

An integrative Caring-based Learning Guide for Interprofessional Health Education and Collaborative Practice

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Abstract

Learning is vital and was considered fundamental for improvement to address innovations in education based on the trend and what are the needs of learners brought by changes occurred from time to time. A transformation that involved multiple forms of engaged educational experiences across boundaries that epitomized the new generation's curricular, co-curricular, and educational innovations to determine the value and extent of students' overall learning. In this light, one of the method in education being advocated is the Interprofessional Education that World Health Organization has been supported. With this, it was the intention of this endeavor to develop an integrative caring-based learning guide for interprofessional learning in the field of health that will promote team working specifically in the care of an adult patient. The sequential transformative design of the mixed method in research was employed in this study. The learning guide derived its context from the learning styles and the suggestions of allied health professionals who are currently practicing their own profession either in the academe or in a healthcare facility that was configured based on the framework of instructional design and course syllabi of the Philippine's Commission on Higher Education Memorandum Order Number 15, series 2017.

Keywords: *Interprofessional Education, Allied Health Students, Allied Health Professionals, Learning Style, Health Education.*

Introduction

Education is a vital factor in achieving an expressive growth in terms of literacy and technological advancement. It is considered fundamental for improvement that is mandated to enhance the effectiveness among educators and efficiency among learners. Thus, it is the main obligation of an educational institution to characterize instructional innovations that will determine the value and extent of students' overall learning. On the other hand, delivering health care nowadays turned out into a complex team effort wherein, providing health care to patients require professionals that can communicate and collaborate from different health disciplines. This is due to the scope of practice that is increasingly overlapping.

In this light, most from the western countries introduced a scheme in educating learners particularly in health profession termed as Interprofessional Education (IPE). This is to combat the arising factors affecting their competency as health practitioners. The Centre for Advancement in Interprofessional Education [CAIPE] (2016) defined IPE as an occurrence that involved students of more than one health profession to learn from each other that improves collaboration and the quality of health care delivery. Moreover, Barr & Low (2013) outlined IPEt is a means of working in partnership between professions and organizations with individuals, families, groups and communities which is not new for the early initiatives.

IPE has been supported by the World Health Organization for so long. This has been driven by the worsening shortage of health care workers globally and how such workers were educated. (WHO, 2013) As such, Guraya and Barr (2017) said that IPE was not confined in the developed western world but also in Kenya, Indonesia, India and Japan that emphasizes collaborative practice which is aimed in promoting the working relationships between two or more healthcare professions.

The need of IPE and its advantages to collaborative practice were justifiably articulated. It prepares future health care providers and helps them to develop a better understanding on the roles of each profession. (Hood, Cant, Leech, et al., 2013) Moreover, in some healthcare facilities, several professionals knew little on practices, expertise, responsibilities, skills, values and theoretical perspectives of other disciplines. (MacNaughton, Chreim & Bougeault, 2013) Thus, Michalec, Giordano, Dallas and Arenson (2017) suggested that, chances for students to easily communicate and socialize may have substantive constructive impact on students' perceptions and knowledge of other health disciplines and professions.

While there is a rising body of verifications that exhibit the advantages of IPE within the initial stage of health programs, it is suggested to conduct researches to appraise the extent how IPE is correlated with collaborative practice activities at which, additional program participation and future research will contribute to an enhanced perspective on groundbreaking academic approach to health education. (Kanji, Lin and Krekoski, 2017) In response, Mickan, Hoffan & Nasmith (2012) shared their sentiments that a collaborative practice behavior has reduced rates and costs of hospitalization, improved communication among professionals resulting in a reduction in medical errors, and improved job satisfaction levels through sharing of challenges and increased collegial support. Patients had also reported higher levels of satisfaction, better acceptance of care, fewer clinic visits, and improved health outcomes when cared by a health team. Furthermore, some studies had concluded that IPE increased students' appreciations of their future functions and the relevance of interprofessional communication and shared decision making. (Joseph, Diack, Garton & Haxton, 2012; Vyas, McCulloh, Dyer, Gregory & Higbee, 2012) While Grice and McCorkle (2016) shared that IPE is productive, effective and efficient if conducted in a smaller number of learners. Its focus is more on specific situations or circumstances in the clinical areas that do not require large classroom-based activities to be successful. One thing, interprofessional collaboration occurs when 2 or more professions work together to solve complex issues through a jointly developed structure, shared responsibility and authority. (Green & Johnson, 2015) This means that IPE can be implemented with minimal conditions that affect its effectiveness and IPE can improve students' knowledge, skills, and understanding of collaborative practice. However, ascertaining a determined experiential relationship between IPE and client's results is a thought-provoking. (Cox, Cuff, Brandt, Reeves & Zierier, 2016)

In the Philippines, there was limited experience among higher educational institutions to implements IPE although this is internationally recognized. Paterno & Opina-Tan (2014) affirmed that IPE is a new practice in this country. No higher academic institution with health programs was reported. Although some health organizations asserted of observing and implementing interprofessional collaborative patient care, these experiences have not been published. Similarly, community immersion is not extensively implemented by tertiary schools with health academic program.

