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Review Of Research



PROSPECTIVE TEACHERS' CONCEPTIONS OF TEACHING AND LEARNING

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ABSTRACT:

A good teacher, like a good researcher, will always seek to extend the boundaries of their own knowledge. It is an accepted fact that teachers are usually not born but made. Teaching, however, is also somewhat individualistic in-as-much-as the personality of an individual teacher will



influence how well they are able to use the proven tools of good teaching. This paper is intended to give an insight into the conceptions of teaching and learning for prospective teachers who intend to excel in their teaching career. Two major conceptions of teaching and learning (traditionalist and constructivist) have been delineated. The purpose of this

study was to determine if a majority of the prospective teachers in Colleges of Education, Greater Mumbai have constructivist conceptions of teaching and whether other variables pre-sage such as gender, age, teaching experience and type of college would influence their conceptions. Teaching and Learning Conceptions Questionnaire (Chan & Elliott, 2004) was administered to 327 prospective teachers selected through probability sampling. Results indicated that a majority of the prospective teachers had traditionalist conceptions of teaching and learning, gender did not influence their conceptions, whereas age did influence their conceptions to some extent. Experienced prospective teachers had conceptions that were more inclined to constructivist conceptions than the inexperienced prospective teachers. Implications of these results for improvement of conceptions of teaching and learning of prospective teachers and for further research have been drawn.

KEY WORDS: *constructivist and traditionalist conceptions of teaching and learning; prospective teachers.*

INTRODUCTION:

Teachers' attitude towards teaching plays an important role for a progressive and fruitful classroom student and teacher interaction. Good teachers nurture their knowledge and skills through constant and deliberate efforts. As teaching is an applied discipline, this also means extending the associated practical skills. One of the pre-requisite to be a good teacher is to understand the teaching learning process in depth. This facilitates better appreciation of the teaching profession as well as the process of imparting education. Effectiveness of teaching reflects interplay among a number of teacher-variables prominent among which is the conceptions of teaching and learning. A considerable amount of attention has been given to conceptions of teaching and learning by teachers and teacher educators by researchers in education for some decades now (Young, 1981; Entwistle, Skinner, Entwistle & Orr, 2000; Samuelowicz & Bain, 2001; Kane, Sanddretto & Heath, 2002; Chan, 2004; Teo & Chai, 2008). This attention is based on the belief that effectiveness of teaching depends on the teachers' conceptions of teaching and learning. Consequently some researchers in education have turned their gaze on these conceptions. These conceptions are generally formed and affected by certain factors. It is observed in many studies that the attention is mainly given to those who have already become teachers. The question arises is with respect to the conceptions of teaching and learning of the prospective teachers who are yet in the process of being a teacher. Probably these prospective teachers are in the process of developing and forming their conceptions of teaching and learning. Hence, it is of a significant interest to study the conceptions of teaching and learning of the prospective teachers admitted to teacher education institutions.

RATIONALE OF THE STUDY

According to Teo and Chai (2008), studies of this nature provide information needed by teacher educators on issues relating to the design and evaluation of teacher education and professional development programs. Thus, prospective teachers with positive attitudes towards teaching can be created. Research suggests that there are mainly two major conceptions of teaching and learning. They are traditional and constructivist conceptions. The traditional conception, which is more prevalent in classrooms, places much emphasis on teaching as transmission of corpus of knowledge from authoritative sources like teachers and textbooks to students who are passive recipients. The students are expected to take the knowledge from teachers undoubtedly. The constructivist conceptions of teaching are predicated on the principle that it is a process of assisting and guiding the learner during her/his attempts to construct meanings from series of experiences in her/his environment. Constructivism is a view of learning and development that emphasizes the active role of the learner in building understanding and making sense of the world, in which learners use their prior understanding and experience to construct, elaborate or restructure their current knowledge (Duffy & Cunningham, 1996).

Gender based discrimination against female child is pervasive across the world. There are two main inequalities as pointed out by Amartya Sen, a well known economist and philosopher, were educational inequality and health inequality. As per the literature, females have been treated inferior to males and this is deeply engraved in the minds of the females. Some argue that due to this inferior treatment females fail to understand their rights and had to follow everything that was said by the elders with or without their consent. Because of some culturally assigned duties, many females may

miss out on the chance to improve on their conceptions of teaching and learning. This may cause a difference in the conceptions of teaching and learning of females and males. The possibility is that females may have traditionalist conceptions and males who are treated as superior over females and given ample freedom to do things their way may have constructivist conceptions. Therefore, it is essential to study the prospective teachers' conceptions of teaching and learning with respect to gender.

