

# Designing the Conceptual Model of Interprofessional Education: A Systematic Map

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## Abstract

**Background:** Interprofessional education is an innovative method to face with challenges in the contemporary health care system. To achieve real-life learning experiences, we need to move toward a comprehensive model of Interprofessional education with systematic detection of similarities and differences.

**Methods:** systematically and comprehensively literature search in international and Iranian databases such as Google Scholar, Scirus, Pro-quest, Scopus, IEEE, Eric, Taylor, Francis, Science Direct, Scientific Information Database (SID) and Magiran. Four models based on research question selected and reviewed with systematic map approach.

**Results:** Each model covered different aspects of Interprofessional education. First model described the components of a basic framework for interprofessional practice; second model was interactive model of professional education, third model has shown four areas of competency of interprofessional education and support for the development of skills as values and ethics for interprofessional practice and forth model highlighted the relationship between interprofessional education and collaborative practice.

**Conclusion:** use of this educational method similar to other educational methods required the design of a specific training program, which contained the specific qualifications of each profession and the competencies of the interprofessional, which are consistent with the culture and each discipline in a particular way.

**Keywords:** Interprofessional education, Collaboration, Shared learning, Conceptual Model, Medical student

## INTRODUCTION

For achieving the best outcome in the healthcare system, healthcare professionals should collaborate. However, each healthcare provider should have knowledge, attitudes and skills and know about other providers' roles and how to collaborate to achieve desirable patients' outcomes(1). Education in the healthcare system not only is about knowledge and skill, but also defines how to get a new identity through competency and collaborative interprofessional works(2). Interprofessional education is an

innovative method to face challenges in the contemporary healthcare system(3). It is defined as the provision of opportunities when students from two or more healthcare professions in health and social care disciplines receive education in all or part of their professional education with the aim of providing patient-centered care(4, 5). Also, interprofessional education is known as 'multi-profession education', 'collaborative learning', and 'shared learning'; interdisciplinary education(4). Interdisciplinary education is a favorable title for national and international organizations including the world health organization (WHO), institute of medicine and health council of Canada(6-8). According to the Center for Advancement of IPE, interprofessional education occurs when two or more professionals learn with, from or about each other, promote collaboration and improve the quality of care. Learning occurs in clinical and practice-based environments and help healthcare professionals take a comprehensive view of their own profession. Its objective is to provide opportunities for

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students in the field of healthcare to develop attributes and skills required for effective collaborative work(9). It has shown positive outcomes in academic and clinical settings including the development and enhancement of students' understanding, respecting the responsibility and duty of other healthcare providers and teamwork skills such as interprofessional communication that improve the quality of healthcare services(10-12). It provides opportunities for students to develop professional perspectives and make collaborations for patient-centered care. In the past decade, studies have been published about interprofessional education(2). The WHO in 2010 suggested a framework for practice and interprofessional collaboration. It was consisted of three themes as interprofessional education, collaborative work and health and education system based on the competency of participants(6). However, many groups and organizations have started to follow it, but a few educational frameworks are available to provide comprehensive and effective interprofessional education(2). Previous studies described experiences on interprofessional education among healthcare students (10, 12). For creating a framework for ongoing development and refinement of clinical interprofessional education strategies interprofessional education models are required(13). For students to achieve real-life learning experiences, they need to move toward a comprehensive model of systematic detection of similarities and differences and interprofessional education(11, 14). There is a need to review different aspects of interprofessional education to reach a basic conceptual model of interprofessional education.

## MATERIALS AND METHODS

It was a systematic map to survey quality of IPE models. These methods map out and categorize existing literatures. Researchers should show that their research is going beyond making a list of the literature description. The researcher has done a systematically literature review to cover the gap of knowledge and provides recommendations for future research. In this review, the analysis of conceptual models and review of conceptual models for identifying factor influencing the conceptual model were conducted. The focuses of questions in this review were what issues affected interprofessional education models, what factors were noted in interprofessional education and what models included both components. A literature search was conducted systematically and comprehensively in international and Iranian databases such as Google Scholar, Scirus, Pro-quest, Scopus, IEEE, Eric, Taylor, Francis, Science Direct, Scientific Information Database (SID) and Magiran. A large number of models were found. They were prioritized and those with more conceptual richness were selected. Operational models that were designed for

a particular school or setting were excluded, because this review aimed to investigate their theoretical foundations. As the limitation of this study, access to some databases was not possible.