With this, it is noteworthy to bring students from more than one health professions together to learn early. At which, throughout their health education, expertise of each profession provides how to respect each other's expertise with humility and integrity, and how to openly communicate in a way that generates quality patient health care. (IPE Team, 2018) Though there are less available evidences in relation to direct benefit to patients, there are studies that show improvements in healthcare processes, patient satisfaction and clinical outcomes. (Reeves, Perrier, Goldman, Freeth, & Zwarenstein, 2013) One thing, there are researches showing the utility and efficacy of interprofessional collaboration that is beginning to grow. (Jacobson, 2012).

Methods

Sequential transformative strategy of the mixed method in research was utilized in this endeavor. It emerged in a pattern where both qualitative and quantitative research approaches were used in data gathering that can be done chronologically. In this study, the learning styles of allied health students was taken quantitatively thru survey which was substantiated by follow up interview with those students who submitted their willingness to share data related to the focus of this study. Further, key informant interview (KII) was conducted with allied health professionals who actively practicing their profession in the academe or in a healthcare facility. Further, purposive – convenience sampling was utilized in selecting participants from the allied health students while snowball sampling technique was employed to allied health professionals.

Learning Style Inventory (LSI) with four learning characteristics was utilized in appraising the learning style of allied health students. This was designed by Honey & Mumford based on the work of David Kolb. (Kolb & Kolb, 2012; Williams, Brown, & Etherington, 2013) It was pretested to determine its reliability to Filipino students making use of Kuder-Richardson 20 (KR20) coefficient. The said instrument was declared valid for the coefficient of reliability is 0.97 with a descriptive equivalent of "very reliable". Further, Key Informant Interview (KII) was utilized during the follow up interview with allied health students and allied health professionals. This is purposely to discover informants' feelings, perceptions and thoughts that focused on the past, present and, the essential experiences of the participants. (Marshall and Rossman, 2015) An open-ended question that is focused on the need of this research was asked from the key informants individually in different time and locations.

Weighted means of the conducted survey and thematic analysis was used in the transformative interpretation of the data. As outlined by Boyatzis, thematic analysis is purposely for analyzing classifications and present themes (patterns) that relate to the data which illustrates in prodigious features and deals with various subjects through interpretations. Alhojailan (2012) Moreover, another review was done to determine if it provides the necessary data needed for this study. Defining and naming themes comes next that leads the author to develop a detailed evaluation of each theme resulting to write-ups where analytical narrative and data extracts were combined leading to the realization of a framework for analysis that is essential in this study.

Results and Discussions

Predominance of learning styles and study habits

Table 1 presented the predominance of learning styles demonstrated by the allied health students according to academic program and year level. The findings revealed that pragmatist was the predominant learning style of allied health students. As gleaned from the table, the four characteristics of learning styles were demonstrated. However, taking into considerations the highest weighted means per program, student nurses were found activist; physical therapy and radiologic technology students were pragmatist; and the medical technology students were observed theorist. It was noted that only three characteristics were the most demonstrated.

Furthermore, the result implied a very little difference among allied health students in terms of predominance in learning styles. It has been noticed as well that they prefer numerous learning styles and practice a combination of learning styles. It could be explained because it was the nature of the health profession where practice or Related Learning Experience (RLE) and theory are integrated. That the combined attributes of being a pragmatist, activist and theorist are needed. The result is in parallel with the findings of Wagner, Hansen, Rhee, Brunts, Terbizan & Christenen (2014) where students in some health science courses were in favor of a combination of two learning styles. While Nuzhat, Salem, Al Hamdan & Ashour (2013) on preferred learning methods of students showed multimodal predomination. Moreover,

given that medical students usually perform clinical trials as a team, they must not be limited to only one style of learning. Therefore, they must be encouraged to apply combinations of learning styles. (Zeighami & Jahani-Hashem, 2013) Thus, understanding preferred learning styles of college students in different academic programs may increase the effectiveness of teaching and learning.