One of the study conducted in Hong Kong revealed that student-teachers held a constructivist conception of teaching and learning and this conception was related to their learning experiences (Tang, Wong & Cheng, 2012), learning experiences comes with age. Therefore, it is important to study the prospective teachers' conceptions of teaching and learning with respect to age.

Also, experienced and inexperienced teachers' conceptions of teaching and learning may differ. This is because, the ones who are fresh into teaching field may tend to follow the techniques that are already been followed since ages without taking any risk of trying new teaching techniques which may hamper their job security. Whereas, the ones who are already into the teaching field from years may take risk and try using different techniques. It may be said that, inexperienced ones may follow traditional conceptions whereas experienced ones may follow the path of constructivism. Therefore, it is important to study the prospective teachers' conceptions of teaching and learning on the basis of their teaching experiences.

Another important factor could be the type of college in which the prospective teachers are admitted. There are colleges with various objectives. Some of them work for the growth and development of their students and others may work for personal gains. Teacher educators' roles also changes with the change in the objective of the college. Achieving the objectives of the college may affect the teaching techniques and teachers attitude towards their students. This in return results in the formation of the basis for the prospective teachers' conceptions of teaching and learning because it is still believed that teachers are the role models for their students. Hence, it is very important to study the prospective teachers' conceptions of teaching and learning on the basis of types of college.

Researcher found that teachers with traditional essentialist beliefs tend to use a teacher-centered instructional approach while teachers with constructivist beliefs tend to use a learner-centered instructional approach. The benefit of a learner-centered instructional approach is that it caters to the needs of many students and sustains their interest in school and school related activities. Generally, this reform is directed toward enabling students to be capable of constructing and discovering their own knowledge. Knowledge discovered is more useful to learners than knowledge merely received. By implication, this conception emphasizes the point that the learner should be actively involved in the process of making sense from plethora of experience in and out of classrooms. Strands of research evidence converge to confirm the efficacy of the constructivist conception of teaching when compared with the traditional conception (Trumper, 1990, 1991; Bajah & Asim, 2000; Chang & Bell, 2002).

Perhaps if the conceptions of prospective teachers on teaching and learning are understood, teacher education programs could be facilitated as desired and be prepared in such a way that it caters to the needs of prospective teachers, in general. It is hoped that the findings of the present study will provide enlightenment on the conceptions of teaching and learning of the prospective teachers. The following are the null hypotheses that were tested for the present study:

1. H_0 : There is no significant difference in conceptions of teaching and learning on the basis of gender of prospective teachers.

2.H₀: There is no significant relationship in conceptions of teaching and learning with age of prospective teachers.

3.H₀: There is no significant difference in conceptions of teaching and learning on the basis of teaching experience of prospective teachers.

4.H₀: There is no significant difference in conceptions of teaching and learning on the basis of type of college of prospective teachers.

METHOD

The purpose of the present study was to examine the conceptions of teaching and learning of the prospective teachers in relation to gender, age, teaching experience and type of college. The descriptive research method of correlation and causal comparative included under the quantitative paradigm was used for the present research.

The causal-comparative method was used by the researcher to compare conceptions of teaching and learning of the prospective teachers on the basis of their gender, teaching experience and type of college.

The correlational method was used to determine the relationship between conceptions of teaching and learning of the prospective teachers with age.

PARTICIPANTS

The data were collected from 342 prospective teachers and out of which 15 incomplete tools were rejected. The final sample size was 327 prospective teachers from various B.Ed. colleges across Greater Mumbai and affiliated to University of Mumbai.

INSTRUMENT

Data on prospective teachers' conception of teaching and learning were collected using Teaching and Learning Conceptions Questionnaire (TLCQ) which was designed by Chan and Elliott (2004). The scale was validated by administering it to a sizeable sample of teacher education students in Hong Kong. It includes thirty items which are scored on a Likert scale of five points (1 = Never; 2 = Rarely; 3 = Sometimes; 4 = Often; 5 = Always). It is a two-factor, 30-item questionnaire designed to measure the Traditionalist Conception and Constructivist Conception of teaching and learning. It consists of an 18 – item traditionalist conception (TC) and a 12 – item constructivist conception (CC). The total internal consistency of the scale using Cronbach's alpha was 0.84.