## Findings

Copley et al. (2007) designed a model for interprofessional education in the University of Queensland based on the Bronstein model (2003). This model described the components of a basic framework for interprofessional practice. It is based on the multidisciplinary theory of collaboration, service integration, role theory and theory of ecological systems. The interprofessional process was shown in five main components as interdependence (relying on others to accomplish goals), newly created professional activities (collaborative work is faster than individual works), flexibility (description of vague roles), collective ownership of goals and reflection on the process (ensuring colleagues to maintain their focus on the work)(15). The Copley version has additional components that occur in a cyclic manner including more understandings of their role and career through working with other professionals and the interdisciplinary process as other disciplines' interests and experiences. It is valuable for students to know other professions' jargons(13). (Figure 1)

Grapzynsky et al. suggested the interactive model of professional education. It was designed based on andragogy and constructivist approaches. The holistic approach to patient care is based on the vision of healthcare provides a creation of a common language for all healthcare professionals. This model can be used beyond the university in a variety of fields such as healthcare institutions that interprofessional education is applied. This approach is derived from the Sullivan and Rosin's work as a practical approach for education and decision making. Holistic care is derived from the work of Newman and Faust and contains a care centered model with a focus on patients' needs in the interaction with the environment. This healthcare approach is derived from the WHO and the international classification of functioning, disability and health (ICF). Four main topics of practical reasoning are 'professional identity', 'community', 'responsibility' and 'body of knowledge'. In this model, the patient is in the center and four main issues surround it with a feedback from the patient. This mutual feedback reflects the importance of the open system, where all components interact and work together. Health care professional students learn about the identity, responsibility, communities and bodies of knowledge. Also, healthcare providers know that patients' need are changed(2). (Figure 2)

Noor-e-din et al. (2016) designed a model of interprofessional education in the California Interprofessional education research academy (Figure3). Interprofessional education

for collaborative work has been developed in four areas of competency of interprofessional education and support for the development of skills as values and ethics for interprofessional practice, roles and responsibilities, interprofessional relationship, teams and teamwork. Each domain includes a wide range of knowledge, skills, attitudes and values to demonstrate skills in four areas. The IPERA CA model provides interprofessional education activities for two or more professions using four specific modes of interprofessional experiences including didactic, simulation, community and clinical education. Didactic education purposefully integrates multiple learning pedagogies. Students enjoy meeting each other and learn about various educational experiences. Teaching strategies are direct instruction, multimedia, teamwork learning, problem-based learning, case method learning. Simulation scenarios are designed to achieve one or more competency of interprofessional education for collaborative works. The term of community-based interprofessional practice gives

opportunities to undergraduate and graduate students from multiple healthcare disciplines to participate in learning experiences. Students experience interprofessional education in healthcare clinics, exhibitions and other healthcare events. Finally, clinical practice aims that students from various disciplines work and learn together(16). (Figure 3)

Danielle D'amour and Ivy Oandasan (2003) provided the interprofessional education framework for patient-centered collaborative care. It highlights the relationship between interprofessional education and collaborative practice (Figure 4). This framework was consisted of two concentric circles, the first for education and the second for practice. The first loop affected the learners' capacity in the micro-level (teaching), intermediate (institutional) and macro-level (systemic) in the way that a qualified collaborative doctor would be educated. Students are at the center of the loop affected by factors reducing or improving their ability to achieve competencies for collaborative work. The second

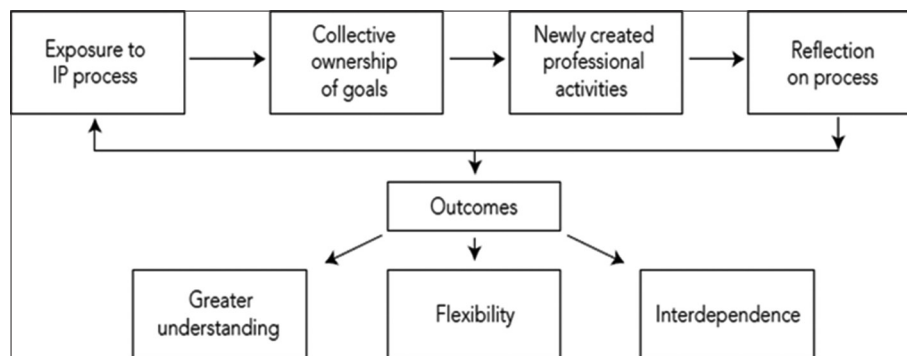


Figure 1: The adapted Bronstein model of Interprofessional education in University of Queensland clinics

