EFFECT OF KOLB'S EXPERIENTIAL LEARNING STRATEGY ON ENHANCING PEDAGOGICAL SKILLS OF PRE-SERVICE TEACHERS OF SECONDARY SCHOOL LEVEL

By

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ABSTRACT

This study aimed at investigating the effect of Kolb's Experiential Learning Strategy on enhancing the pedagogical skills of pre-service teachers of secondary school level. Kolb's Experiential Learning is a method of acquiring knowledge, skills, and experiences by creating situation to gain first hand experiences. According to Kolb optimal learning takes place when the learner pass through a cycle of experiential learning. It focuses on the learning process of the individual by reflecting upon the experiences provided and takes the students through the whole process in sequence. This study is an experimental study with 2x3 factorial design. Randomly selected 40 pre-service teachers were the samples of the study. Pedagogical skills of pre-service teachers were measured using 'Observation Cum Rating Scale' prepared by the investigator. Data was analysed using inferential statistic ANOVA at 0.05 level of significance. The study revealed that Kolb's experiential learning strategy is significantly effective than the conventional teaching strategy in enhancing the pedagogical skills of pre-service teachers of secondary school level.

Keywords: Kolb's Experiential Learning, Pedagogical Skills, Pre-service Teachers.

INTRODUCTION

Teachers play an important role to bring about transformation in educational institution. The trained and competent teachers at all levels of school education enrich the institutional capacity. The quality and level of learner achievements are determined mostly by teacher competence, sensitivity, and teacher motivation. An effective teacher education programme is essential for qualitative improvement of overall education system. To make student teachers competent, effective, and efficient it is necessary to have teacher education programme to provide various learning strategies to equip them with both pedagogical skills and subject matter knowledge. Experiential learning is one such strategy in teacher education which provides hands-on experience to put concepts and strategies into practice. Experiential Learning helps the student teachers to develop their professional abilities by reflecting on their efforts to create change within their own classroom and consequences of such actions.

David Kolb is credited with the development of the Experiential Learning theory. It is based on Dewey's (1938) work on the influence of experience on learning, Kurt Lewin's (1951) work on linking theory to practice, and Piaget's (1952) work on how experience influences cognitive development (Bryan et al., 2017). David Kolb's (1984) book on experiential learning is one of the more influential works linking theory to actual practice (Lewis and Williams, 1994, p. 6).

Experiential Learning refers to making meaning from direct experience. Kolb describes experiential learning as a four part process, where learner is asked to engage themselves in a new experience, actively reflect on that experience, conceptualize that experience, and integrate it with past experiences. Furthermore, they must make decisions

based on their created concepts (Filimowicz and Tzankova, 2017)

David Kolb's 'cycle of learning' is typically stated as four-stage cycle of learning, is a central principle of experiential learning theory, in which 'immediate or concrete experiences' provide a basis for 'observations and reflections'. These 'observations and reflections' are integrated and refined into 'abstract concepts' producing new implications for action which can be 'actively tested' in turn creating new experiences.

Figure 1 illustrates Kolb's Experiential Learning Cycle of the four stage process of learning.

Stage 1. Concrete Experiences

In this stage, the learner experiences the immediate or concrete experiences which provides a basis for observations and reflections.

Stage 2. Reflective Observation

Here the learner observes and reflect on the experiences that are provided to construct a new idea.

Stage 3. Abstract Conceptualization

The learner gains new idea or modifies the existing abstract concepts for better comprehension.

Stage 4. Active Experimentations

The learner test hypothesis and applies them in new situations.

