

Relationship of Students Approaches to Studying and Teachers Approaches to Teaching at Graduate Level in Punjab Pakistan

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Abstract

Higher institutions aim to produce graduates who can implement theoretical knowledge in practical life; they also attempt that students acquire critical thinking and problem solving skills. Educators are constantly in search of teaching strategies to prepare students capable of solving real problems and join the work force. To achieve this university graduates need to be critical thinkers and creative. This research endeavors to describe different approaches employed by the teachers in higher education. Moreover, it attempts to reveal the degree to which information transmission / teacher-focused (ITTF) approach to teaching is linked with a surface approach to studying, and how the student –focused/ conceptual change (CCSF) approach to teaching is related with a deep approach to studying (Trigwell & Prosser, 2004). This report explains different teaching strategies implemented by the teachers. Furthermore, the students' approach determined regarding their learning behaviors. Various research reports have shown relationships between better quality learning results and students' deeper approaches to learning. The link between these two sets of reports is described in this study. The report also highlights the point of improving student learning quality, by encouraging conceptual change/student-focused to teaching.

Keywords: conceptual change/student–focused (CCSF), information transmission/ teacher-focused (ITTF), teaching approaches, study approaches, deep approach, surface approach, strategic approach.

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Introduction

Educators are always in search of teaching strategies to improve the quality of learning. They endeavor to produce students who can solve practical problems and are ready to join the work force. At institutions of higher education, learning and teaching process is one main issue which attracts widespread attention. Several reports are available which describe many ways that affect student learning particularly teaching methods and assessment procedures, (Biggs, 1989, 1994; Ramsden, 1992; Laurillard, 1997; Entwistle, 1998, Trigwell, Prosser & Waterhouse, 1999; Kember, 2000; Entwistle, McCune & Walker, 2001). This study is designed to investigate, at higher education institutions, teachers' approaches to teaching. It will also explore how students are affected by concept building approach for the preparation of future professional life.

There are two vital approaches to teaching. First is information transmission teacher-focused approach (ITTF) and the second is conceptual change student-focused approach (CCSF). Distinction between these approaches is useful for teachers who wish their students to accomplish required results by creating learning environments which are encouraging for students.

A large amount of empirical study on learning and teaching at higher education institutions is available that offer guidance to effective teaching practices. In particular there is remarkable evidence from research that indicates how curriculum design and teaching methods affect autonomous, deep and reflective learning. But still most faculties are largely unaware of these instructional practices. The curriculum designed is not based on research evidence but dominated by tradition. Generally assessment is a part of teaching. The curricula often emphasise content coverage instead of acquisition of life-wide and lifelong learning skills. Beusaert, Segers and Wiltink (2013) stated that majority of university teachers like their students to take deep approach to learning but nevertheless fear that students often adopt surface approach.

In 1976 Marton and Saljo (1976), for the first time, defined approaches to studying as essentially a method of handling a task, with the aim of achieving a desired outcome. In their early study, a task was designed to read a text for which students adopted basically two different techniques, called "surface approach" and "deep approach". The surface approach resulted generally in low retention of

information and also an inability to use material in new contexts while deep approach to a better understanding- the effect is clear. A strategic (achieving) approach may be implemented alongside deep approach or surface approach; Learning outcomes were good if it was used with deep approach but when it was used with surface approach, it simply made surface approach more effective.

The conceptual change (CCSF) approach normally revealed a better comprehension of material, provided to students, compared with than information transmission (ITTF) approach. (Trigwill and Prosser 2005). When teachers engaged students actively in a supportive and creative environment, students with various approaches concentrated on student-centered features of the class. On the other hand, when traditional teaching methods were exclusively employed, students with different approaches focused on both transmission and reproduction (Ramsdon 1992).

The good news is that if teachers alter the approaches to teaching, it would have impact on the approaches that students take - encourage deep learning approaches and discourage surface learning (Trigwill and Prosser 2005). The study has shown that students' approaches vary depending upon how students perceive their learning environment. Teachers influence students' approaches according to the techniques they use for teaching subjects and courses, in particular the way they carry out assessment.

