

Enhancing Teaching Competency through Self-Regulation Strategies with Special Reference to Brain Compatible Learning

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Abstract

Teacher has an important role in creating such classroom environment where he/she can link teaching with learning experiences. In order to cater to the needs of diverse learners and improve their academic achievement, research today has shifted its focus from autocratic and teacher oriented instructional strategies to democratic teaching strategies wherein pupils are given due importance. Coefficient of correlation (r) value between post-test and pre-test score for self-regulation is 0.22. The calculated 't' value between the pre-test and Post-test mean score is (59.44) is greater than the theoretical 't' value of 2.00, Significant at 0.05 level (1.98) It is inferred that Post-test means score is significantly greater than the pre-test mean score. Coefficient of correlation (r) value between pre-test score and Post test score for teaching competency is 0.57. The calculated t value is (22.22) is greater than the theoretical 't' value of 2.00, Significant at 0.05 level (1.98) It is inferred that Post-test means score is significantly greater than the Pre-test mean score. The Gain ratio indicates that there is a considerable improvement in teaching competency (75.83) The Gain ratio indicates that there is a considerable improvement in Self-regulation Strategies (85.20%). The present study has concluded the self-regulation strategies are one among the easy accessible and available strategies perceived by the teacher trainees by their own lack of the components in teaching competency. The present investigation further instructs the teacher trainees to adopt self-regulation strategies in his/her teaching learning process, to become masters in their subject concerned at school curriculum.

Key Terms: Teaching competency, Self-regulation, Brain compatible learning

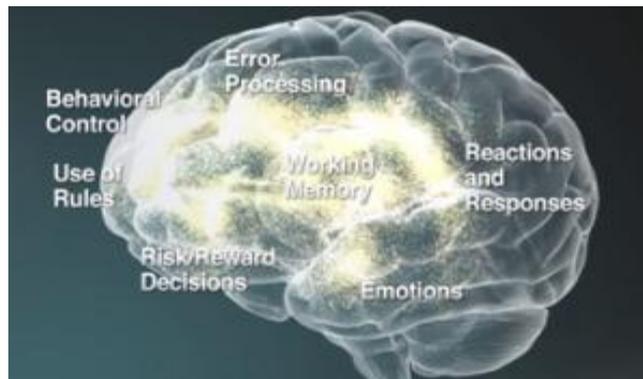
Introduction

Most of the educational researches focus on the ways of teaching that can enhance the academic achievement of the students using the best available resources now a day. Researches have been conducted to use a number of new teaching learning approaches in order to enhance the performance of learners. Learning as we know is a psychological phenomenon, that is, no two learners are alike in a class. Every learner is uniqueness with respect to the physical and mental performance, every one of those is having their own ways of learning styles. Classroom environment which is heterogeneous and contextual where students with different learning styles are found some of them are burdened with environment and parental expectations and build low self-esteem which in

turn results into losing student behaviour. In such a scenario best of teaching practices cannot give the desired output. There is a need to change the teaching strategies to improve the learning. Learning will become more enthusiastic when the learning is in their preferred style which therefore can improve the learners' performance and improve the self-esteem of students. According to Jensen, an educator should build a successful brain-compatible learning approach. Teacher has an important role in creating such classroom environment where he/she can link teaching with learning experiences which enriches the brain activity through self-regulation.

Self-regulation and brain

Functional imaging of the brain has shown that self-control is correlated with an area in the dorsolateral prefrontal cortex (dlPFC), a part of the frontal lobe. This area is distinct from those involved in generating intentional actions, attention to intentions, or select between alternatives. Executive function and self-regulation skills depend on three types of brain function: working memory, mental flexibility, and self-control. These functions are highly interrelated, and improving teaching-learning process keeping in mind the needs of diverse learners. This type of learning is application of executive function of skills requires them to operate in coordination with each other called brain compatible learning.



Brain compatible learning

Brain compatible learning aims at improving teaching-learning process keeping in mind the needs of diverse learners. The main objective of brain compatible learning is to move from memorizing information to meaningful learning. Among currently emerging and advanced learning theories, one of the important learning theories is called brain compatible learning theory. This theory offers an alternative understanding of learning by bridging educational practices to the rapidly emerging field of neurobiology. Jensen (2008) describes the resulting brain-compatible learning in the following terms: The brain is intimately involved in different learning experience. Students' brains are connected with everything forming a brain-compatible model. This model is the best understood in three words: Brain based principles, Effective brain based teaching strategies, Student engagement. Emerging proponents of the brain-compatible learning theory favour activities such as goal-setting, using visualization techniques, exercises that require brainstorming, logical thinking, and mind mapping technique etc. in the lesson planning process. It is a learning theory which

suggests the way of thinking about the learning process. According to Jensen view, 2000 brain compatible learning basically involve a brain based principles, knowledge and skills, utilizing which we can improve the learning process. Teaching students about multiple intelligences, learning styles and how their brain functions may help with metacognition. Teachers consider planning lessons to accommodate students' individual needs (Cain et al., 2005; Sprenger, 2002, 2003). Brain compatible learning incorporates the concept of multiple intelligences. This difference in learning and intelligence levels of students probably itself explain the need for teachers to use this approach such as brain-based instructional strategies at differentiated levels of teaching competency.