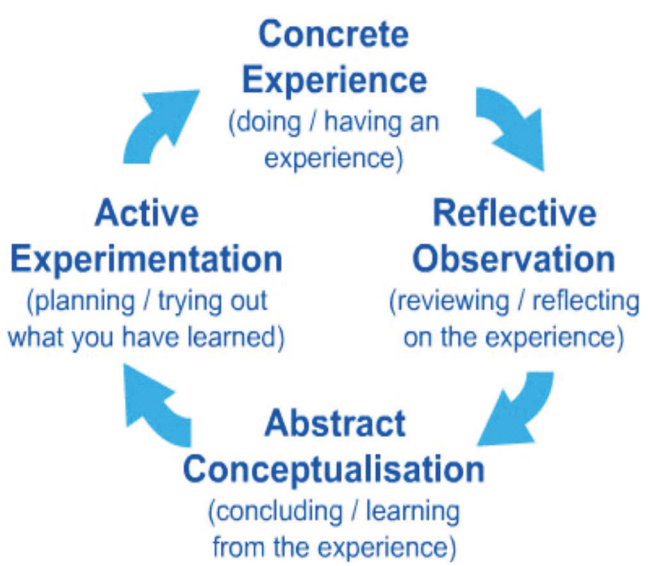

Figure 1. Kolb's Experiential Learning Cycle (McLeod, 2010)

1. Review of Related Literature

Williams (1990) conducted a study on 'Effects of experiential learning on knowledge acquisition, skill mastery and student attitudes'. The findings indicated that the Kolb Model of Experiential Learning had a significant effect on knowledge acquisition, skill mastery, and attitudes toward learning experiences. Jenkins and Healey, (2000) in their article 'Learning cycles and learning styles: Kolb's Experiential Learning Theory and its application in Geography in Higher Education' focused on the necessity for teachers to use a wide range of teaching methods to meet the student's needs. The article also presents some case studies of ways in which the theory can be applied in geography at university and K-12 levels. Arnold, Windy, and Osborne (2006) in their qualitative study on Experiential Learning in Secondary Agricultural Education Classrooms' recognized the multiple benefits of experiential learning, including increased subject matter retention among students, active engagement, use of higher order thinking skills, and academic success. Fox (2012) conducted a case study on Experiential Learning Model for Subject-Specific ICT Training in Pre-Service Teacher Education. Findings suggest that Kolb's experiential learning model provides an essential framework for subject-specific ICT training when the course curriculum is aligned with the pedagogical training of the teacher candidates. Cheriyan (2014) conducted a study on 'Effectiveness of Kolb's Model of Experiential Learning on Achievement in Mathematics'. Findings of the study revealed that the total achievement in mathematics of students taught using Kolb's Experiential Learning Model is significantly higher than that of those taught using Activity Oriented Method. Ernst (2013) conducted a study on 'Impact of Experiential Learning on Cognitive Outcome in Technology and Engineering Teacher Preparation'. Findings suggest that there was a statistically significant cognitive achievement difference between the sample of pre-service technology educators who engaged in experiential learning activity and the sample of pre-service technology educators who were not engaged in experiential learning activity. Joshi (2015) conducted a study on Effectiveness of Kolb's Experiential Learning Model for 9th standard students. Findings of the study revealed that experiential learning of boys and girls

enhanced considerably after KELM Programme.

Although numerous studies have indicated the positive effect of Experiential learning on different variables and thereby tend to facilitate learning process, there have been very few quantitative studies on pedagogical skills specifically in the field of teacher education. Therefore, in the present study an attempt has been made to measure the effectiveness of Kolb's Experiential Learning on Pedagogical skills of Pre-service Teachers.

Statement of Problem: A study on the Effectiveness of Kolb's Experiential Learning Strategy on Pedagogical Skills of Pre-service Teachers of Secondary School Levels of Mangaluru Taluk.

2. Operational Definitions of the Study

2.1 Kolb's Experiential Learning Strategy

According to Kolb, experiential learning can be defined as "the process whereby knowledge is created through the transformation of experience. Knowledge results from the combinations of grasping and transforming experience." Kolb's Experiential Learning is a cyclical process that focuses on the learner experiences for acquisition of knowledge. It is a process of planning, setting goals, thinking, observation, reflection, experimentation, and review. The learner constructs meaning in a unique way by engaging themselves in cognitive, affective, and psychomotor activities. In the present study, the Kolb's Experiential Learning strategy involves,

Concrete Experience - Here the learner encounters new experience of situation or an interpretation of existing situation.

Reflective Experience - Reflection of the new experience of particular importance.