Table 1: Predominance of learning styles demonstrated by the allied health students according to academic program and year level

Academic Program	Year Level	Learning Styles								Overall	
		Activist		Theorist		Pragmatist		Reflector			
		WM	DI	WM	DI	WM	DI	WM	DI	WM	DI
BSN	First	3.15	OD	3.11	OD	3.63	FD	4.15	FD	3.51	FD
	Second	3.85	FD	3.23	OD	2.76	OD	3.20	OD	3.26	OD
	Third	4.20	CD	2.75	OD	3.15	OD	3.21	OD	3.33	OD
	Fourth	3.70	FD	3.60	FD	3.20	OD	3.15	OD	3.41	FD
AWM		3.73	FD	3.17	OD	3.19	OD	3.43	FD	3.38	OD
BSPT	First	3.25	OD	4.11	FD	3.74	FD	3.35	OD	3.61	FD
	Second	3.65	FD	3.31	OD	3.26	OD	4.23	CD	3.61	FD
	Third	3.10	OD	2.62	OD	4.15	FD	3.46	FD	3.33	OD
	Fourth	4.70	CD	3.87	FD	3.62	FD	3.05	OD	3.81	FD
AWM		3.68	FD	3.48	FD	3.69	FD	3.52	FD	3.59	FD
BSMT	First	4.15	FD	3.01	OD	3.73	FD	3.76	FD	3.66	FD
	Second	2.85	OD	3.72	FD	3.89	FD	3.18	OD	3.41	FD
	Third	3.20	OD	4.32	CD	2.75	OD	3.43	FD	3.43	FD
	Fourth	3.74	FD	3.89	FD	4.23	CD	3.24	OD	3.78	FD
AWM		3.49	FD	3.74	FD	3.65	FD	3.40	FD	3.57	FD
BSRT	First	3.45	FD	3.33	OD	2.83	OD	3.29	OD	3.23	OD
	Second	3.25	OD	3.46	FD	3.72	FD	3.24	OD	3.42	FD
	Third	3.22	OD	2.23	RD	4.15	FD	3.28	OD	3.22	OD
	Fourth	3.11	OD	3.89	FD	4.11	FD	3.03	OD	3.54	FD
AWM		3.26	OD	3.23	OD	3.70	FD	3.21	OD	3.35	OD
Over all		3.54	FD	3.41	FD	3.56	FD	3.39	OD	3.47	FD

Legend: DI – Descriptive Interpretation; 4.20 – 5.00 = Constantly Demonstrated (CD); 3.40 – 4.19 = Frequently Demonstrated (FD); 2.60 – 3.39 = Occasionally Demonstrated (OD); 1.80 – 2.59 = Rarely Demonstrated (RD); 1.00 – 1.79 = Scarcely Demonstrated (SD); AWM –Average Weighted Mean; BSN = Bachelor of Science in Nursing; BSPT = Bachelor of Science in Physical Therapy; BSMT = Bachelor of Science in Medical Technology; BSRT = Bachelor of Science in Radiologic Technology.

Furthermore, the predominance of learning styles demonstrated by the allied health students according to year level reflected that both freshmen and sophomores frequently demonstrated “reflector” as their preference. The result is consistent with some studies that first-year students have a propensity for being the reflector in their early years in college. Mountford, Jones & Tucker (2009) found out that reflector (26%) was the most frequently preferred learning styles of entry-level physiotherapy students. In which, they combine reviewing and thinking skills, rather than experiencing or planning skills. Moreover, Guraya,

Habib, Guraya & Khoshhal (2014) found out that medical students in Taibah University are reflectors. Being reflexive tends to respond through assimilation and analysis, with a focus on divergent thinking. They adopt the position of observers, analyzing their experiences from different points of view. They are then cautious in observing all the implications of any action before they act. (Pellón, Nome & Arán, 2013)

Meanwhile, third year students were pragmatist while fourth years are both activist and theorist. Interestingly, it could be construed that allied health students want to test their reflections in their younger years in the real world. That led them to conceptualize their ideas on real grounds once they enter third year. They have the capacity to put learning into practice in a real situation. However, ideas and recreations can inhibit learning unless they can find an approach to put the concepts practically in their lives. Learning can be better if critical thinking and creativity be applied. Case studies, problem-solving and discussion are the best activity to be used for they are essentially practical; ask open-ended questions in discussions and meetings, and always on the lookout for the best solution of the problems. (Mobbs, 2010) Furthermore, 4th year students show a clear combination of activist and theorist as the preferred duo learning styles. Majority of them learn by innovation, being futuristic leads them to think and find realities. Their learning is an intertwining of both the concrete and the abstract. It implies that in higher years, learners learn both when both theories and advance practice are equally emphasized. It is due to more exposure to clinical areas - hospital or community in the practical setting where the focus changes from didactic learning to practicality. One thing, a reduced amount of lecture time and encouragement by trainers to develop self-learning skills are probable reasons. (Samarakoon, Fernando & Rodrigo, 2013) Lastly, in a longitudinal study, medical students' learning styles can be altered as they progress. (Seyal & Rahman, 2015) They try to adapt a student-centered curriculum-based in the problem-solving model of education. This showed how important the learning styles of learners in designing a guide on how they would be educated. Lastly, from the result of interview after transcription and coding, the three identified themes are planning, *experiencing* and *concluding*. These themes perfectly justifies the three most common demonstrated learning styles by the allied health students.

