Original Article

Access this article online

Quick Response Code:

Website: www.pjiap.org

DOI: 10.4103/PJIAP.PJIAP_49_18

Students' perception of vertically integrated learning approach in physiotherapy education: An exploratory case study

Kavitha Raja, Jakson K. Joseph[1], Jerin Mathew

Abstract:

CONTEXT: The provision of advanced learning experience for physiotherapy students depends on the effective learning strategies adopted by the institution according to the existing needs of the society, developments in scientific technology, and current trends in educational field (Bandiera *et al.*, p. 381-7). The major factor that impacts the capacity of physiotherapists to be active agents in leading their future is the nature of the educational contexts evolving in international health care system. Globally, there have been many innovations in teaching and learning methods of physiotherapy, which includes self-directed learning, problem-based learning, evidence-based learning, and integrated learning (IL). The perceived importance of each subject in physiotherapy may differ among teachers and students tend to echo their opinions.

AIMS: The aim of this study was to understand physiotherapy students' perception of vertically IL approach.

SETTINGS AND DESIGN: Institutional setting and qualitative research design.

SUBJECTS AND METHODS: A qualitative methodology using focused group discussion (FGD) was done with five students from each class were involved in individual FGD.

DATA ANALYSIS USED: Descriptive statistics were used.

RESULTS: Results are represented as codes and themes.

INFERENCES: In the current study, our students showed a positive attitude toward IL seminars. They felt that the program helped them to create a meaningful connection between basic science and clinical subjects.

Keywords:

Applied learning, competency-based education, health education, horizontal integration, integrated learning

Introduction

Globally, there have been many innovations in teaching and learning methods of physiotherapy, which includes self-directed learning, problem-based learning, evidence-based learning, and integrated learning (IL). IL is defined as "the organization of subjects to interrelate each other or to create a link between subjects, which are taught in separate academic sessions or year."[1] Most physiotherapy colleges in India follow the traditional method of knowledge delivery with a high degree of compartmentalization of subjects into preclinical and clinical disciplines. The perceived importance of each subject in physiotherapy may differ among teachers and students tend to echo their opinions. This could be the reason why the students

Department of Basic Sciences, JSS College of Physiotherapy, Mysore, Karnataka, India, [1]ATP Medical, Jabriya, Kuwait

Address for correspondence:
Dr. Jerin Mathew, School of Physiotherapy, University of Otago, New Zealand.
E-mail: jerinmathew65@gmail.com

Submission: 14-12-2018
Accepted: 25-03-2019

How to cite this article: Raja K, Joseph JK, Mathew J. Students' perception of vertically integrated learning approach in physiotherapy education: An exploratory case study. Physiother - J Indian Assoc Physiother 2019;13:48-51.

mention "I like this subject" or "don't think this subject is important."

Moreover, developments in scientific technology and current trends in education must be reflected in the curriculum. Effect of the strengths adopted by the institution must, in turn, fulfill the varied expectation of students.

IL aims at creating a bridge between subjects taught in various academic years, which include both basic sciences and clinical subjects to provide a better learning opportunity for the students. Moreover, this approach tends to improve skills that support students toward meaningful clinical practice.

IL is described as both horizontal and vertical. Horizontal integration is the process, where links are created between subjects taught in one particular academic year. For example, in the first academic year of physiotherapy, the learning experience is made more holistic in nature by creating a link between subjects such as anatomy, physiology, biomechanics, and humanities.

In vertical integration (VI), there is a combination of basic sciences and clinical subjects. VI is considered as a key factor in physiotherapy education, as it bridges the gap between preclinical and clinical subjects.[2] Thus, basic science is represented throughout the course irrespective of the academic year. The bidirectional benefits of VI are that a preclinical student understands why they are studying basic subjects and how it can be applied in their clinical practice, whereas a clinical subject student will be able to recall their basic science knowledge and be successful in clinical practice. Considering an example of basic physics, a 1st-year student can have a better understanding of the application of the principles of lever system in human movement dysfunction, and a final year student will have a better idea about advances in biomechanical concepts of it.

Some of the best physiotherapy colleges in the USA, Australia, Canada, and the UK are following self-directed learning methods such as IL from many decades with an objective of creating independent lifelong learners.[1] However, in India, it is still in its infancy. It has been noticed that the trend of Indian physiotherapy students getting admission through merit scholarship to pursue higher education in global best universities have comedown.[3] Students who apply to foreign universities are not meeting the required credentials perhaps also because of inadequate competency-based education. Active learning strategies such as IL approach will undoubtedly contribute to improving education of future scholars.