Classification of teaching competency

In the consultations initiated by NCTE (1998) at several national seminars, the following ten inter-related categories of competencies have emerged quite prominently

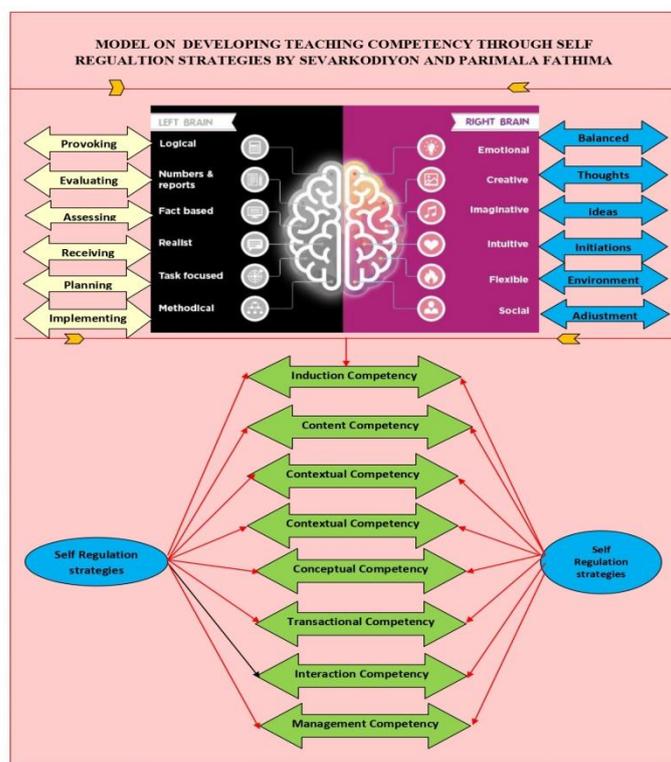
- Induction competencies
- Content competencies;
- Contextual competencies;
- Conceptual competencies;
- Transactional competencies;
- Interactive competencies
- Management competencies;

Teachers need to get the knowledge of developmental principles associated with human brain so as identify the situations when student learning is not happening by adopting suitable self-regulation strategies.

Concept of self-regulation

According to Compact Oxford Reference Dictionary (2001), “self-regulation means regulating itself without intervention from outside bodies”. Paul Pintrich (2000) have defined self-regulated learning as “an active, constructive process whereby learners set goals for their learning and then attempt to monitor, regulate and control their cognition, motivation and behaviour, guided and constrained by their goals and the contextual features in the environment” First element in definition is an ‘active part’, which is directly linked with second element that is ‘goal orientation ‘such as, Induction competency, Content competency, Contextual competency, Conceptual competency, Transactional competency, Interaction competency one such model was developed by the investigators ,called Model on developing teaching competency through self-regulation strategies by Sevarkodiyon and Parimalafathima This model validated with the support of experts 1.Dr.S.Mohan,Farmer Dean, DCE, Former Prof. , and Head , Dept of education, Alagappa university, Director, Centre for Research in Education, Adigalar College Campus, Kundrakudi..2.Dr Mrs Vasantha, Former Professor, AUCE, School of Education, Alagappa University, Karaikudi .3.

Dr. Mrs. M. Parimala Fathima, Assistant Professor, AUCE, School of education, Alagappa University, Karaikudi. The experts suggested that some of the actions can be combined. After suggestions were made with regard the refined or modified component wise model given here,



Need for the study

In preparation of primary level teacher, the district institute of education and training play a major role to have given the output of competence based teacher. However, the teaching competency is not an easiest learning process. Because it requires the continuous practices made by the teacher trainees through different types of approaches followed by the teacher educators. In strengthening the teaching competency among the primary teacher to require high level of subject understanding , high level of communicative ability , high level of classroom management , high level of teaching learning process and etc. Based upon the requirement of the teaching competency of primary teachers self-regulation strategies one among the best instructional strategies for the primary teacher trainees. Because it is an own time based instructional strategies which will provide self-oriented understanding of the components of teaching competency. The primary teacher trainees who are basically strong in particular subject, which is also one among the major component of teaching competency among the primary teacher trainees and other components are developed by teacher trainees simultaneously in the institution itself through some specialized instructional strategy, the selected self-instructional strategy help the teacher trainees to realize who is backwardness in teaching competencies of the selected subject. In the modern world there are lot of technological

approaches are available but some of the self-oriented instructional strategies played a crucial role for developing the teaching competency of the teacher trainees. It is also one of the factors to be considering the self-regulation strategies to implement the primary teacher to develop their teaching competency in the selected subject. There is an opportunities for the teacher trainees to equip themselves the teaching competency in the institution itself. For consideration of the above importance the investigator has thoroughly analysed the previous research studies related to the instructional strategies where effectiveness of success is obtained in the particular achievement. Hence, the investigator has rationally defined the investigation in the name of **Enhancing teaching competency through self-regulation strategies with special reference to brain compatible learning.**