The two factors/dimensions of the TLCQ are briefly described as follows:

Constructivist conception: This dimension advocates the use of the learner-centered instructional approach in teaching and learning. Examples of items in this dimension are like, "it is important that a teacher understands the feelings of the students." Also, "good teachers always encourage students to think for answers themselves" (Chan & Elliott, 2004b, p. 822)

Traditional conception: This dimension advocates the use of the teacher-centered instructional approach in teaching and learning. Examples of items are like, "during the lesson, it is important to keep students confined to the text books and the desks." Also, "learning means remembering what the teacher has taught; good students keep quiet and follow teacher's instruction in class" (Chan & Elliott, 2004b, p.822)

SAMPLING TECHNIQUES

The researcher used a three stage-sampling technique. At the first stage, B.Ed. colleges were selected through stratified random sampling wherein the strata were North, Central and South Mumbai. At the second stage, the sampling technique used was stratified random sampling and the strata were government, private-aided and self-financed colleges. At the third stage, prospective teachers were selected from these colleges using simple random sampling procedures. TLCQ was administered to the participants by the researchers. The participants responded and returned the questionnaire to the researchers immediately. This guaranteed maximum retrieval. The responses were scored as described under "Instrument" in the previous section. Frequency counts and percentages of responses under each response option were determined. Data were analyzed using Microsoft Excel 2007 and VassarStats: Website for Statistical Computation. (<http://vassarstats.net/>)

ANALYSIS

(1.) The first hypothesis states that there is no significant difference in conceptions of teaching and learning on the basis of gender. To test this hypothesis, t-test was used. Table 1 represents statistics on the gender wise distribution on constructivist conception and traditionalist conception (CTL) of the prospective teachers.

Table1: Distribution of CTL by gender

Gender	N	Conceptions of Teaching and Learning			
		Constructivist Conception		Traditionalist Conception	
		N	%	N	%
Females	296	107	36.15%	189	63.85%
Males	31	5	16.13%	26	83.87%
Total	327	112	34.25%	215	65.75%

From table 1, it can be stated that 215 (65.75%) prospective teachers irrespective of gender are inclined towards the traditionalist conceptions of teaching and 112 (34.25%) prospective teachers are inclined towards constructivist conceptions of teaching. Table 2 represents statistics on the CTL in prospective teachers on the basis of gender.

Table 2: CTL by gender

Variable	Groups	N	Mean	't' ratio	P
CTL	Females	296	-5.9662	1.74	0.082806
	Males	31	-10.1613		

Table 2 shows that the obtained t-ratio was 1.74 ($P = 0.082806$). Thus, the gender difference in mean CTL is not significant. Hence, the null hypothesis is accepted. It means that there is no significant difference in CTL of female and male prospective teachers. Also, it can be stated that gender do not influence significantly in the formation of CTL in prospective teachers.

DISCUSSION

The present study found that gender does not play a vital role in the formation of the conceptions of teaching and learning of the prospective teachers. This could be because both females and males believed that learning depends on some other factors other than gender. May be equal opportunities and exposures had been given to both females and males, irrespective of their gender

that had helped them form similar views towards their conceptions of teaching and learning. Whereas, there are studies that had found contrasting result to the results found in the present study. Aypays's (2011) study found that teaching and learning conceptions differed based on gender with mean scores of female student-teachers on the constructivist conception being significantly higher than that of males. One of the studies conducted on the Turkish student-teachers pointed out that female more strongly believed that learning depends on effort rather than ability as compared to male student-teachers. These findings together indicate that female student-teachers agree with the view that knowledge is constructed by students (Oğuz, 2008 cited in Aypay, 2011). Results found in the studies mentioned above and the present study contrasts and this could be because of the differences in the cultural context that are followed based on gender between these countries.

(2.) The second hypothesis states that there is no significant relationship in conceptions of teaching and learning with age. To test this hypothesis, correlation was used. Table 3 represents statistics on the CTL in prospective teachers on the basis of age.

Table 3: CTL with age

Groups	Mean	'r'	P	Coefficient of Determination
Age	24.2263	0.2037	0.000209 (P < 0.05)	4.15%
CTL	-6.3639			

From table 3, it can be stated that the obtained 'r' is 0.2037 (P = 0.000209). It is significant. Hence, the null hypothesis is rejected. The magnitude of the relationship is low as the 'r' is 0.2037. Since, 'r' is positive it shows that there exists a direct relationship in CTL with age. The coefficient of determination is 4.15%. It means that 4.15% of the variance in CTL of prospective teachers is associated with their age. It can be concluded that higher the age of a teacher, higher is likely to be her/his inclination towards constructivist conception and vice-versa.