Abstract Conceptualization - Reflection gives rise to a new idea, or a modification of an existing abstract concept.

Active Experimentation - The learner applies them into the world around them to see what results.

2.2 Pedagogical Skills

Pedagogical skills in education are the process by which teachers balance their classroom activities so that, students learn the necessary information. Pedagogical practices are most effective in promoting active participation of students in learning process. Having a good pedagogical skill promotes better classroom and behaviour management.

In the present study, the pedagogical skill of pre-service teachers refers to the various teaching skills exhibited by the pre-service teachers during teaching learning process, which was assessed by the teacher supervisors / teacher in charge/teacher educator during practice in teaching using 'Observation Cum Rating Scale' prepared by the researcher.

2.3 Pre-service Teachers

Pre-service Teachers are the Student-teachers of secondary school level pursuing two year B.Ed. Degree programme under Mangalore University during the year 2015-2017.

3. Objective of the Study

- To study the effect of training strategies and levels of teaching aptitude and their interaction on pedagogical skills of pre-service teachers after partialling out the effect of pre-achievement.

4. Hypotheses of the Study

- There is significant difference in the effect of training strategies and levels of teaching aptitude and their interaction on pedagogical skills of pre-service teachers after partialling out the effect of pre-achievement.
- There is significant difference in the effect of levels of teaching aptitude on pedagogical skills of pre-service teachers after partialling out the effect of pre-achievement.
- Interaction of training strategies and levels of teaching aptitude has significant effect on pedagogical skills of pre-service teachers after partialling out the effect of pre-achievement are retained.

5. Methodology

The present study is an experimental study with 2x3 factorial design. Population consisted of all the pre-service teachers of secondary school level of Mangaluru Taluk. The sample of the study consisted of randomly selected 40 pre-service teachers Instructional material on Kolb's Experiential Learning Model was developed by the investigator as a

facilitative tool. Pedagogical skills of pre-service teachers were measured using 'Observation Cum Rating Scale' prepared by the investigator. Data was analysed using inferential statistic ANOVA and the hypotheses were tested at 0.05 level of significance.

6. Analyses and Interpretation of the Objective

6.1 Main and Interaction Effect of Training Strategies and Levels of Teaching Aptitude on Pedagogical Skills of Pre-service Teachers

To study the effect of training strategies and levels of teaching aptitude and their interaction on pedagogical skills of pre-service teachers after partialling out the effect of pre-achievement, the following null hypotheses were framed.

H_{o1}: There is no significant difference in the effect of training strategies and levels of teaching aptitude and their interaction on pedagogical skills of pre-service teachers after partialling out the effect of pre-achievement.

H_{o2}: There is no significant difference in the effect of levels of teaching aptitude on pedagogical skills of pre-service teachers after partialling out the effect of pre-achievement.

H_{o3}: Interaction of training strategies and levels of teaching aptitude has no significant effect on pedagogical skills of pre-service teachers after partialling out the effect of pre-achievement-are retained.

To determine which training strategy is more effective in developing pedagogical skills among pre-service teachers, the adjusted mean of the training strategies were calculated. The details are given in Table 1.

Since, it was 2x3 Factorial Design with covariate the researcher used two way ANOVA with Covariate to analyse the data and test these hypotheses.

6.2 Analyses of Covariance of Scores Related to Pedagogical Skills

The two factors in the analyses of the data were – Factor A=Training Strategies and Factor B = Teaching Aptitude. Two levels of factor A were Kolb's Experiential Learning Strategy and Conventional Training Strategy and Factor B were above teaching aptitude, average teaching aptitude, and below average teaching aptitude. Table 1 presents the summary of 2x3 Factorial Design ANOVA for pedagogical skills by taking pre-achievement as Covariate.

From Table 1, it is observed that the 'F' ratio for training strategies is 15.6 which is greater than the theoretical value 4.17 for degrees of freedom 1 and 33. It indicates that, there is a significant difference in the development of pedagogical skills among pre-service teachers trained in Experiential Learning strategies.