The research has suggested that teachers' selection of approach to teaching is influenced by the awareness they have regarding their learning and teaching environment. Ramsden (1992) stated that students will adopt surface approach if they perceive the amount of work in the subject/course is high and the nature of the assessment requires memorization and recalling. A student learning is related with the independence of choosing what to be learned, perceptions of the quality of teaching, as well as awareness of standards and the goals required in the subject (Trigwill and Prosser 1991; Trigwill and Prosser 1998).

Economic development and nation building is not possible without the presence of highly qualified professionals who are autonomous, critical thinkers, decision makers and problem solvers. Research on teachers teaching at university can be very useful for improving the quality of university teaching and the learning environment which is direly needed in Pakistan.

This study will be conducted to achieve the following purposes:

- To investigate approaches to teaching generally used at undergraduate level in Pakistani universities.
- To investigate approaches to studying used at undergraduate level in Pakistani in universities.
- To investigate the relationship of teaching approaches to studying approaches at undergraduate level.

Literature Review

Research into teaching and learning at higher educational institutions over the past twenty five years has provided various, methods, findings and concepts that are of both practical relevance and theoretical interest.

Approaches to Teaching at University Level

Study into teachers' approaches to teaching at higher educational institutions was directly modeled on methods, findings and the concepts of research into students' approaches to studying. Trigwell and Prosser (1993) interviewed twenty four teachers teaching chemistry and physics to first year students at university. They established five approaches for the teachers according to their intentions and teaching strategies: some approaches were aimed at transmitting information to students called teacher focused and others were aiming to bring conceptual change in students known as student focused.

A research study by Ramsden and Entwistle (1981) provided a more positive conclusion. They studied students from 2,000 British universities, 66 departments in the humanities, sciences, engineering and social sciences. There was no similar pattern of variation in student studying approaches; however, in all disciplines some departments did encourage adoption of deeper approaches for their students.

Prosser and Trigwell (1993) established Approaches to Teaching Inventory (ATI), which can assess vast numbers of teachers' approaches to teaching. Trigwell, Prosser (1999) determined that the teachers who adopted a CCSF approach built on the ATI scores, their students were likely to adopt a deeper approach to studying. The students, whose teachers adopted ITTF approach, were likely to follow surface approach to studying.

Bertrand and Knapper (1991) applied a partial replication of Ramsden and Entwistle study at Waterloo University (Canada) in three academic departments. Students' studying approaches differed markedly in the projected directions in three departments, and continued over a period. They were also related with aspects of academic climate and teaching identified by (Knapper, 1995). This confirmed Entwistle and Ramsden previous findings. Pascarella and Terenzini (1991) studied the results of 2,600 empirical cases concerning with the influence on student learning and development of higher education. They found student learning is connected to effective teaching.

For a similar course, different teachers choose different approaches for their students. This is due to constitutional characteristics of teachers themselves. Teachers have different personality characteristics, styles of lecturing and styles of thinking. But researchers claim that different approaches to studying are result of different approaches to teaching. In fact interview-based research has revealed several various conceptions of teaching. The study by Kember (1997) revealed that majority of approaches to teaching revolved around five conceptions as shown in the table below.

Table 1

According to Kember (1997), five different conceptions are, teaching as:

1	Transmitting information
2	Imparting structured knowledge
3	Interaction between the teacher and students
4	Assisting understanding of the students
5	Generating intellectual development and conceptual change in the students.

Many investigators think that at higher education teachers' conceptions of teaching change with experience, often from more teacher-centered and content orientated to more student-centered and learning-oriented. But there is little proof from the research that teacher develop conceptions of teaching with the length of time they spend in teaching (Norton, Richardson, Hartley, Newstead, & Mayes, 2005). Another finding from the research shows that formal training has no effect on conceptions of teaching. However Ho (2000) found that teaching development program which was specifically designed to generate conceptual change did produced some promising results.

