

## PERCEPTION AND UTILIZATION OF DEEP LEARNING STRATEGIES AMONG STUDENTS OF HIGHER EDUCATION

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### ABSTRACT

*The present study explores the use of deep learning strategies among students of higher education as a learning approach. The participants are 109 students of Gandhigram Rural Institute (DTBU), Dindigul, Tamilnadu, India selected by simple random sampling. An open-ended questionnaire with four major questions is administered quest among the participants. The findings revealed that higher education students utilized understanding concepts, mnemonics and examples as the top three deep learning strategies, repeated study, diagram, and short notes are the top three techniques to remember better, technology, highlighting the points, a test is the strategies that they used for teaching others. Deep learning covers ideas concept understanding, repeated study, and short notes.*

**Key Words:** *Deep Learning strategies, Understanding the concept, higher education.*

### INTRODUCTION

Deep learning emphasizes learners' independence in learning through understanding of the concepts. It could be seen when learners apply their self rule in learning by thinking critically and deepen their understanding of the practical problems. Deep learners would focus on the core concepts and transfer what they have learned flexibly. Deep learning optimizes the creation and integration of knowledge. In terms of the knowledge system, deep learners have related primary knowledge by mastering non-structured knowledge like multifaceted concepts and deep knowledge. They make use of this knowledge and mingle to become a solid knowledge. Learners who have gone through deep learning will have a more complete knowledge system. Deep learning cultivates learners' lifelong learning ability. Deep learning relies on higher-order thinking, which will encourage students' ability to have

autonomy in learning. In terms of learning motivation, students are learning for their own needs by improving their knowledge and skills autonomously.

Deep learning is a metacognitive process in which based on primary knowledge and re-constructing knowledge, which needs cognition of the learning process and having the transfer of knowledge as a target to solve practical problems in the learning process, (Zhang Hao and Wu Xlujuan 2012). Deep learners can criticize, understand the knowledge originally, and construct, integrate, transfer also apply the knowledge (Yan Naisheng 2003). It has many expressions such as ways of memorization, focusing point, knowledge system, degree of commitment, reaction status, transferability, level of thinking, and learning motivation (Zhang Hao and Wu XIujuan, 2012). The concept of the deep approach is related to learning, associates, student's intention to understand the concept with their meaningful learning. It focuses on concepts principles and appropriate deep learning strategies for their better understanding. Deep approaches to learning are based on individual motives in terms of their intrinsic or extrinsic factors. It promotes engagement in learning and it satisfies the real purpose of the learning task. (Biggs, 2003; Entwistle, 1991, Trigwell and Prosser, 1991). Learner situation, learning interaction, and characteristics create approaches to deep learning. From the report of educational researches stimulating is the desired approach to deep learning (Biggs, 2003; Entwistle and Ramsden, 198; Marton & Saljo, 1997). For example, studies on the promotion of new learning environments on student approaches to learning are not convincing. Some studies concluded that new learning environments support the development of deep approaches to learning (Biggs, 1991; Albanese & Mitchell, 1993; Greening, 1998), Educational innovations develop deep approaches to learning and outcomes from suitable learning environment (Struyven et al., 2006; Gijbels and Dochy,2006).

## REVIEW RELATED LITERATURE

Sareeya chotitham, Suwimon Wongwanich, and Nonglak Wiratchai (2013) studied deep learning and its effects on achievement. The deep motive, deep strategy, and achievement are positively correlated. These results on a high level of deep learning with positive effects on achievement. Floyd. S,Harrington.j, and Julie Santiago (2009) found the effect of engagement and perceived course value on deep and surface learning strategies. A significant correlation is found between the course value and deep learning strategy and student engagement and deep learning strategy. Students perceived that they are engaged in the learning process and their perceived value of the course content is high. Ecaterina sarah

Frasineanu, (2013) studied as an approach to the learning process, studied superficial learning and deep learning students. Applying metacognition in the learning was proven useful in achieving deep learning. Dorit Alt, Meyran Bonial- Nisssim, (2018) aimed at exploring links between adolescent's deep and surface approaches to learning that might share a common core characteristic of decreased levels of self-regulation. A.Muelas and E. Navarro (2015) found out the relationship between learning strategies and academic achievement. The learning acquired by students is meaningful, self-regulation and academic achievement in curricular areas also increased. Emine onen, (2015) examined connections between modes of thinking how efficiently the class activities should be prepared and applied under the constructivist approach. Thus deep learning approach gaining significance in the present day curriculum and teachers has to apply and adopt deep learning strategies to their students. Deep learning strategies are helpful in critical thinking and problem-solving, mastery of core academic content, ability to work collaboratively, effective communication, academic mindsets, learning how to learn William and Flora Hewlett Foundation, (2013); Chow, (2010); Trilling, (2010).

