Analysis of Teachers' Attitude towards Dimensions of Learning during Teaching at Tertiary Level

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ABSTRACT

The research paper focuses on the "Dimensions of Learning", which is actually a research-based framework that provides appealing methodological skills, important for promoting professional development for the implementing teachers that lead to maximize students' learning. The research paper helps to analyze how much of the DOL is being implemented by the teachers knowingly or unknowingly in their classroom teaching to enable the students achieve their academic targets efficiently as well as effectively. The target population for the instant research consisted of teachers and students of the whole province at university level, out of which sample of 50 Teachers and 500 students (50% each gender) were randomly selected from the 10 selected public universities of the province. Moreover 50% of the classrooms observed were of natural sciences and 50% of humanities subjects. Observation checklist was used to observe the teachers and their teaching methodology, duly supported by questionnaire for students. Ordinal regression model was applied in order to assess validity and reliability of the collected data. Major findings show that teachers are least bothered to teach students, keeping in view the psyche and interests of the students. In light of the findings it is recommended that in order to improve the methodology and overall performance of the teachers and maximize learning of the students' needs to be incorporated in all professional development programs

Keywords: Dimensions of Learning, attitude and perception, acquire and integrate knowledge, Declarative and procedural knowledge, habits of minds, self-regulating thinking.

Introduction

Keeping in view the low literacy rate and poor education it was felt by the educationists to work on the causes of the prevailing situation in the field of education. Various studies have been conducted revealing various reasons for the downfall in education. Most of the studies and researches identified flaws in curricula, syllabi, lack of physical and instructional facilities, and off course the reluctance of teachers to adopt modern teaching techniques and methods of teaching. The instant study in an attempt for surfacing a research-based framework of instructional program under the title of Dimensions of Learning laid down by an American educationist Robert Marzano along with his team. Tertiary level is chosen because

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at university level teaching is more or less informal as compared to school level.

Literature Review

According to (Coleman: et al., 2007) one of the major contributing factors towards maximization of learning of the students is classroom environment and the interests of students and teachers. Academic researchers like Hunter, 1994; Rosenshine, 1995; Slavin, 2003 successfully and effectively correlated various aspects of teaching learning process and their impact on maximizing students' achievement of high scores in tests and other exams but one of the major concerns of the community was that the community wants inculcation of desired ethical qualities, good character, mutual respect, self-respect, self-esteem and holistic social development of the students besides securing high scores against the tests (Gallup, 1975, 1980).

The prime objective of education is to inculcate and further improve the competencies and skills of the students (Khalid, 1983). Silberman in 1970 worked on four attitudes of the teachers. These include Attachment, Concern, Indifference and Rejection. These four attitudes play key role in providing students a friendly classroom environment and making classroom tasks interesting. "Conducive environment and interesting classroom tasks maximize students achievements"(Bernard, 1972). (Rosenshine, 1995) concluded that direct or explicit instruction produce positive impact thus maximizing students learning which was proved by students' high scores against standardized tests.

Learning Models

In 1980s numerous educationists worked out frameworks and models of teaching learning process linked with growing test scores (Cruickshank 1985; Proctor 1984; Squires, Huitt, Segars, 1983). These educationists also tried to link up teaching learning process with the factors affecting the overall school achievements. Some of these models also focused on the effective and efficient teachers' practices (Hunter, 1994; Rosenshine, 1995; Slavin, 2003).

Gage and Berliner learning model: Gage and Berliner in 1992 worked on instructional processes and evolved a learning model based on their findings.

Dimensions of learning

What the teachers do not know is the holistic and complete research-based framework under the title called the "Dimensions of Learning" that very skillfully accommodate five aspects of learning.

The two of them which do not directly associated with the content knowledge are :

I. Attitude and Perception of the teachers as well as students regarding classroom environment and classroom assignments.
II. Desirable Habits of mind that are to be inculcated among the students so that they shall be proved to be the most beneficial citizens in life ahead.