The integrative caring-based learning guide for interprofessional health education and collaborative practice

Learning requires innovation based on the trend and what are the needs of the learners. It is due to changes in some aspects of life that occurs in our lives. Proper identification of the learning styles of learners can contribute to academic achievement students. (Scott, Rodríguez, & Soria, 2014) Further, by examining students' learning styles, teachers can be able to identify the best strategy for them to use that will improve the teaching-learning process. (Mak, Chang, Hsia, Chan & Yu, 2014) For the learners, it is vital to identify their preferred learning styles for them to apply the best strategies to learn better and guide their cognition properly. (Cheng, 2014) Thus, preferred learning styles of learners is essential for any mismatch between teaching and students' learning styles will cost a lot (Laine, Myllymäki, & Hakala, 2015).

On the other way around, collaboration is essential for healthcare professionals in the care of an adult patient to attain the optimum level of health needs. With this, interprofessional learning among allied to health academic programs is necessary. Thus, it raised to the development of this integrative caring-based learning guide designed for interprofessional health education and collaborative practice. The learning guide composed of three parts that were based on the format as per CHED Memorandum Order (CMO) No. 15 (2017) namely Course Description, Course Outcome, and the Course content. The course description summarizes the learning on IPHE and collaborative practice in the care of an adult patient. While the course outcome outlined the result of learning that can be reliably demonstrated or applied after discussions of all concepts in the care of adult patient. The content of the developed integrative caring-based learning guide are as follows:

- I. Description of the course:** This course is focused on the application of concepts, principles, theories, and methods of interprofessional collaborative practice in the care of an adult patient including the ethico-moral, legal and professional caring responsibilities of collaborating health professionals. The

students are guided for efficiency and competency-based on the interprofessional collaborative core competencies in the care of an adult patient.

- II. Course Outcome:** Given a scenario in the care of an adult patient, the students must have:
1. integrated the knowledge, skills, abilities, and experiences of each profession in the care of an adult patient;
 2. demonstrated respect and appreciation to roles/responsibilities and expertise of each health profession;
 3. worked in cooperation with honesty and integrity to develop trusting relationships with patients, families, and other health team members in the care of an adult patient;
 4. applied a team-based competencies and leadership practices that support collaboration and team effectiveness in the care of an adult patient;
 5. demonstrated an effective communication techniques; and
 6. used an effective tools in facilitating discussions and interactions that enhance team function and quality in the care of an adult patient.

Furthermore, table 2, presented the course content and the learning guide. The learning objectives projected how the course content be understood or acquired based on the three major areas of educational activities (Cognitive or Knowledge; Psychomotor or Skills; and Affective or Attitude). The responses of allied health professionals during interviews were subjected to themes identification and contextualization, and transformed into the course content that were patterned with the core competencies of interprofessional collaborative practice. (Education Collaborative, 2016) Moreover, the results of the survey on learning styles of allied health students and their lived experiences in the classroom were transformed as the learning strategies and assessment tasks considering the Kolb’s experiential learning cycle as the guide.

Meanwhile, the identified learning strategies and assessment of the learning guide corroborate with different studies. Steffen, Zeiss, and Karel (2014) noted that discussion-based activities with learners from various health professions can be an effective mechanism for delivering interprofessional education focused on knowledge and attitudes. Moreover, some argued that interprofessional education should occur early in the education and training sequence for all healthcare students. (Carter Center Mental Health Program, 2011)

Table 2: The course content and learning guide of the integrative caring based - learning guide for interprofessional health education and collaborative practice