Objectives of the study

1. To identify the level of teaching competency among DIET Student teachers
2. To develop self-regulation strategies for improving teaching competency with special reference to compatible learning among DIET Student teachers
3. To implement the self-regulation strategies among the DIET Student teachers
4. To assess the effectiveness of self-regulation strategies for the development of teaching competency with special reference to compatible learning among DIET Student teachers.
5. To find out the pre and post assessment scores of the DIET Student teachers.

Experimental design and sampling technique

Experimental design is the process of planning a study to meet specified objectives. The Experimental design adapted for the study is single group pre-test and post-test. Campbell and Stanley (1966) call this design as the before-after design. The design has three steps. The first test being the administration of pre-test measuring the dependent variable, the second step is the application of the experimental treatment for the single group chosen for this purpose, and the final step is the administration of the post-test measuring the dependent variable. Purposive sample technique was adopted in this study. A sample of 30 students was selected for this study. This study was confined only to DIET, Kalaiyarkoil, Sivagangai District, Tamilnadu, India.

Variables of the study

Independent: Self-Regulation strategy is an independent variable in the present study. Dependent: Teaching Competency is a dependent variable of the present investigation

Mean Scores of Pre and Post Test on dimensions of Self-Regulation Strategies

S.No.	Self-Regulation Strategies	Mean (pre-test)	Mean (post-test)	Coefficient of correlation (r)	t-value
1	Planning	19.93	40.10		
2	Receiving	17.33	32.13		

3	Provoking	17.2	31.93	0.22	59.44
4	Implementing	20.16	32.13		
5	Evaluating	17.6	31.90		
6	Assessing	20.10	40.23		
	SD (Standard deviation)	4.80	7.20		

From the above table, it is found that the “r” value between post-test and pre-test score is 0.22. The calculated ‘t’ value between the pre-test and Post-test mean score is (59.44) is greater than the theoretical ‘t’ value of 2.00, Significant at 0.05 level (1.98) It is inferred that Post-test means score is significantly greater than the pre-test mean score. From the above data it is observed that the mean score on dimensions of self-regulation strategies in post-test is greater than the mean score on dimensions of self-regulation strategies in pre-test. It shows that the evidence of reflection on effectiveness of self-regulation strategies.

Mean Scores of Pre and Post Test on dimensions of teaching competency

S.No.	Teaching competency	Mean (pre test)	Mean (post test)	Coefficient of correlation (r)	t-value
1	Induction Competency	20.66	36.70	0.57	22.22
2	Content Competency	20.93	33.19		
3	Contextual Competency	19.50	31.16		
4	Conceptual Competency	18.80	22.53		
5	Transactional Competency	23.33	40.86		
6	Interactive Competency	20.63	34.06		
7	Management Competency	19.26	34.13		
	SD(Standard deviation)	12.19	19.89		

From the above table, it is observed that the “r” value between pre-test score and Post test score (0.57). The calculated t value is (22.22) is than the theoretical ‘t’ value of 2.00, Significant at 0.05 level (1.98) It is inferred that Post-test means score is significantly greater than the Pre-test mean score.

Gain Ratio

Assessment	Gain Ratio
Teaching Competency	75.83
Self-Regulation Strategies	82.50

The Gain ratio indicates that there is a considerable improvement in teaching competency (75.83) The Gain ratio indicates that there is a considerable improvement in Self-regulation Strategies (85.20%).

Findings of the study

The level of teaching competency of DIET students is enhanced due to the self-regulation strategies, as revealed by the improvement in post assessment mean score. The level of self-regulation strategies of the DIET students is more in the post assessment than the pre assessment. The mean score of teaching competency in progressive test and post-test is greater than the mean score of “teaching competency” in pre-test. The mean score of “Induction Competency” post-test is greater than the mean score of “Induction Competency” Dimension wise in pre-test. The mean score of “Self-regulation Strategies” in progressive test and post-test is greater than the mean score of “Self-regulation Strategies” in pre test.

Conclusion

The present investigation has concluded that good teaching depends upon the hands of the good teachers to perform in their classrooms well. Now there are more number of exposures for available the teacher trainees who will become competency based teachers in their classrooms. The duty of teacher education institution is to prepare a competency based teachers who ever joined in this institution. The present study has concluded the self-regulation strategies are one among the easy accessible and available strategies perceived by the teacher trainees by their own lack of the components in teaching competency. The present investigation further instructs the teacher trainees to adopt self-regulation strategies in his/her teaching learning process, to become masters in their subject concerned at school curriculum.

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