

## Assessing study approach in postgraduate physiotherapy students

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### Abstract

**Introduction:** Study approach is a concept about students' motivation on learning and the use of appropriate strategies. The different approaches of learning are superficial approach and a deep approach. Examination of students' study approaches has been a growing area of research in higher education to help identify students' strengths and weaknesses. It also provides teachers guidance for review, development of curriculum and teaching methodologies, most likely to support appropriate learning. Students in general, are expected to develop deep learning approach by adopting a deeper level processing, higher levels of critical thinking, and greater ability to engage in self-regulated learning. It becomes more important to know the approach used by postgraduate students, as they will be specializing in a particular subject. Therefore, the objective of this research was to assess the study motives and strategies adopted by postgraduate physiotherapy students.

**Materials and Methods:** John Bigg's Revised Two Factor Study Process Questionnaire (R-SPQ-2F) was administered to 40 postgraduate physiotherapy students. Questionnaire has two approaches: deep approach and superficial approach, each containing two subscales: motives and strategy.

**Results:** The mean scores of the deep approach were higher than superficial approach. The data analysis showed that physiotherapy postgraduate students significantly adopted deep approach ( $p < 0.000$ ). They were found to have deep motives and strategies compared to that of superficial.

**Conclusion:** Our findings indicate that postgraduate physiotherapy students prefer a deep study approach with deep motives and strategies.

**Keyword:** Study Approach, R-SPQ-2F, Motives, Strategies, Physiotherapy, Postgraduate students.

### Introduction

Learning approaches can be defined as the characteristic cognitive, affective and psychosocial behaviors that serve as relatively stable indicators of how learners perceive, interact with and respond to the learning environment. They involve educational methods that allow individuals to most effectively learn.<sup>1</sup> It may be goal-oriented and may be aided by motivation. Learning approaches are the strategies which learners adopt in order to succeed at learning. The term 'approach' is used to signify both the learner's intention and the way in which a student process information.<sup>2</sup> Thus approach to learning involves both motives as well as strategies. It is usually assumed that these motives and strategies arise both out of a variety of personal characteristics and out of exposure to particular situational requirements, such as course contents, methods of teaching and examining, career opportunities, etc.<sup>2,3</sup> The strategies become most successful when these are implemented in a learning system where strengths are recognized, nurtured and developed. Study approach is the process of acquiring knowledge and skills through receiving instruction, self-studying and experiencing.<sup>4</sup> This process of study approach affects learning outcome. Two different processing levels of learning, namely deep and surface were identified as main study approaches.<sup>5</sup> The deep approach encompasses the relationship between investigated meanings in the matter being studied and

relating it to other experiences and ideas with a critical thinking. Students taking a deep approach attempt to understand the material by studying and to find the principles. They try to relate new material to that learned previously and wherever possible to apply their new found knowledge. They define their own learning goals and pursue them in their own way and are likely to achieve good learning outcomes especially in the subjects that interest them. In contrast, the surface approach can be considered as a way of learning by rote, relying on memorization and in isolation from other ideas.<sup>6</sup> Those taking a surface approach are extrinsically motivated, i.e. they learn with the aim of passing examinations and often try to rote learn material or memorise what they think are important facts regardless of whether such strategies are appropriate. They do not tend to associate learning with understanding and they tend not to relate personally to the learning tasks which offers little in application of information in the long term. A surface approach tends to result in poor learning outcomes. These approaches reflect the quality of teaching and learning environment.

Examination of students' study approaches has been a growing area of research in higher education since Marton and Saljo described qualitative differences in the way students' conceptualise learning.<sup>7</sup> The primary aim of researchers and education experts is to promote learning, especially within academic settings.

Students in general, are expected to develop deep learning approach by adopting a deeper level processing, higher levels of critical thinking and more ability to engage in self-regulated learning. It becomes more important to know the approach used by postgraduate students as they will be specializing in a particular subject. This requires use of deep approach to understand important concepts. Physiotherapy students are expected to assess, diagnose and make a treatment plan for patients. Nature of their program is such that they are expected to have more positive attitude for developing deep approach of learning, which enhances creative thinking and supports practical methods. In this regard, education researchers utilized qualitative methods to assess students' experience of learning and their individual approaches to tackle the tasks of their study course. A number of different tools have been developed to assess students' approaches to learning. For instance, the Study Process Questionnaire (SPQ) developed for evaluating teaching and learning environment. In its original theoretical framework by Biggs in 1987, it encompasses three approaches to learning (surface, deep and achieving) each with a motive and strategy subscale.<sup>8</sup> It has been used by a number of cross-cultural studies investigating students' approaches to learning in various countries worldwide. In another way, a number of studies indicate that a two factor model with deep and surface approaches has the best fit, rather than the initial three factor solution. Preference for the Revised Two Factor Study Process Questionnaire (R-SPQ-2F) was due to its good reliability coefficients and it being a better fit.<sup>3,9</sup>

Relatively little research attention has been given to the measuring physiotherapy students' study approach. Examination of students' study approaches not only helps identifying students' strengths and weaknesses but also provides teachers with guidance for review, development of curriculum and teaching methodologies to most likely support appropriate learning. Hence the objective of this research was to assess the study motives and strategies adopted by postgraduate physiotherapy students.

## Material and Methods

**Participants:** Institutional Research Review Committee had approved the study. Written and signed informed consent was obtained from all participants' prior commencement of the study. This study was a cross-sectional study. 50 postgraduate physiotherapy students were selected.

