (Thannhauser, Russell-Mayhew, & Scott, 2010). Reviews of instruments used in interprofessional education and practice research have provided overviews of instruments' purposes, appropriate populations, psychometric properties, public availability and theoretical perspectives (CIHC, 2012; NCIPE, 2015; Thannhauser, Russell-Mayhew, & Scott, 2010). After reviewing 23 instruments used in interprofessional research, Thannhauser, Russell-Mayhew and Scott (2010) recommended two: The Readiness for Interprofessional Learning Scale (RIPLS) and the Interdisciplinary Education Perception Scale (IEPS). These instruments were recognized for their public accessibility, common use, applicability for diverse populations, for their sound psychometric properties. However, the need exists for instruments that move beyond measuring general attitudes and perceptions to evaluation of student and practitioner collaboration in the field. Three instruments designed to evaluate team performance were also discussed with a disclaimer that 'teamwork' was not necessarily a measure of collaborative practice (p. 341).

The Committee on Measuring the Impact of Interprofessional Education on Collaborative Practice and Patient Outcomes (IOM, 2015) completed a thorough review of IPE instruments. The authors used a systematic database review, along with hand searches of quantitative measures of IPE published between 2000 and 2010. Their search resulted in 136 articles that met their inclusion criteria. The authors published a table that included relevant instruments for IPE. Instruments were classified into six levels: 1) Attitudes; 2) Knowledge, skills, and abilities; 3) Behavior; 4) Organizational Practice; 5) Patient Satisfaction; and 6) Provider Satisfaction. An awareness of the

desired level of measurement for the IPE experience may be useful when accessing another excellent instrument resource and networking website known as the Nexus or National Center for Interprofessional Practice and Education (NCIPE). Launched in 2013, the NCIPE offers reviews of 26 instruments that met their established criteria. The Nexus is continuously updating its collection of IPE resources including instruments designed to assess IPE/P efficacy.

DISCUSSION

The AOTA SoTL IPE community recognizes that IPE is a vital component of occupational therapy education. As occupational therapy educators and practitioners work to contribute to the body of IPE knowledge, AOTA is active at the national level through membership in the Interprofessional Education Collaborative (IPEC, 2017). The interprofessional frameworks and resources discussed in this article can benefit faculty and practitioners who are new to providing IPE, as well as those who are reflecting on their current program. The suggestions and resources were selected to help faculty who are evaluating IPE program efficacy and determining next steps. The authors encourage IPE programs to select a conceptual framework to ground program development, and also provide resources for train the trainer programs to help programs at any level of experience improve their collaboration and work toward next steps. Examples of next steps may include incorporating one course-based IPE activity, expanding an existing IPE program, measuring outcomes, conducting efficacy research to document outcomes, or disseminating findings of IPE research.

The IPLC learning continuum is included (Figure 1) to encourage readers to consider where their current or prospective IPE activities fall with regard to foundational education, graduate education, and continuing professional development. The IPLC is also useful for guiding an IPE team to intentionally determine their desired learning outcomes. The authors provide suggestions related to selecting valid and reliable measures consistent with intended IPE outcomes. It is through the use of theory based efficacy research that IPE will build a stronger foundation for interprofessionalism in OT, and advocate for continued dialogue in this important curricular and practice area.

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