## **OBJECTIVES**

Considering the importance of deep learning and its relevance this study is aimed to carried out with the following objectives among the students of Higher education regarding.

1. To identify the strategies helpful to the students of B.Ed., M.Ed., M.Phil, and Ph.D. to understand the concepts without memorizing.
2. To find out the techniques that they followed to remember the concepts during their learning process.
3. To know that the strategies they would follow for deep learning if they were a teacher
4. To find out their perception of Deep Learning.

## **METHODS AND MATERIALS**

A survey method is adopted to find out the deep learning strategies adopted by the students of higher education at Gandhigram Rural University. A questionnaire is administered among the students with four major questions of open ending as given below.

- What strategies would you use to understand the concepts without memorizing?
- Tell the ways or techniques you use to remember the concepts that you have learnt?

- What strategies do you use as a teacher to make a deep understanding of the concept among the students?
- Write down your ideas on deep learning.

The questionnaire is open-ended in to get the opinion of the respondents on major issues like strategies of deep learning clear understanding of the concepts and perception of deep learning.

## PARTICIPANTS

The sample consists of 109 Higher Education students in the Gandhigram Rural University, Gandhigram, Dindigul district studying various concepts like B.Ed, M.Ed., M.Phil, and Ph.D. students.

## DATA ANALYSIS

**Table No. 1: DEEP LEARNING STRATEGIES USED BY THE STUDENTS**

Sl. No	Strategies used	Sample (N)	No. of Respondents	Percentage (%)
1	Concept of Understanding	109	65	59.63
2	Mnemonics	109	53	48.62
3	Examples	109	51	46.79
4	Diagram	109	50	45.87
5	Short Notes	109	49	44.95
6	Repeated Reading	109	44	40.37
7	Mind Map	109	37	33.95
8	Discussion	109	37	33.95
9	Story	109	27	24.77
10	Videos	109	25	22.94

The respondents answered that ten strategies are useful for deep learning. The opinion of the respondents are analysed and the top 10 strategies are given in this table. Understanding the concepts by own effort is found to be in first place 59.63% followed 'mnemonics' 48.62, 'examples' 46.79. The low scores are for the discussion method of 'teaching' 33.95 and 'storytelling strategies' 24.77%. Video is the least strategy as revealed by the student's 'opinion' 22.94 only.

**Table No. 2: TECHNIQUES / WAYS TO REMEMBER THE CONCEPTS BETTER**

Sl. No	Strategies used	Sample (N)	No. of Respondents	Percentage (%)
1	Repeating study	109	77	70.64
2	Understanding	109	57	52.29
3	Repeated Writing	109	57	52.29
4	Short Notes	109	51	46.79
5	Discussion	109	38	34.86
6	Creative Thinking	109	36	33.02
7	Story	109	31	28.44
8	Mnemonics	109	30	27.52
9	Highlight the Points	109	24	22.01
10	Technology	109	17	15.6

The question No '2' posed the respondents is to find out their own techniques and ways to remember the concepts better after learning. Here also student's responses were analysed and 10 major techniques were found as they are given in order from 1 to 10. The first three techniques are 'repeating study' 70.64%, 'understanding' 52.29%, and 'repeated writing' 52.29%. The least three techniques are 'mnemonic' 27.52%, highlight the Points 22.01%, and 'technology' 15.6%.

**Table No. 3: DEEP LEARNING STRATEGIES USED FOR TEACHING**

Sl. No	Strategies	Sample (N)	No. of Respondents	Percentage (%)
1	Experiment	109	55	50.45
2	Interaction	109	54	49.54
3	Examples	109	51	46.78
4	Audio& Video	109	46	42.2
5	Technology	109	46	42.2
6	Discussion	109	42	38.53
7	Questions	109	41	37.61
8	Picture	109	29	26.6
9	Assignment	109	24	22.01
10	Outside Classroom Teaching	109	20	18.35
11	Test	109	19	17.43

The question No 3 is find out the deep learning strategies used for teaching used by the respondents hypothetically if they were the teachers. Here also 11 strategies were found out by analysing their responses. The top three are 'Experiment' 50.45%, 'Interaction' 49.54, and 'examples' 46.78. Whereas the least three are 'assignment' 22.01%, 'outside classroom teaching' 18.35% and 'test' 17.43%.