DISCUSSION

Constructivism or student-centered approach is based on Piagetian theory, referring to the belief that perspectives are constructed by the interpretation of experiences (Kegan, 1982, 1994 cited in Cheng et al, 2009). It is a well-known fact that experiences come along with age. As prospective teachers come across various experiences before and during the process of the teacher education programs it also influences in the formation of conceptions of teaching and learning. This observation provides a plausible explanation to the finding of this study with respect to the second hypothesis.

(3.) Hypothesis 3 states that there is no significant difference in CTL on the basis of teaching experience. To test this hypothesis, t-test was used. Table 4 represents statistics on the CTL in prospective teachers on the basis of teaching experience.

Table 4: CTL by teaching experience

Variable	Years of teaching experience	N	Mean	't' ratio	P
CTL	0-3	310	-6.7806	2.53	0.011878
	4 & above	17	1.2353		

From table 4, it is clear that the obtained t - ratio is 2.53 ($P = 0.011878$). The difference between the mean is significant. Thus 't' is significant. Hence, the null hypothesis is rejected. It can be concluded that a prospective teacher who has teaching experience of less than three years is more towards traditionalist conceptions. A prospective teacher who has teaching experience of four years and above has constructivist conceptions.

DISCUSSION

It was expected that experienced prospective teachers would have conceptions that are more inclined to constructivist precepts. This is because experienced teachers are believed to have improved performance and conceptions over a period of time. Also, they are in a position to take risk and try out new techniques of teaching; on the other hand, inexperienced teachers might follow the guidelines as laid down previously and avoid taking risk in any form. According to Norton, Richardson, Hartley, Newstead & Mayes (2005) teachers' conceptions of teaching and learning in higher education change with experience, usually from being more teacher-centered and content-oriented to being more student-centered and learning-oriented and that this will inevitably have benign consequences for the teachers' performance in the classroom. There is, in fact, little evidence that teachers' conceptions of teaching and learning really do develop with increasing teaching experience (Norton, Richardson, Hartley, Newstead, & Mayes, 2005 cited in Richardson, 2005). Thus, this study has provided evidence which do support the result of the present study. Therefore, it can be stated that experienced teachers hold on persistently to constructivist conceptions of teaching and learning.

(4.) Hypothesis 4 states that there is no significant difference in CTL on the basis of type of college. To test this hypothesis, ANOVA was used. Table 5 represents statistics on the CTL in prospective teachers on the basis of type of college.

Table 5: CTL by type of college

Variable	Type of College	N	Mean	P
CTL	Private-Aided	46	-2.978261	0.003255 ($P < 0.05$)
	Government	40	-12.1	
	Self-Financed	241	-6.058091	

From table 5, it is clear that there are three sub-groups in the types of college category namely; private-aided college, Government college and self-financed colleges. The obtained P value is $P = 0.003255$. It is significant. Thus, there is a significant difference in CTL on the basis of type of college. Hence, the null hypothesis is rejected.

Since, table 5 shows the significant relationship amongst the sub-groups of the variable, it becomes necessary to check which sub-group/s has significant difference with other sub-group/s. Tukeys HSD test shows the relation amongst these sub-groups. Private-aided and government college scores are significant. The scores of private-aided and self-financed college are not significant. Private-aided and self-financed college scores are significant. Observing the mean scores of each type of college, it can be stated that private-aided and self-financed prospective teachers are more towards constructivist conceptions of teaching as compared to government college score.

DISCUSSION

This result can be explained by the fact that irrespective of the type of college the prospective teachers had a tenacious hold on the traditionalist conception. The prospective teachers of private-aided and self-financed colleges were inclined more towards constructivist conceptions as compared to the prospective teachers of government college. Aypay's (2011) found that as the student-teachers progressed towards their senior year, their scores on the traditional conception were decreased. Based on these findings, it might be claimed that the training they received in the teacher education institution might have negatively influenced their beliefs regarding the traditional conception. Similarly, in the context of the present study, the training that prospective teachers receive from a government college may have lowest negative influence on their beliefs regarding traditional conception. It means they are more inclined towards traditional conceptions as also, found in the present study. The possible reason could be that the teacher educators teach the way they were taught and hold somewhat similar beliefs with their teachers. The prospective teachers of private-aided and self-financed colleges may have more negative influence with their beliefs regarding the traditional conceptions. It means that they are moving slowly from traditional conceptions to constructivist conceptions. Besides, despite the acknowledged efficacy of constructivist instructional strategy, teacher educators, as well as prospective teachers, have not been much challenged to reconsider their conceptions of teaching and learning.