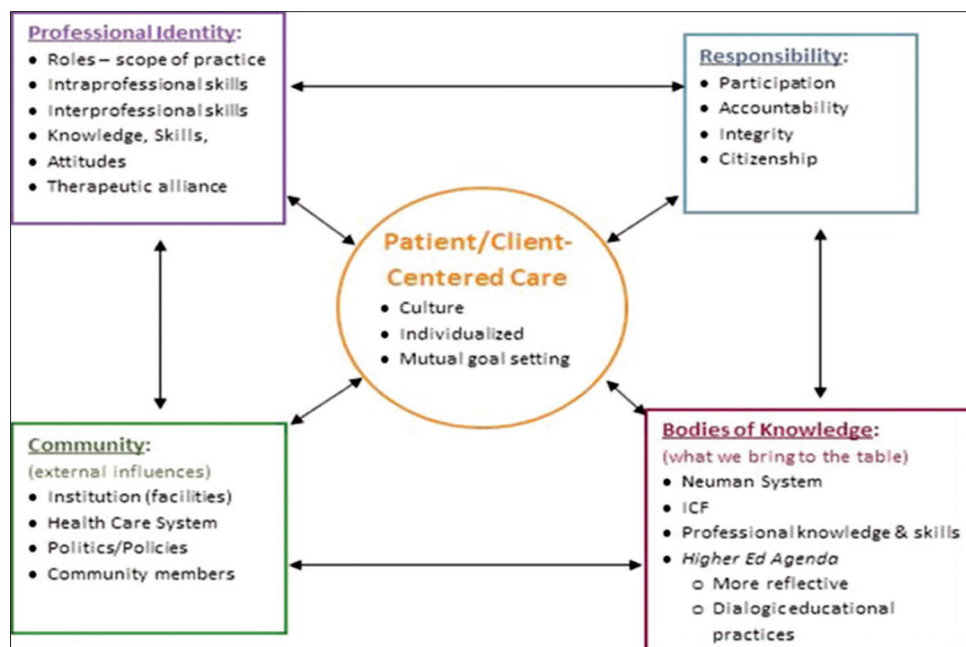


Figure 2: An interactive model of IPE

loop involves the process and factors affecting the results of patient care in a collaborative environment. This loop shows processes through which healthcare professionals organize their cooperation. These processes are complex, because they are concerned about human interactions between healthcare professionals with different perspectives that are in a changing complex environment. Patients are at the center of the loop and healthcare outcomes are affected by healthcare professionals' collaborative work(17).

## DISCUSSION

According to Dziegielewski and Cowles, effective interprofessional collaboration leads to continuous learning about other healthcare fields, flexibility and overlapping roles when the competencies of healthcare professionals allow(18, 19). In the Copley model, flexibility is one of the crucial elements for cooperation. The model of the University of Queensland provides a comprehensive

knowledge about patient's problems and can be used in a wide range of therapeutic strategies. It can lead to a better understanding of roles and views of other healthcare professionals and improve teamwork skills such as negotiation. A disadvantage is that it takes time and poor flexibility makes new issues in learning(13). Patients are primary reasons for the collaboration between healthcare professionals. Patients' needs determine interprofessional interactions between healthcare providers. Therefore, patients are in the center of collaborative care, as mentioned by D'Amour and Oandasan(17). Sullivan and Rosin described Identity development as a necessary process for Interprofessional collaboration(20). According to the panel of experts of interprofessional education for collaborative practice, in the Noor-e-din model, students learn from faculty members through observation, which increases the productivity of faculty members(21). The institute of medicine suggests that the synergistic cooperation and teamwork experiences by faculty members in the CA-IPERA are caused by scientific opportunities. Faculty members are positively affected by learning from each other, sharing experiences, and helping each other for growing their professional roles(7).

Special attention should be paid to student-centered learning in professional education is noteworthy(22). Ondasan and Reeves in this model pointed out the importance of the issue. The Ondasan and Reeves model is about how to improve patient-centered collaborative care and outcomes. It is a student-centered and patient-centered model. Grapzynsky et al. introduced a patient-centered and collaborative model(17). IPEC states that one of the