### Study design

Revised Two-Factor Study Process Questionnaire (R-SPQ-2F) developed by Biggs et al., (2001) were used for data collection to measure the students learning approach. On this instrument, each approach can be further broken down into two components, namely

'learning motive' (which refers to why students learn) and 'learning strategy' (which refers to how they learn). The psychometric properties (validity and reliability) of the R-SPQ-2F were verified by Biggs, Kember and Leung (2001). Other research studies have provided supporting evidence pertaining to the validation of the R-SPQ-2F and its effectiveness in evaluating the students learning approaches.<sup>9</sup>

R-SPQ-2F comprises of 20 items representing two main scales: Deep Approach (DA) and Surface Approach (SA), with four subscales, Deep Motive (DM), Deep Strategy (DS), Surface Motive (SM), and Surface Strategy (SS). Each subscale has 5 items and each item is rated on a 5-point Likert scale ranging from 'always true of me' to 'only rarely true of me'. Students were asked to choose the most appropriate response. The questions were randomly divided into deep approach and surface approach but respondents were unaware of such division. Among 50 postgraduate students, 46 have completed the John Biggs revised two-factor study process questionnaire.

### Data Analysis

Data were analyzed using the Statistical Package for Social Sciences (SPSS 16.0 version). Analysis consisted of means, standard deviations and Students paired t-test was used to compare the learning approaches.

## Results

**Table 1: Mean and standard deviations of scales of R-SPQ-2F questionnaire**

Scales	Mean	SD ( $\pm$ )
DA	31.72	6.540
SA	19.06	5.264
DM	16.06	3.891
DS	15.67	3.330
SM	9.06	3.372
SS	10.00	2.859

DA = deep approach; DM= deep motive; DS= deep strategy;

SA = surface approach; SM= surface motive; SS= surface strategy (n=46)

**Table 2: Comparison between deep approach and superficial approach**

Scales	p-value
DA vs SA	0.000*
DM vs SM	0.000*
DS vs SS	0.000*

\* Significant difference

DA= deep approach; DM= deep motive; DS= deep strategy;

SA= surface approach; SM= surface motive; SS= surface strategy

Table 1 represents mean values and standard deviations of main scales and subscales.

Students paired t-test was used to compare the learning approaches. As shown in Table 2, there is statistically significant ( $p < 0.001$ ) difference between DA and its DM and DS subscales with respect to SA, SM and SS subscales respectively.

The data analysis showed that physiotherapy postgraduate students significantly adopted deep approach ( $p < 0.000$ ). They were found to have deep motives and strategies compared to that of superficial.

## Discussion

The present study investigates into the approaches of learning in postgraduate physiotherapy students using the R-SPQ-2F reveals that students significantly have a deep approach towards their learning.

The students achieved high mean scores on the deep approach's main scale and subscales. On the contrary, they were reported with low mean scores on the surface approach's main scale and subscales. They have deep motives and strategies which allow them to develop knowledge and skill oriented attitude. The high scores on the deep learning approach in the present study could be derived from students' high motivation. As previously reported by Al Rukban *et al.*, student's learning process could be affected by the context and environment in which it takes place.<sup>10</sup> Hence, this general tendency amongst post graduate students towards deep learning approach could be justified by some related factors. Innovative information technologies and evidence based practice with good patient exposure influences students' learning approaches. Consistent clinical case presentations and discussions which is the part of their curriculum, stimulates effective clinical reasoning instead of just memorization of textbook facts. It is a good indication concerning the study curriculum and teaching method perfection.

As a postgraduate physiotherapy student, decision making for patient diagnosis and treatment should be accurate requiring detailed knowledge and thus deep study approach. Our findings support the claims by previous researchers that future career goals and achievement motives are of great importance in motivating adult learners to adopt a deep learning approach.<sup>11</sup> In addition, it is accepted that a deep approach will contribute positively to learning outcomes.<sup>12</sup> According to Felder and Brent (2005), the goal of instruction is to induce students to adopt a deep approach to the subjects important for their professional or personal development.<sup>13</sup> Physicians with a 'deep approach' (DA) to learning are more likely to be life-long learners and have a greater tendency to pursue

additional postgraduate academic training than those who adopt a 'surface approach' (SA).<sup>14-16</sup>

On perspective learning, Joita stated that, there is a landmark in deep learning approach; for developing capacities of understanding, critical interpreting, skills to solve real-life situations, it must be emphasized more practical side of activities with students, to create the conditions necessary for them to learn how to learn, valuing the experience by analyzing concrete examples, by putting in situations, by encouraging the formulation of hypotheses, solutions and value judgments.<sup>17</sup> In a review study by Dolmans *et al.*, it demonstrated that eleven of the 21 the studies give indications that problem based learning does encourage a deep approach to learning and it had no effect on a surface approach.<sup>18</sup> Also Scouller and Jensen *et al.*, stated that students were more likely to employ a deep approach when studying for assignment essays, which they perceived as measuring higher levels of cognitive processing, compared to a multiple choice assessment.<sup>19,20</sup>

The students' study approaches are conceived as forming part of total education system and hence the teaching and learning strategies are effective source for teachers and students for focusing on improved academic achievements and striving to meet the new academic standards.

## Conclusion

The study concludes that postgraduate physiotherapy students preferred a deep study approach with deep motives and strategies than superficial approach.

## Limitations

The present study findings can be limited because of its sample size and the type of its subjects belonging to the physiotherapy program of one university.

## Conflict of Interest

Authors report no conflict of interest.

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