



The role of student adaptability in interprofessional education



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ABSTRACT

The current study investigated the influence of student adaptability and years in college on receptiveness to IPE training. The primary purpose of this study was to determine the degree to which a student's level of adaptability, predicted positive changes in their perceptions of teamwork, interprofessional cooperation, and professional autonomy after participation in a single case-based IPE forum. Secondly, the study investigated if using concept mapping as an instructional technique during an IPE activity influenced student perceptions of teamwork, interprofessional cooperation, and professional autonomy. Higher levels adaptability accounted for a significant portion of the variance in positive change in IEPs scores. Additionally, years in college along with level of adaptability accounted for additional variance in the positive change in IEP scores. There was no statistical difference found between the instructional groups regarding their IEPs scores.

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The U.S. healthcare systems continue to undergo significant change, and it is critically important that students in all health professions learn to work together to improve patient care.¹ Inherent in the interprofessional education (IPE) movement is the belief that when students learn together with an emphasis on patient-centered care, the likelihood of safer patient-centered care in the field will increase.^{1,2} Systematic reviews of the literature indicate that in general, IPE is well received by learners and it can improve students' attitudes and perceptions toward interprofessional collaboration.^{3,4} However, generalizable interpretations about the long-term effectiveness of IPE and an understanding of the best strategies for translating IPE into interprofessional team-based care are currently not clear.^{4–7}

It has been suggested by Judge et al that “identification of factors influencing readiness for interprofessional learning are key to developing learning strategies targeted to improve teamwork, quality of care, and patient outcomes”.⁸ However, it is unclear what characteristics indicate a student is adequately prepared to participate in complex and novel IPE activities.⁹ Judge et al found individual attributes such as being male and having more healthcare experience were barriers to IPE activities.⁸ Honan et al suggest negative student attitudes may pose the greatest barrier to shared learning.¹⁰ As IPE activities progressed in our setting, the question of which students were most and least likely to benefit from IPE

experiences also emerged. The current study investigated the influence of student adaptability and years in college on receptiveness to IPE training.

The primary purpose of this study was to determine the degree to which a student's level of adaptability (The Adaptability Scale), predicted positive changes in their perceptions of teamwork, interprofessional cooperation, and professional autonomy after participation in a single case-based IPE forum. Adaptability is defined as an individual's appropriate cognitive, behavioral, and/or affective adjustments in the face of uncertainty and novelty.¹¹ We predicted that adaptability would account for significant variance in student attitudes towards IPE and the need for teamwork. Our hypothesis was based on the idea that students who are less adaptable, and therefore need more intense, scaffolded instruction, would perceive less benefit from working in teams. In effect, we are suggesting that some IPE learning opportunities benefit students who already have flexibility in their ability to adapt in team settings, rather than reaching students who need more remediation. As IPE training activities are developed, educators should understand their responsibility for producing professionals who can connect with others and overcome interpersonal problems in order to benefit clients and patients. Therefore, results are discussed in terms of trainers' responsibilities to assess and remediate students' adaptability to maximize the benefits of interprofessional education.

Secondly, the study investigated if using concept mapping as an instructional technique during an IPE activity influenced student perceptions of teamwork, interprofessional cooperation, and professional autonomy. A concept map is a graphical tool that is used

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for organizing information and is designed to assist learners in answering question and understanding events or situations.^{12,13} In a 2015 literature review by Martin, Martin, and Southworth they found 44 empirical studies conducted from 1988 to 2015 that looked at changes in academic achievement following concept mapping.¹⁴ Of the studies reviewed, 24 reported statistically significant differences between concept mapping experimental groups and control or alternative intervention groups. Additionally, a meta-analysis of 55 empirical studies involving 5818 subjects found that concept mapping activities proved more effective than an alternate method of organizing and learning information.¹⁵ We hypothesized that using concept maps would positively influence student perceptions of the need for interprofessional cooperation especially for those students with lower levels of adaptability who would benefit from a more structured instructional technique.

Method

Subjects were 319 students representing six health disciplines (dietetic, nursing, occupational therapy, physical therapy, psychology, and speech-language pathology) with at least two years of college attendance. These students participated in a case-based IPE forum where they engaged in team problem solving regarding hypothetical case-studies (Appendix A). Participants were randomized into two types of instructional groups: group 1 was guided by a facilitator and worksheet; group 2 was guided by a facilitator, worksheet, and concept map. The procedures and materials for group 1 (who were guided by a facilitator and worksheet) have previously been reported.^{16,17} Procedures for group 2 were the same as group 1 with the addition of a concept map. At the beginning of the forum, students in group 2 were given two examples of concept maps to illustrate how the maps are organized hierarchically and how concepts on the maps related to one another. During the discussion, students were shown how to use the boxes, single directions arrows, and dual direction arrows to represent information or concepts. There was also a brief question and answer period that

followed for both groups. Concept maps were collected at the end of the forum and an exemplar of the concept maps were constructed from all student responses to record the commonalities and range of responses across all groups (Fig. 1).