Conception of Studying in Higher Education

Säljö (1979) in Sweden questioned 90 people at higher educational institutions between the ages of 15 and 73. He asked them what "learning" meant to them. The research concluded five different conceptions.

In a particular context, the conceptions of learning are related to approaches to study adopted by students. This clarifies that why interventions have little effect: students who adopt a recalling conception, through introduction to a content-based curriculum, have difficulty following student-centered curriculum (Newman, 2004). In Netherlands, in 1987 Van Rossum and Taylor questioned 91 arts students from the university. This confirmed Säljö's five conceptions of learning

Table 2

Säljö (1979) concluded five conceptions of studying; 6th by Van Rossum and Schenk (1984). They are learning as:

1	Knowledge Increase
2	Recalling and Memorising
3	Acquirement of facts and procedures
4	Construction of meaning
5	Interpretive methods focused at understanding of truth
6	A conscious procedure aimed to achieve happiness and harmony or directed at changing society.

Given the deep-rooted relation in approaches to study, conceptions of learning, and learning outcomes, as well as the substantial influence of this line of study, it seems sensible to search for parallel related concepts for teaching. Can conceptions of teaching be recognized and do they have any impact on the approach to teaching? Another important question arises whether these have any influence on the approach students follow in their study and do these approaches affect quality of student learning. These questions can be outlined in terms of a model established by (Kember, 1997) included in a recent study into academics' conceptions of teaching. This has been reproduced in Figure 1. The model indicates the impact of academic's conceptions of teaching. It seems reasonable to assume that this will be affected by pressures from department and institution and curriculum design as well as by the learning environment of the students. The research shows that student's predisposition, teaching and learning environment, form of teaching and curriculum in the broadest sense affect approaches to study. This in turn affects the quality of the learning.

Research Methodology

The study will undertake a research on the approaches to teaching of university teachers. A quantitative approach will be implemented in order to present statistical results about the approaches adopted by the university teachers.

Population

Teachers, along with their students, of various universities in Pakistan will comprise the population of this research.

Sample of Study

Teachers of different universities and departments of social sciences and natural sciences were the sample of research. The students of these teachers will be part of this study. The public and private universities will be chosen by purposive sampling. Data were gathered from 120 teachers of 7 Universities in Punjab. 10 students of each teacher total 1200 students were chosen by simple random sampling to collect data for approaches to studying. No prior instructions or training will be given to the participating teachers and students about approaches to study and approaches to teaching.

Instruments

The focus of this research was to identify the approaches to teaching of teachers and students approaches to studying at university level. The investigator will approach both the teachers and the students to collect data because they are the critical source of material about the practices of teaching and approaches to teaching and studying in classroom. Two instruments will be implemented for this purpose as below.

1. There are two approaches to teaching built on literature and theory: one is information transmission teacher-focused (ITTF) approach to teaching and the conceptual change student-focused (CCSF) approach. These are centered on five conceptions of teaching. They are teaching as: transmitting information, Imparting structured knowledge, collaboration between the teacher and students, facilitating understanding of the students, generating intellectual development and conceptual change in the students. Trigwill (2005) ATI-approaches to teaching Inventory provide guideline for the instrument. It will be implemented to gather data from teachers for approaches to teaching. ATI was modified to make it suitable for the users. It was translated into Urdu. Questionnaire was in both languages English on the top and Urdu underneath.
2. A questionnaire for approaches to study is used. The instrument was adapted from the previous studies in ETL (Enhancing Environment of Teaching and Learning) Project of United Kingdom applied in Experiences of Teaching and Learning Questionnaire (ETLQ). It was translated into Urdu. Questionnaire was in both languages English on the top and Urdu underneath.