CONCLUSION

The findings of this study support the conclusion that the conceptions of teaching and learning of prospective teachers is not influenced by gender. Age is one of the factors that influence the conceptions of teaching and learning because findings suggested that higher the age of a prospective teacher, greater is the inclination towards constructivist conceptions and vice-versa. It is also evident that prospective teachers who has teaching experience of more than four years had conceptions of teaching and learning more inclined to the constructivist conceptions than their inexperienced counterparts is also provided by the findings. Finally, the type of college in which the prospective teachers has been admitted also plays an important role in the formation of their conceptions of teaching and learning. Prospective teachers studying in the private-aided college are inclined more towards constructivist conceptions than that of the prospective teachers studying in the self-financed college whereas; it is the least for the prospective teachers studying in the government college.

The present paper gives insight into a few concepts of teaching and learning, especially at the higher levels of education. Many countries make it mandatory for teachers to undergo formal course on education principles where the concepts of teaching and learning are taught. However, this exposure to teachers is non-existent for professional teachers who enter into teaching profession without any exposure to formal training in education. This sometimes may act as a constraint in the process of effective teaching and learning process.

Despite the fact that we encourage cautious interpretation and application of the conclusions of this study, we hope that this study has generated curiosity adequate enough to simulate further studies of this phenomenon. However, it must be mentioned that the fragmentary nature of data presented in this study can only lead to suggestions rather than conclusions and this is why the implication drawn from it is restricted to the population used in this study.

IMPLICATIONS

From the preceding, an implication of these findings is that prospective teachers would need to

be aware of their conceptions of teaching and learning. They should be assisted to be open-minded to contemporary approaches to organizing interaction patterns in their teacher education programs. Education may only be raised high by raising the quality of the teachers. Seminars, conferences and workshops should be organized for them within which prospective teachers' views on teaching and learning can be challenged. Ways of assisting them to reduce their tenacious hold on the traditionalist conception should be explored.

Research into the ways that people learn has not provided teachers with any specific answers. If it had, all teachers would be using the same techniques. Teaching is a set of events, outside the learners which are designed to support internal process of learning. Teaching (Instruction) is outside the learner. Learning is internal to learners. You cannot motivate others if you are not self-motivated. Motives are not seen, but, behaviors are seen. Is learning a motive or behavior? Learning is both a motive and behavior but only behavior is seen, learning is internal, performance is external. However, researchers have identified that learning is generally more effective if it is based on experiences; either direct experiences or experiences that have been read about. Of the two types of experiences, the former is more likely to be effective than the latter. At this stage, teachers must consider on how they might best provide the experiences so as to make the learning as easy and quick as possible. Traditionally, mostly the role of the teacher was to transmit information as if the teacher was the source of all knowledge, while the students either listen passively or take their own notes. This, of course, is not true anymore. The modern teacher is a facilitator: a person who assists students to learn for themselves. This change from the traditional model is the result of a number of factors. First, it is recognized that adults, unlike small children, have a wealth of experience and are able to plan their learning quite efficiently. Second, not all individuals learn in the same manner, so that if a teacher talks to students some might benefit, but others might not. Third, everyone learns at their own pace and not, of necessity, at the pace set by the teacher. Hence, the individualizing of learning has defined advantages.

Generally, the role of teachers can be classified into two groups, namely, traditional role or teacher-centeredness and constructivist role or student-centeredness. There is a gradual shift traditional conception to constructivist conceptions. When the teacher builds the lesson on the previous experiences of the student it increases learning. However, every individual understands and interprets the teaching and learning process differently and it must be acknowledged. Hence, effective learning takes place when it is based on students' experiences or when it is more learner-centered. In short, effective learning takes place when it follows the path laid down by constructivist conceptions. Parpala and Lindblom-Ylänne (2007) proposed that the students are expected to construct their own knowledge. In addition, students' prior knowledge and conceptions are important in the process of learning and teaching.

More studies are solicited, in this area, to validate or otherwise the findings of this study and to improve on the generalizability of the findings especially now that there is quest for ways of making teaching to be learner-centered. In teaching and learning process, the conceptions that the teachers have play a crucial role. Pajares (1992 cited in Devlin, 2006) states that what the teachers hold as the conceptions shape their judgments, and as a result, affect the way they behave in the classroom setting.

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