Our college has implemented vertical learning academic sessions from the past 2 years. The college follows the compartmentalized curriculum developed by the University of its affiliation. Initially, the curriculum delivery in our college was through a nonintegrated, discipline-based manner. The basic and clinical science departments taught their subjects through didactic sessions, and the teachers gave informal inputs to students during the presentation of their seminars and clinical practice without a structured practice of integration.

The newly introduced sessions included combined academic seminars by undergraduate and postgraduate students and were moderated by teaching faculty. The topics for presentations were predecided based on the topics involved in the curriculum of the university and clinical needs. The topics were published in the students' handbook. For each presentation, the topics were divided and allocated to two students from each undergraduate to postgraduate years and were moderated by subject teachers [Table 1].

The seminars were held on alternate Saturdays for 4 h, where the last 30 min was open for questions and discussions from the audience, which involved undergraduate students, interns, postgraduate students, and all the physiotherapy teaching staffs of various departments. In addition, they were encouraged to share their own views and experiences pertaining to the topic.

Although the system of IL was introduced for two academic sessions, its impact is not clear. For this, it

Table 1: Example of division of topic

Topic: Principles of lever system and its application in clinical practice	
Year	**Key content**
1st-year UG	What is lever system?
	What are the types of lever system?
	Examples of mechanical levers
	What is mechanical advantage?
2nd-year UG	Examples of lever system in the human body
	Usefulness of lever system on exercise therapy
	Description of short-lever and long-lever movements
	Force distribution during various types of lever system in the human body
3rd-year UG	Application of basic principles of lever system in orthopedic and sports rehabilitation
	Rationale behind selection of long- and short-lever exercises during rehabilitation with a case scenario
4th-year UG	Application of basic principles of lever system in neurological rehabilitation
	Rationale behind selection of long- and short-lever exercises for neurological rehabilitation with a case scenario
Postgraduate	Advances in knowledge of the principles of lever system in rehabilitation

is essential to obtain feedback about it from students. Thus, this study aimed at analyzing students' perception toward vertical IL method.

Subjects and Methods

A qualitative methodology using focused group discussion (FGD).

Five students from each class were involved in individual FGD. FGD was conducted in a closed room by the investigator. Initially, the moderator made an introduction of the topic in an interesting and generic way. Some general rules were set before the initiation of the discussion session, such as only one person should speak at a time, everybody should participate, and lateral conversations are not allowed. Furthermore, participants were informed that the information will be confidential. There was low-level involvement of the moderator, which has helped to evaluate participant's interest and provided freedom to express their observations about IL. The predetermined themes consist of students' acceptance, adherence, perception of benefits, and feasibility of IL sessions. Students were encouraged to express their opinions. All the interviews were recorded and transcribed. The quality of voice recording was ensured immediately after the session. Two observers from senior faculty were assigned to develop final codes and themes. The transcripts were analyzed by the first observer to extract codes and themes. All extracted codes and themes along with recording were given to the second observer to ensure all the necessary contents have been transcribed in a meaningful way.

Results

Results are represented as codes and themes.

The detailed reports of the question, theme, and codes are shown in Table 2.

Table 2: Detailed reports of the question, theme, and codes

Codes	Theme
Yes we need these kinds of IL sessions in our curriculum	Acceptance of IL sessions
We are happy that college has implemented IL sessions	
We want this system to be continued	
Good perception of learning environment	
Enjoyable learning experience	
Able to express views more freely than traditional method	
It allows more flexibility than traditional learning	
Building on prior knowledge and experience	
Ok for few sessions not for all	
We all are happy to attend IL sessions	Adherence to the sessions
Except on emergency reasons, we try to attend sessions regularly	
Improved motivation and satisfaction in learning	Perceived benefits
We understand all our subjects are equally important	
Learning reinforced and deep learning	
It was like a revision about basic science	
Healthy way of sharing knowledge	
Improved understanding of relationship between basic and clinical subjects	
We felt more confidence in clinical postings as we already know about some conditions through IL sessions	
Promote cooperation between students and their coordinators	
Basic science students could get a deeper idea on application of knowledge of their subjects in clinical practice	
It has helped us to perform well in final examinations	
It was not useful to improve our academic performance	
Divisions of topics were too many and felt difficulty to follow	Problems identified
Some presenters were not making sessions interesting	
Too many presenters are causing confusion	
Few teachers were not able to guide to meet the objectives of IL session	
Some topics were having intrasession repetition	
Need sessions at least once in a week	Suggestions
Need more videos and pictures in presentation	
Only interested candidate should present	
Need to be well structured	
Pre- and post-session evaluation to be done to assess change in the level of knowledge	

IL=Integrated learning

Discussion

In India, much of the physiotherapy education programs continue to be traditional with predesigned didactics and practical classes, which are delivered through a teacher-centered learning environment. The future scope of physiotherapy, which is the combination of art and science by itself, is ill addressed by the quality of our education system. This discourages us to face challenges in health care on par with global standards.