The other three dimensions are content-related and are closely linked with the methodology through which the content is delivered during session. These three dimensions are:

I. Declarative and Procedural knowledge
II. Refinement and extension of the learnt knowledge.
III. Appropriate meaningful usage of the knowledge in daily life, after being learnt (Marzano et al., 1992).

After conducting a full-length research, Robert Marzano and his co-workers identified five important Dimensions of Learning. Brief introduction of each dimension is given below.

a. Attitude & Perception

Favorable attitude and perception of teachers as well as students about learning and learning environment is the pre-requisite for achieving the desired outcomes as well as instructional objectives. Provision of friendly environment needs to be ensured in the classroom and the school at large wherein the students feel easy and fully accepted by the teachers, peers and school administration.

b. Acquire & Integrate Knowledge

This dimension explains and stresses that new knowledge can effectively be acquired when the students are able to link it with the knowledge acquired previously. The teachers have been stressed here to use relevant instructional strategies during classroom teaching that enable the students to identify linkages in old and new knowledge. This dimension differentiates knowledge into two forms namely Declarative and Procedural.

c. Extend and Refine Knowledge

This dimension explains how the teachers help students to further extend and refine the acquired declarative and/or procedural knowledge. This dimension focuses on the refinement and extension of the knowledge of the students through six basic reasoning skills viz "Comparing, Classifying, Induction/Deduction, analyzing errors and constructing support, analyzing perspectives and Abstracting" (Marzano et al., 1992).

d. Use Knowledge Meaningfully

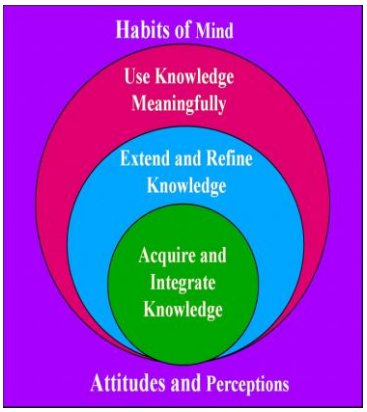
This dimension relates the refined and extended declarative or procedural knowledge learned by the students to their day to day life. The 4th dimension stresses teachers to engage their students in higher order thinking processes like "decision making, investigation, experimental inquiry, problem solving and invention" (Marzano, 1993).

e. Productive Habits of Mind

Habitual thinking of the students represents habits of mind that intelligent and successful students use to maximize their learning. There are three types of mental habits viz creative, critical and self-regulated. Productive habit of mind can be noticed when a student intelligently behaves in case he or she faces a problem, the solution of which is not instantly known.

"Dimension of Learning is a comprehensive research-based framework that give due importance to students as life ling learner, the DOL was initially introduce to improve learning of the students that can be ascertained from the score against the tests for the purpose" (Thompson,1999).

Five Dimensions of Learning



Source: (Marzano, Robert J., Pickering, Debra J., et al. (1997)

3. Objectives of the research

The instant research is expected to achieve the following objectives.

1. To assess teachers' attitude and perception about classroom environment and class works at tertiary level.
2. To evaluate the teachers' strategy how to help student acquire and integrate knowledge.
3. To assess the teachers how to help the students in extending and refining their knowledge.

4. Hypothesis

The following Hypotheses & Null Hypotheses were framed for the conduction of the instant research.

Hypothesis: 1

H0: Teachers do not implement "Dimensions of Learning" Model at tertiary level

H_1: Teachers implement Dimensions of Learning Model at tertiary level

Hypothesis: 2

H_0: Teachers teaching natural sciences do not implement Dimensions of Learning Model at tertiary level more than teachers teaching social sciences

H_1: Teachers teaching natural sciences implement Dimensions of Learning Model at tertiary level more than teachers teaching social sciences.

Research Methodology

The research has been conducted using both quantitative and qualitative approaches for the purpose of improving the validity and reliability of the instant research.