All students completed pre-testing surveys including the Interdisciplinary Education Perception Scale (IEPS) and The Adaptability Scale. Post-testing was completed within one week of the IPE forum, and the IEPS was re-administered. One hundred-sixty students completed both pre and post-tests resulting in an acceptable response rate of 50%. The data were compared to determine if adaptability, years in college, and instructional method (group) predicted the change in scores on the IEPS from before to after the IPE forum.

Tools

The Adaptability Scale

Adaptability was measured by The Adaptability Scale (Appendix B).¹¹ An individual's ability to “adapt” under uncertain circumstances is thought to involve cognitive, behavioral, and/or affective adjustment. The scale items reflect three content areas: 1) appropriate cognitive, behavioral, and/or affective adjustment in response to 2) uncertainty and/or novelty that has 3) a constructive purpose or outcome. The scale has been demonstrated to have high reliability (Cronbach's alpha ranging from .90 to .92) and also offers good convergent validity.¹⁸ The total score of all items, rather than the less reliable subscales, was used in the current paper.¹¹

Interdisciplinary Education Perception Scale

While there are numerous scales that have been developed to assess IPE, there are limited choices with sound psychometric properties.¹⁹ The Interdisciplinary Education Perception Scale (IEPS) was chosen to be used in the current research because it was designed as a pre/post-assessment of healthcare students' attitudes

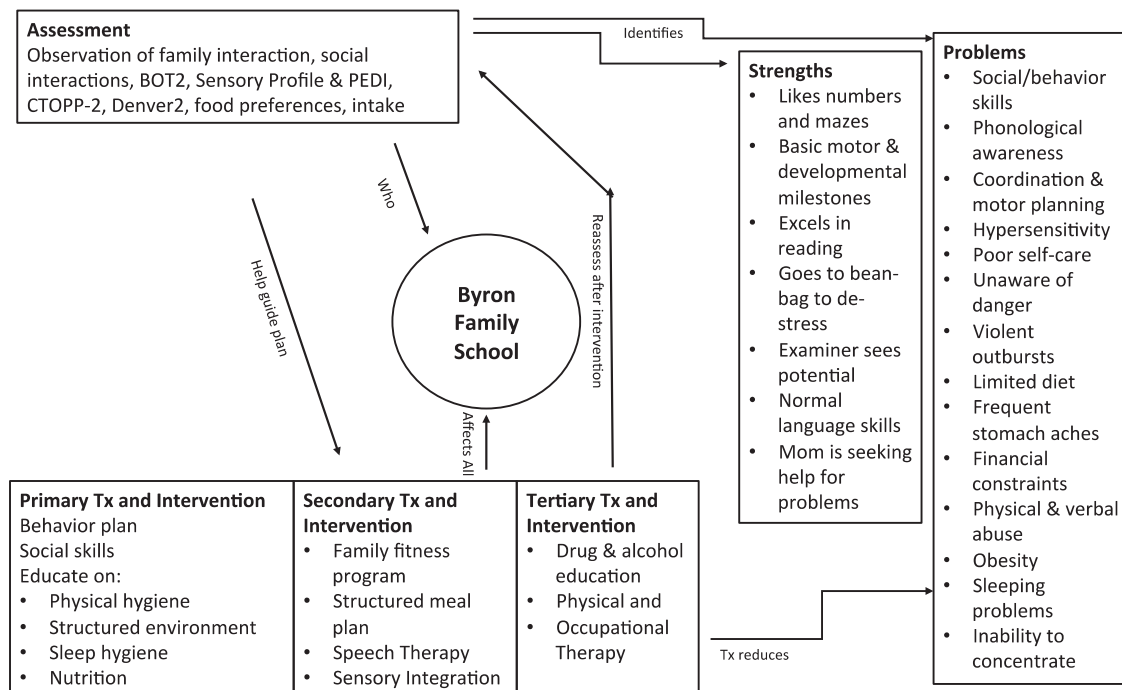


Fig. 1. Exemplar combined concept map.

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