II. Course content and learning guide				
Learning outcomes	Content	Learning Strategies		Assessment
		Classroom	RLE	
At the end of discussion, the students must have: <ol style="list-style-type: none"> 1. identified key principles that facilitated an effective interprofessional collaborative patient’s care; 2. demonstrated understanding and respect on values and beliefs of the health professions; and 3. developed the ability to represent one’s profession effectively to the patients and colleagues adequately 	I. Ethics of caring for Interprofessional Collaborative Practice: <ol style="list-style-type: none"> 1. Principles of caring practices of health professionals 2. Dignity, privacy, and confidentiality 3. Rights of patients and health workers 	Interactive Discussion	Group work opportunities in the simulation laboratory	Brainstorming Role-play Rubrics for case analysis Post-test

<p>Given a scenario in the care of an adult patient, the students must have:</p> <ol style="list-style-type: none"> 1. described and demonstrate own's role as a health professional within a multidisciplinary team in a patient-centered care; 2. enhance one's understanding and develop the ability to represent one's profession to patients and colleagues effectively; and 3. appraised the relationship between professions and its background, and roles of other healthcare professionals 	<p>II. The scope of professional practice or roles and responsibilities</p> <ol style="list-style-type: none"> 1. Healthcare assessment 2. Promotion of patient's safety 3. Health Teaching 4. Evaluation and Follow-up 	<p>Problem-based Learning</p>	<p>Virtual simulation on collaborative adult patient care.</p> <p>Actual exposure in a clinical scenario in the care of the adult patient</p>	<p>Rubrics for case analysis Problem-solving Post-test</p>
<p>Given a scenario in the care of an adult patient, students must have:</p> <ol style="list-style-type: none"> 1. identified and recognized the importance of effective communication skills that will facilitate effective interprofessional collaborative patient's care; 2. demonstrated effective communication skills with students, colleagues and team members of different health professions/disciplines, patients and families; and 3. appraised the effect of interprofessional communication among healthcare team 	<p>III. Interprofessional Communication in the collaborative care of an adult patient thru:</p> <ol style="list-style-type: none"> 1. Communication techniques 2. Interprofessional relationship in caring patients 	<p>Communication and virtual learning</p>	<p>Group work opportunities in the simulation laboratory</p> <p>Actual exposure in a clinical scenario in the care of the adult patient</p>	<p>Role-play Rubrics for Case analysis Post-test</p>
<p>Given a scenario in the care of an adult patient, students must have:</p> <ol style="list-style-type: none"> 1. identified the benefits and constraints of interprofessional collaborative patient's care; 2. recognized the importance of interprofessional collaborative teamwork including interprofessional team dynamics, communication skills and conflict resolution within the context of a well-functioning team; and 3. evaluated one's ability to work effectively within a multidisciplinary team 	<p>IV. Collaborative patient care or Teamwork</p> <ol style="list-style-type: none"> 1. Health care management (Physiologic, psychosocial and spiritual) 2. Health teaching for the continuity of care 	<p>Problem-based Learning</p>	<p>Virtual simulation on collaborative adult patient care.</p> <p>Actual exposure in a clinical scenario in the care of the adult patient</p>	<p>Rubrics for Case analysis Problem-solving Post-test</p>

On the other way around, Abu-Rish and colleagues (2012) determined that the most common IPE strategies are small group discussion, problem-based learning, large group lectures, reflective exercises, clinical teaching and direct interaction with patients. Furthermore, the learning occurred most frequently between two or three professional students, though occasionally more. Small group discussion allows more interaction and team building than a didactic approach of learning. Simulation-based learning is being

adopted more often and is likely to become more integral to IPE. One thing, research demonstrates that learners find value in IPE and they develop and acquire collaborative knowledge and skills. (Reeves et al., 2015)

Conclusion

From the findings of this study, learning styles of allied health students are essential elements in developing an integrative caring-based learning guide for interprofessional health education and collaborative practice. Therefore, it is necessary to identify and understand the common learning styles of learners. This will serve as a guide to instructors in identifying pedagogical strategies or methods of teaching that will enhance the teaching and learning process that is vital to the academic performance of learners.

Recommendations

1. The Commission on Higher Education (CHED) should advocate IPHE to foster collaborative practice as part of allied health academic programs;
2. Higher Education Institutions (HEIs) should adapt and pilot test the developed integrative caring-based learning guide as a model for enhancing allied health or health sciences academic programs;
3. Educators should consider the learning styles and study habits of learners as indicators in determining the most effective strategy that contributes to the performance of a student's academic success;
4. Students should understand their learning styles and study habits and realize how these can help them enhance their academic performance;
5. Other fields of education can utilize the results of this study in enhancing their curriculum;
6. Research enthusiasts can conduct a similar study in other areas or fields in education to widen the scope and broaden the application of interprofessional education.

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