The questionnaires were piloted first by a small scale study to check the appropriateness and reliability of data. This study will have an important contribution to investigate the approaches to teaching. The outcomes of this type of investigation may present the much needed statistical evidence which is necessary to catch administrative and government support for further future studies.

Analysis

This is basically a fact finding study. The teachers and students were asked to report their perceptions about the facts described in different statements of the questionnaire. Students and Teachers responded to items on 1 - 5 scale (5 high). The sub-scale scores were formed by adding the responses of items in that particular sub-scale. The scores of the two major approaches in ATI were created by adding together the sub-scale scores which contribute to each approach. In the same way ATIS consists of two scales. The results were analysed using SPSS program by computer.

Data was gathered from 120 teachers of 7 Universities in Punjab. 10 students of each teacher totaling to 1200 students were chosen by simple random sampling to collect data for approaches to studying. The teachers filled revised version of Approaches to Teaching Inventory (Trigwill 2005) which was modified according to the context. It contained 32 items. The Cronbach's alpha coefficient is 0.913 for ETLQ, and 0.83 ATI

Results

Teachers approaches to teaching

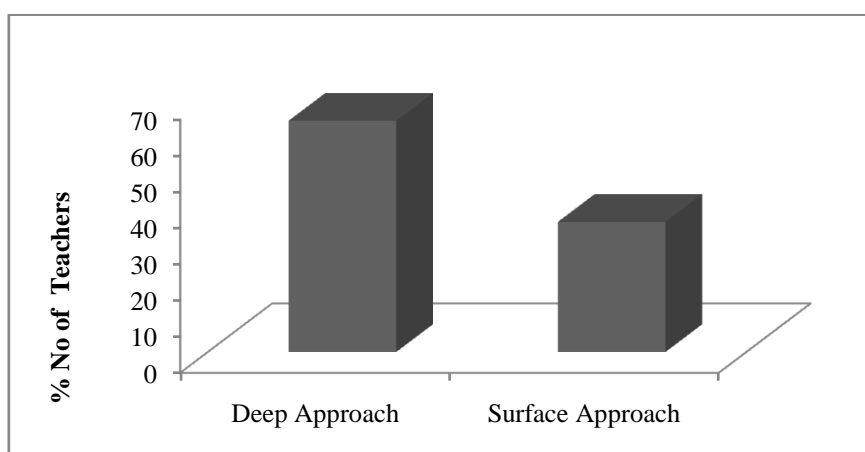


Figure 1 Teacher Approaches to Teaching

The results showed that more teachers 73 (61%) in higher education adopt Conceptual Change –Student Focused (CCSF) approach as compare to teachers 47 (39%) used Information Transmission –Teacher Focused (ITTF) approach.

Table 3*Male and Female CCSF approach to teaching*

Gender	N	Mean	SD	t	df	p
Male	64	3.51	1.01	-.971	118	.33
Female	56	3.70	0.94			

Independent t test revealed that male and female teachers, who use CCSF approaches, do not differ significantly.

Table 4*Male and Female ITTF approach to teaching*

Gender	N	Mean	SD	t	df	p
Male	64	3.40	.1.02	-2.25	112.17	.026*
Female	56	3.70	.95			

Independent t test revealed that male and female teachers who are using ITTF approaches differ significantly, although more female teachers tend to use ITTF approaches.

Table 5*Social Sciences and Pure sciences CCSF approach to teaching*

Course	N	Mean	SD	T	df	p
Social science	56	3.51	1.02	7.18	95.91	.000*
Pure Science	64	3.70	.95			

There is significant difference in pure sciences and social sciences teachers using CCSF approach to teaching. Social sciences score is more on CCSF than Pure science students.

Table 6*Social Sciences and Pure sciences ITTF approach to teaching*

Course	N	Mean	SD	T	df	p
Social science	56	3.04	.84	-6.043	95.45	000*
Pure Science	64	3.70	.58			

There is significant difference in pure sciences and social sciences teachers using ITTF approach to teaching. Pure sciences teachers use more ITTF approach than social science teachers.