Population/ Sampling

For the purpose of the instant research all the students and teachers of the Khyber Pakhtunkhwa province of Pakistan at tertiary level are considered to as the population. Khyber Pakhtunkhwa Higher education Department reported on its website that a total of 106,967 students have been enrolled in various disciplines in the public sector universities in 2016, while 4,676 teachers have been reported to be there for their teaching.

There are 20 public sector universities in Khyber Pakhtunkhwa. Out of these 20 universities, 10 were selected in such a way that two universities from northern region of the province, two universities from southern region, two universities from eastern region and two universities from central region were selected. 05 teachers were selected randomly from each university. A total of 50 teachers were selected and observed in this research. During the study it was ensured that 50% of the teachers were male and 50% of them were male teachers. Likewise, 50% of the teachers were selected from Natural sciences and 50% were from Social Sciences. Similarly, 10 students of each observed teachers were randomly selected and they

were given questionnaires to fill in. total sample of the students in this way was 500 students. Out of these 500 students, 50% were male students and 50% were female students.

Research Tools

Research design identifies the researcher what to do, when, where, why and with whom. The basic research is regarding the available information. Two different types of data collecting tools have been used in the instant research, Observation Checklist for teachers and Questionnaire for students.Lickert scale model was used in observation check list and also in questionnaire for students.Keeping in view the first three Dimensions of Learning Observation checklist and questionnaire employed in research both were based on Lickert Scale with the following four options:-

i. Never with Scale 1, Rarely with scale 2, Occasionally with scale 3, Frequently with scale 4.

Interpretation of alpha value

Alpha result 0.8 shows good inter-consistency of items in observation check list and questionnaire. Alpha value 0.8 defines reliability of test items revealing that test items are reliable means it measures what it tends to measure.

Analysis and Interpretation of Data

The major purpose of the study was to assess the teachers' attitude towards Dimensions of Learning whether they incorporate bits and parts of the model into their teaching sessions or otherwise. As the DOL model assimilates in itself all the important aspects of a desired methodology for maximizing the students learning.

Option	Frequently		Occasionally		Rarely		Never		Total
	F/S.S	F/N.S	O / S.S	0 / N.S	R/ S.S	R/N.S	N / S.S	N/ N.S	
%age	2%	1%	4.20%	2%	9%	7%	35.29 %	39.73%	100%

The data further shows that social sciences teachers rarely implement the DOL up to 9% while Natural sciences teachers rarely implement dimensions of learning to the extent of 7%. Similarly 2% of the social sciences teachers were found using Dimensions of learning frequently as compared to only 1% of the teachers teaching Natural sciences.

The data shows under the heading of Never on Likert scale, the social sciences teachers stand at 35.29% while the teachers of Natural Sciences stand at 39.73%. the total percentage goes to be 50% for teachers from social sciences and 50% for teachers of Natural sciences. The overall picture shows that Teachers teaching natural

sciences do not implement Dimensions of Learning Model at tertiary level more than teachers teaching social sciences.Similarly the data collected as shown below, reveals that 73% of the teachers do not implement the Dimensions of Learning under consideration, at all, while 21% of the teachers rarely implement Dimensions of Learning. The data shows a disappointing picture that less than one percent of the teachers were found using Dimensions of Learning frequently while 5% of the teachers were occasionally incorporating DOL in their teaching sessions.

S.#	Dimension of Learning	Frequently	Occasionally	Rarely	Never
1	Dimension 1: Attitude And Perception.	2%	12%	41 %	45%
2	Dimension 2: Acquire and Integrate Knowledge	0	1%	10%	89%
3	Dimension 3: Extend & refine Knowledge	0%	2%	13%	85%
%age of the three DOLs		0.67%	5%	21.33%	73%

The data shows that H0 is true meaning thereby that most of the teachers do not implement "Dimensions of Learning" Model at tertiary level, while negligibly small percentage of the teachers implements the Dimensions of Learning frequently.