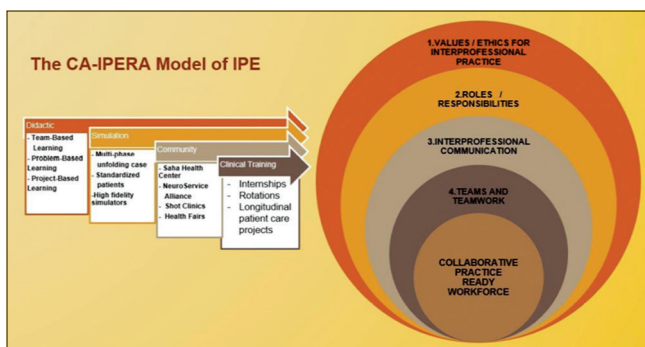


Figure 3: CA-IPERA model of IPE

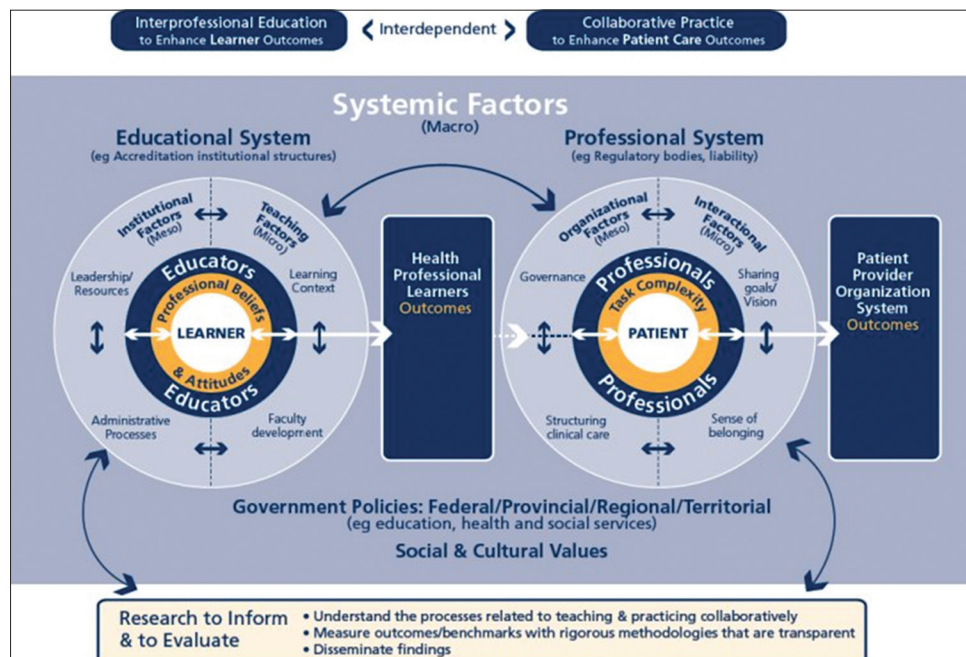
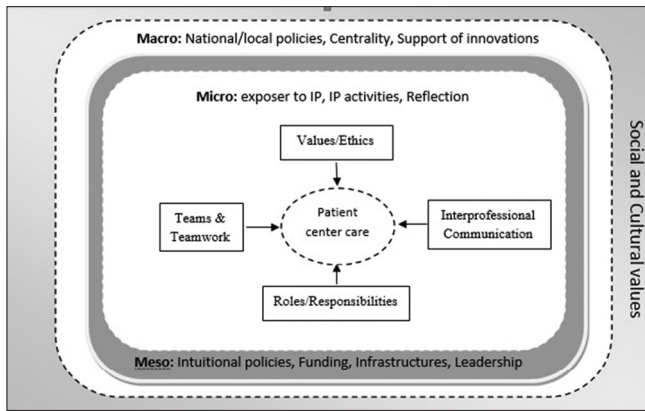


Figure 4: Interprofessional education for collaborative patient-centered practice





**Figure 5: Conceptual model of IPE**

most important aspects of interprofessional education competencies is patient-centeredness(21). Scott reeves et al. suggested that this conceptualization expressed the nature of IPE and IPC-related activities. However, it is not useful to describe the nature of the effectiveness of each skill(17). Pamela Reis et al. suggested that this framework included a paradigm shift, because inter-professionalism has a unique body of knowledge(23).

## CONCLUSION

Interprofessional education is an interactive student-centered teaching method that leads to patient-center collaborative work. Successful design and application of interprofessional education need to use teaching and learning theories. The use of this educational method similar to other educational methods required the design of a specific training program, which contained the specific qualifications of each profession and the competencies of the inter-profession, which are consistent with the culture and each discipline in a particular way. Evaluation methods should be accurate and based on appropriate models to measure the results of interprofessional education. Feedback serves as a most important aspect of this educational method, which plays an essential role in the transformation and improvement of education. Interpersonal education is not just an educational method, but rather a paradigm shift, that requires a widespread acculturation. In the cultural context, the preparation of this training method requires the agreement and cooperation of various levels. At the macro level, appropriate education healthcare policies should be adopted and the government should also provide necessary financial and operational support. At the intermediate level, organizational factors involved in leadership teaching and learning should be considered.

When appropriate cultural, political, governmental and organizational platforms are prepared, interprofessional education is performed in the micro level.

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