**Table No. 4: PERCEPTION ON DEEP LEARNING**

Sl. No	Strategies	Sample (N)	No. of Respondents	Percentage (%)
1	Long Term Memory	109	73	66.97
2	Improving Knowledge	109	65	59.63
3	Understanding	109	64	58.71
4	Proper Guidance	109	53	48.62
5	Innovative Thinking	109	52	47.7
6	Achievement	109	40	36.7
7	Problem Solving	109	33	30.27

The final question is used in order to know the perception of the students on deep learning. The students understand that deep learning means the 7 ideas given in the Table. The top ideas are 'long term memory' 66.97%, 'Improving knowledge' 59.63% and 'understanding' 58.71. The least are 'innovative thinking' 47.7%, 'achievement' 36.7% and 'problem solving' 30.27%.

## CONCLUSION

Deep learning strategies are essential for knowledge construction, integration, and critical thinking skills which require a learner to achieve the learning objectives, become interested in learning autonomously, cultivate deep learning habits, learn in an authentic environment, and able to assess their learning outcomes. Hence teachers should adopt deep learning strategies in their day to day teaching, realizing that deep learning is a student's lifelong learning ability. From this study, it is evident to know the practical ideas applied by the students of higher education regarding deep learning strategies and their perception of deep learning. Though literature is available to understand

more about deep learning, this study would be helpful to know more about the application of deep learning by the students of higher education.

## BIBLIOGRAPHY

- Abouserie, R. (1995). Self-esteem and achievement motivation as determinants of students' approaches to studying. *Studies in Higher Education, Vol. 20*.
- Biggs, J. (1987). *Student Approaches to Learning and Studying*. Melbourne: Australian Council for Educational Research.
- Biggs, J. (2003). *Teaching for Quality Learning at University*. Buckingham: The Society for Research into Higher Education.
- Entwistle, N. J. (1991). Approaches to learning and perceptions of the learning environment. *Introduction to the special issue. Higher Education, Vol. 22*.
- Entwistle, N., & Entwistle, D. (2003). Preparing for examinations: The interplay of memorizing and understanding, and the development of knowledge objects. *Higher Education Research and Development, Vol. 22*.
- He Ling, Li Jiahou, (2005). Promoting Students' Deep Learning, *J. Teaching and Learning of Computer, Vol. 5*.
- Heikkila, A., & Lonka, K. (2006). Studying in higher education: students' approaches to learning, selfregulation, and cognitive strategies. *Studies in Higher Education, Vol. 31*.
- Lindblom-Ylänne, S., & Lonka, K. (1999). Individuals ways of interacting with the learning environment - are they related? *Learning & Instruction, Vol. 9*.
- Marton F, Saljo R, (1976). On qualitative differences in learning: I- outcome and process, *J. British Journal of Educational Psychology, Vol. 46*.
- Marton, F., & Säljo, R. (1997). Approaches to learning. In F. Marton, D. Hounsell & N. J. Entwistle (Eds.), *The Experience of Learning. implications for Teaching and Studying in Higher Education*. Edinburgh: Scottish Academic Press. National English Curriculum Standards for general High School, R. The Ministry of Education, Beijing.
- Ramsden, P. (1979). Student learning and perceptions of the academic environment. *Higher Education, Vol. 8(4)*.

- Ramsden, P. (1991). *Learning to teach in higher education*. Hoboken: Taylor and Francis.
- Ramsden, P. (2003). *Learning to teach in higher education* (2nd ed.). London: Routledge Falmer.
- Richardson, J. T. E. (2004). Methodological issues in questionnaire-based research on student learning in higher education. *Educational Psychology Review*, Vol. 16, 347–358.
- Richardson, M., & Abraham, C. (2009). Conscientiousness and achievement motivation predict performance. *European Journal of Personality*, Vol. 23.
- Trigwell, K., & Prosser, M. (1991). Relating approaches to study and the quality of learning outcomes at the course level. *British journal of Educational Psychology*, Vol. 61, 265-275.
- Wilson, K., & Fowler, J. (2005). Assessing the impact of learning environments on student's approaches to learning. *Assessment and Evaluation in Higher Education*, Vol. 30(1).
- Yan Naisheng, (2013). Classroom Situations under the Perspective of Deep Learning, *J. Research on the development of Education*, Vol. 12.
- Zhang Hao, Wu XIujuan, (2012). Study on the Meaning and Cognitive Theory of Deep Learning, *J. China Educational Technology*, Vol. 10.
- Zhang Hao, Wu XIujuan, Wang Jing (2014). Study on the Evaluation Theoretical Structure Building of Deep Learning, *J. China Educational Technology*, Vol. 7.
- Zhang, L. (2000). University students' learning approaches in three cultures: An investigation of Biggs 3P model. *Journal of Psychology*, Vol. 134.