To determine which training strategy is more effective in developing pedagogical skills among pre-service teachers, the adjusted mean of the training strategies were calculated. The details are given in Table 2.

From Table 2, it is observed that the adjusted mean of pedagogical skills of Kolb's Experiential Learning strategy is higher than the adjusted mean of Conventional Training Strategy. Hence, it is evident that Kolb's Experiential Training Strategy is significantly effective than Conventional Training Strategy in developing pedagogical skills among pre-service teachers.

From Table 1, the 'F' value for levels of teaching aptitude is 0.92, which is lesser than the theoretical value of 3.32 for degrees of freedom 2 and 33. It indicates that, there is no significant difference in development of pedagogical skills among pre-service teachers with different levels of teaching aptitude.

The 'F' value for interaction effect is 0.25 which is lower than the theoretical value 3.32 for degrees of freedom 2 and

Sources	S.S	df	MS	F	P	Result
Teaching Strategy A	1456.59	1	1456.59	15.6	0.0004	Significant at 0.05
Levels of Teaching Aptitude B	172.25	2	86.13	0.92	0.4085	Not significant at 0.05
AxB	46.84	2	23.42	0.25	0.7803	Not significant at 0.05
Adjusted Error	3081.94	33	93.39			

Table 1. Summary of 2x3 Factorial Design ANOVA for Pedagogical Skills by taking Pre-achievement as Covariate

Training Strategies	Adjusted Mean	SD
Kolb's Experiential Strategy	103.49	1.21
Conventional Training	90.35	3.80

Table 2. Adjusted Mean and SD of Pedagogical Skills with respect to Training Strategies

33. So, it is evident that there is no significant difference in development of pedagogical skills because of interaction between levels of teaching aptitude and training strategies.

7. Findings of the Study

- Kolb's Experiential Learning Strategy is effective in enhancing the pedagogical skills of pre-service teachers.
- There is no significant difference in the effect of levels of teaching aptitude on pedagogical skills of pre-service teachers after partialling out the effect of pre-achievement.
- Interaction of training strategies and levels of teaching aptitude has no significant effect on pedagogical skills of pre-service teachers after partialling out the effect of pre-achievement are retained.

8. Educational Significance

The findings of this study have a wide range of educational implications. The study revealed that the use of Kolb's Experiential Learning model is effective in enhancing the pedagogical skills of pre-service teachers. Kolb's Experiential Learning Model helped the student teachers process the experience in a better manner by reflecting upon it and thereby to develop their professional abilities. Hence, Kolb's Learning Model is useful in encouraging student teachers personal involvement in their learning activities to acquire necessary skills and knowledge required for better performance. Kolb's learning model is essential in creating a good learning environment in a manner that student teachers interest to learn more is sustained and developed effectively.

Hence, the findings of the study have following implications to different levels of education.

- Teacher education programs should integrate the Kolb's Experiential Learning Model into the curriculum to build an awareness of various learning styles. Earnest efforts are required by the teacher educator in training student teachers in practice in teaching session and to apply this in their regular teaching.
- The use of Kolb's experiential model is effective for all levels of education including all the subjects. Hence in-service teachers of all levels need to be trained to use experiential learning strategies. Workshops and seminars should be organized by CTE's and DIET's for effective implementation of experiential learning in their regular teaching in all the subjects.
- Curriculum of various school subjects should be strengthened to give attention to learning by doing (hand-on-activities). Educators should ensure that both scholastic and non-scholastic activities should give each learner a chance to engage in various learning activities so as to gain experiences.
- Hence, an effort should be made to introduce Kolb's Experiential Learning strategy in pre-service teacher education curriculum.

Conclusion

Experiential learning has been used in a variety of ways in all levels of education and it has played a strong role towards bringing work experience and ways of learning in classroom settings. Kolb's Learning Model could be used by teachers to develop appropriate learning opportunities for students. It is beneficial for the teachers to become reflective teachers and enhances their skills and methods of teaching. Thus Kolb's Experiential Learning strategies help both teachers and learners to understand their areas of strengths and weaknesses by giving them the opportunity to reflect upon the experiences and become more capable and proficient in their respective tasks.

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