ANOVA with Friedman's Test

In order to assess the Reliability &Validity of the data, various statistical tools have been used. It is to state that besides percentages, Ordinal regression model has been applied on the data collected. Moreover, Reliability tests Cronbach Alpha, Inter-Item Correlation Matrix, Inter-Item Covariance Matrix, and Interclass Correlation Coefficient have been worked out.

		Sum of Squares	Df	Mean Square	Friedman's Chi-Square	Sig
Between People		33945.187	327	103.808		
Within People	Between Items	3105.463[a]	2	1552.732	119.900	.000
	Residual	13885.203	654	21.231		
	Total	16990.667	656	25.900		
Total		50935.854	983	51.817		

Grand Mean = 5.01,

a. Kendall's coefficient of concordance W = .061.

Alpha result 0.8 shows good inter consistency of items in questionnaire. Alpha value 0.8 reveals reliability of test items. Test items are reliable that means, it measures what it tends to measure.

Findings

In majority of the cases the teachers do not bother to implement dimensions of Learning, in other words modern concepts and skills which are the requirement of the modern age, which is actually the root cause of all instructional ailments, leading to continuous deterioration in our education system.

It was found from the collected data that both the two teachers that preferred to have friendly relationship with the students in classroom were from social sciences. Positive relationship of the teachers maximizes the achievements of the students (Ari, 2008:). The data shows teachers at tertiary level monitoring their own attitude including unconscious negative expectation of certain students rarely. Positive attitude of teachers leads towards success (Gecer, 2002).

Dimension 2 "Acquiring and Integrating Knowledge". If we look into the observation checklist particularly related to Dimension 2, all the statements are actually very closely related to the way the content are transferred to students in the most desirable way in order to ensure maximum content transfer. Educationists a critique by Kiragu (1988) on a similar study conducted earlier by Kathuri and Pals (1993) emphasizes that the significant relationship between students' attitudes towards a subject and academic achievement is a function of their personal attitudes rather than external factors.

Dimension 3 "acquire and integrate knowledge" is also an ignored one.76% of the teachers never bothered to take care of this dimension and to make part of their teaching strategy. 22.5%of the teachers used it rarely while only 1.5% of the teachers occasionally used it in their teaching methodology. Collected data shows that 86% of the teachers never bothered to introduce essential thinking process to students, while 10% of the teachers rarely focused on introduction of an essential thinking process to students. 4% of the teachers were found that they occasionally introduce an essential thinking process to students. Collected data shows that 74% of the teachers never provided students with ways of graphically representing the process. 20% of the teachers rarely provided students with ways to represent the process graphically, while only 6% of the teachers did it occasionally.

Conclusion

The teachers that focused on the inculcation of productive habits of minds in students were scarce, despite of the fact that students at tertiary level needed it more. Teachers need to be trained on how to encourage students to think critically and creatively. where they (students) may exercise their critical, creative and self-regulated thinking. The research was basically intended to help determine the extent to which various aspects of Dimension of learning are applied

in the teaching at tertiary level, but at the same time this research also points out the flaws and short comings in our teaching instruction.

Recommendations

At the conclusion of research, the following recommendations are suggested: -

- Keeping in view the holistic approach towards Teaching-Learning, Dimensions of Learning needs to be made an integral part of the pre- and In-service teacher trainings.
- As the research proves, there is gap in climate of classroom and effective teaching, so teachers should focus on ensuring conducive climate during sessions.
- The teachers should convince students that positive attitudes and perceptions regarding classroom climate, improves and maximizes learning.
- The teachers should share with students the relationship of effective learning with their own attitude and perception..
- Recognize and provide for students' individual differences.
- Natural sciences and Social sciences students need to be involved in teaching-learning sessions.
- Teachers at tertiary level should be motivated to adopt the steps devised in the DOL in order to achieve the set targets and maximize the achievements of the students.

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