In our college, there were conflicts among faculty and students in acceptance of IL sessions, but after repeated discussions, it was streamlined to a satisfactory level. Most of the students appreciated the IL sessions more than class-based didactic lecturers. Some students reported that they understood the topic better through IL than theory classes. The regular didactical lectures were meant to provide an abstract framework for the scholars rather as a way of delivering realistic data. Moreover, the student-centered nature of IL approach helped the system to be more acceptable among students.

Additional report by students stated that the program made an attempt to make students understand the basic science information in the context of clinical situation through IL approach. The current basic qualification required to pursue bachelor degree of physiotherapy in India is 12 years of education in high school. The syllabus is well balanced with physical and biological science information. Students with this background, who eagerly enroll for physiotherapy profession, lose their interest in basic sciences, as there is no patient contact in learning process during the initial years. This can contribute to the high attrition rate of students in the first 2 years of the curriculum. We believe this phenomenon can be minimized with integrated system of teaching. Moreover, the program brought a coordinated and committed approach among students and teachers of basic science and clinical science departments, which will further assist in learning.

Benefits of studying subjects such as biochemistry, pharmacology sociology, and psychology as a part of basic science were always questioned by our students as many of them felt that it need not be a major subject in physiotherapy profession. Certainly, these subject teachers were also less aware of the application of these subjects in rehabilitation. As a result of integrated approach, it was noticed that there is less distancing of these subjects by students and faculty.

Improvement in motivation and confidence and activation of prior knowledge creating meaningful connection among subject area are the other outcomes of IL that has been reported by our students. Many researchers conjointly recommend that an integrated approach in physiotherapy education facilitates contextual and applied learning and might promote the development of well-organized knowledge and skills that underlie effective clinical reasoning. Man (2002) suggests that existing knowledge may be an essential basis of learning and new learning happens most effectively once it's connected to prior knowledge. For connections to be most effective, prior knowledge and skills must be activated.[4] This activation can happen through IL methods as it gives freedom to think beyond the limits of classroom lectures.

There was a mixed response about the role of IL in academic performance. Their response was more of speculations, as there was no analysis done to find change in knowledge after each IL sessions. Use of pre- and post-session knowledge analyzing questionnaire can give quantitative information about the contribution of IL in change of knowledge. This is a future aim.

The other drawbacks identified were the confusion caused due to multiple subdivisions of one topic. The reason behind this could be due to overlapping of information between presenters. We believe this can be eradicated through mock sessions in front of area experts before the final presentation. Students also suggested that the IL session might be more interesting with inclusion of more videos and pictures. Audiovisual aids can help audience to understand and remember the content of presentation, and it helps them to be an active learner by providing more information. These opinions will be helpful in designing sessions for future presentation.

The IL sessions were perceived to be useful by majority of the students interviewed. The findings suggested that this kind of advanced learning approach increases healthy interaction between students and teachers and also among various departments. In India, the academic curriculum is designed by universities, and it may not be practically possible to involve IL method in syllabus. However, we suggest that the individual college has to use the autonomy in curriculum delivery, where they can incorporate various advanced learning methods such as IL.

Inferences

In the current study, our students showed a positive attitude toward IL seminars. They felt that the program helped them to create a meaningful connection between basic science and clinical subjects. Future studies have to concentrate on change in the level of knowledge through integrated approach, which can contribute to academic performance and professional growth.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

References

1. Bandiera G, Boucher A, Neville A, Kuper A, Hodges B. Integration and timing of basic and clinical sciences education. Med Teach 2013;35:381-7.
2. Kate MS, Kulkarni UJ, Supe A, Deshmukh YA. Introducing integrated teaching in undergraduate medical curriculum. Int J Pharm Sci Res 2010;1:18-22.
3. Brauer DG, Ferguson KJ. The integrated curriculum in medical education: AMEE guide no 96. Med Teach 2015;37:312-22.
4. Ghosh S, Pandya HV. Implementation of integrated learning program in neurosciences during first year of traditional medical course: Perception of students and faculty. BMC Med Educ 2008;8:44.