Students Approaches to Studying

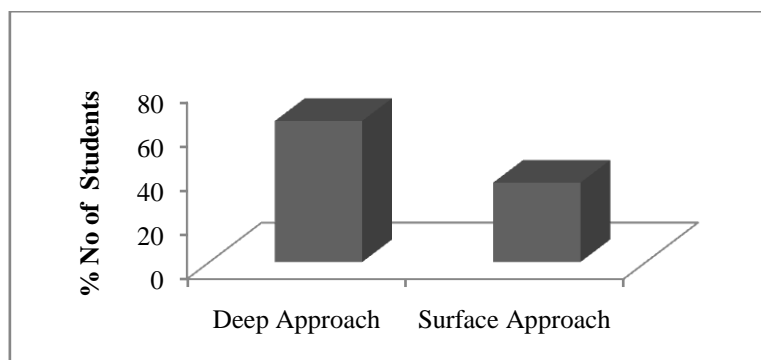


Figure 2 Student Approaches to Studying of CCSF teachers

The data of Students belong to teachers using CCSF approach were analysed for their approaches to studying and it revealed that 484 (64%) students use deep approach while 236(36%) use surface approach.

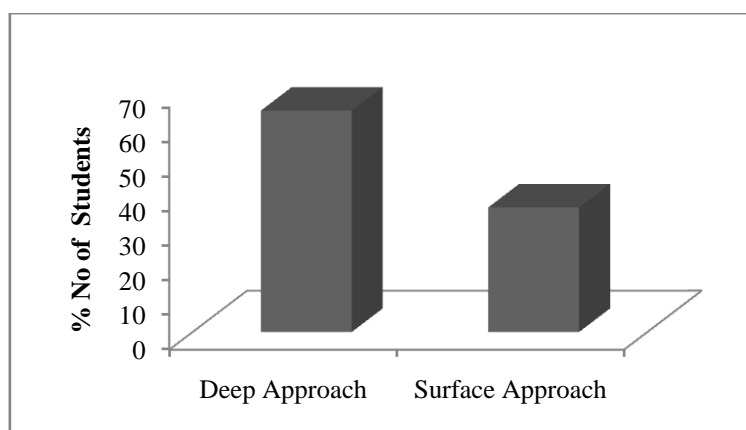


Figure 3 Student Approaches to Studying of ITTF teachers

The data of the students of teachers using ITTF approach were analysed and It was discovered that out of 640 students 280 (44%) students use deep approach to studying and 360 (66%) use surface approach to studying.

The results show that students are more likely to adopt surface approach if their teachers use Information Transmission approach. On the other hand teachers who follow CCSF approach their student tend to use deep approach. This confirms the previous studies by Trigwell, Prosser and Waterhouse (1997), Ramsden (1992), Richardson (2005). Good teaching is one of the factors, as identified by Ramsden, that leads to deeper approach to learning. There is variation in approaches to teaching across disciplines. The teachers of Pure Sciences use ITTF approach more than social sciences teachers. The results are in line with previous study by Trigwell (2002) and Lueddeke (2003). The results show that there is significant difference between approaches to teaching of teachers from social and pure sciences. This result is consistent with the studies of Neumann et al. (2002). Teaching of sciences subjects involve mainly lectures; Teachers have to pass facts which they consider they can only transmit. As a result in pure science discipline teachers have less room for manipulation while in social sciences students have opportunities for discussion, collaborative learning, as it is more about people, therefore they feel independence to make it more student centered.

Concluding Remarks

Teaching strategies affect the study approaches of the students. Student centered approach to teaching can foster critical thinking and problem solving skills. In order to prepare students to face the challenges in practical life, teachers are required to follow teaching approaches and provide the learning opportunities to students that engage them to think critically. Conceptual change/student focused (CCSF) approaches to teaching are more likely to challenge student abilities to think creatively and look for innovative solutions to problems and situations.

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