



A CASE STUDY OF DIFFERENTIATED INSTRUCTIONAL STRATEGIES CONDUCTED IN THE CLASSROOM WITH TEACHERS IN A CBSE SCHOOL, PALLAVARAM

1466

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ABSTRACT

The research study focused on the effects and implementation of using Differentiated Instruction (DI) in one Private CBSE School, Pallavaram, Chennai, Tamilnadu, in India. One group is taught circulatory system in the traditional one-size-fits -all instruction and the other group using the differentiated instructional mode. The practitioner modified the classroom instruction based on the students' interests. Students were surveyed after the implementation of the DI methodology to measure the impact of DI on their involvement in varied chosen standardized activities. Maslow's theory of hierarchy was used to collect the data, with reference to the researcher's observation. Since there was a gap in incorporating the differentiated instructional strategies with the results based on the Maslow's theory , hence the practitioner adopted the ten different standardized instructional strategies :- i) Create learning stations ii) Use task cards iii) Interview students iv) Target different senses within lessons v) Share your own strengths and weakness vi) Use the think- pair share strategy vii) Make time for journaling viii) Group students with similar learning styles ix) Questioning x) Know your purpose and try it as an action research with the experiment and controlled group Apart from the case study, a qualitative survey (attached as Appendix A) was also used to delve deeper into the understanding of DI in teaching Biology. This study is aimed at introducing Differentiated teaching strategies in teaching Biology to students of grade 7 in a private CBSE school. This paper deals to find out whether there is any significant impact of differentiated instructional strategies on the student interest and on the process of learning activities amongst grade 7 students.

Keywords: - Differentiated Instruction, Flexible Grouping, Multiple Intelligence, Inclusive Education, Biology

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INTRODUCTION

The use of differentiated instruction in schools is one strategy that may be utilised to make inclusion a reality. Differentiation, in Carol Ann Tomlinson's definition (2018) is the process of modifying instructions to suit specific requirements. The degree of diversification in either the content, method, product, or the learning environment determines the effectiveness of the teacher's instruction (Tomlinson, 2018). Differentiation refers to the efforts a teacher makes to address the variety in their classrooms. The finest learning experiences

are produced if the instructor reaches out to every learner in the classroom, whether through grouping or differentiation in the teaching methods or content.

The NEP 2020 emphasizes that teachers' responsibilities in the educational system would be to support learning and encourage active participation from pupils. Our regular teachers need to receive training in a variety of ways in order to make this a reality. The material delivery model used in India's teacher training programmes restricts the ability of normal teachers to use cutting-edge methods in the



classroom. Indian pupils are accustomed to rote learning techniques and do not engage in active learning. The majority of schools in India are grade-driven, which places enormous pressure on teachers to uphold standards while also attending to a variety of student needs. It's crucial to realise, however, that one of the main objectives of Indian educational institutions is to provide students with experiences that will prepare them for the rest of the world. Indian schools are no longer allowed to be indifferent to diversity in the classroom or to the acceptance of children with impairments. Regular instructors in Indian classrooms may cater to a variety of requirements in the classroom and ensure that NEP 2020 meets its aims to establish an inclusive education system in India with adequate teacher training and ongoing professional development programmes.

Theoretical Background

It was discovered that differentiated instruction simply does not satisfy the requirements of both high achievers and children with impairments in the classroom. One-size-fits-all fashion does not apply to education, and just as everyone has a choice in clothes, one-instruction does not fulfil the demands of all of the varied pupils in a classroom (Tomlinson, 2018). Students learn at different levels in a varied pace, and this must be acknowledged. In order to respond to the various requirements of their pupils, teachers must also approach a varied classroom with flexible instructions.

An Operational Definition

The use of differentiated instruction in schools is one strategy that may be utilised to make inclusion a reality. Differentiation, in Carol Ann Tomlinson's definition, is the process of modifying instructions to suit specific requirements. The degree of diversification in either the content, method, product, or the learning environment determines the effectiveness of the teacher's instruction (Tomlinson, 2018). Differentiation refers to the effort a teacher makes to address the variety in their classrooms. The finest learning experiences are produced if the instructor reaches out to every learner in the classroom, whether through grouping or differentiation in the teaching methods or content. Based on the learner's readiness, interests, or learning profile, the

instructor can differentiate six classroom components.

Purpose of the Study

This paper, explores the challenging concepts of inclusive practice within its context and how it relates to the definition mentioned.

1467

Objectives

- ❖ To find out whether there is any significant impact of differentiated instructional strategies on the student interest amongst grade 7 students.
- ❖ To find out whether there is any significant impact of differentiated instructional strategies on the process of learning activities amongst grade 7 students.

METHODOLOGY

This study is aimed at introducing Differentiated instructional strategies in teaching Biology to students of grade 7 in a private CBSE school. The teacher's understanding and approach in classrooms through interactive sessions to benefit grade 7 students and bring a change in their knowledge and understanding. Around 50 science teachers were given the survey to identify their strategies used by them in teaching students. For this the learners were divided in to two different groups; control group and the experimental group. The experimental group were given a chance to learn in various ways based on their interest and were given with a chance to exhibit what they have learnt in creative ways. a total of 40 students from each group were taken for the study.

Apart from the survey conducted for teachers (Appendix A), case study with two different learners who were considered as very different in their approaches to learning. (Appendix C & Appendix D) were also taken for further understanding of the learners' needs and the data was gathered with the below model with a group of learners, adapted with Maslow's hierarchy highlighting the specific needs in the six areas.

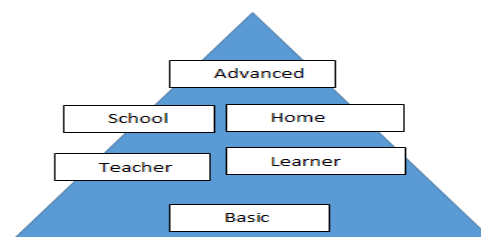


Figure 1- Maslow's Hierarchy model



Components of Theoretical Evidence of DI

Theoretical evidence of differentiated instruction can be linked to many theories and approaches like learning styles, Multiple Intelligence theory (MI) and the Zone of Proximal Development. Another theoretical underpinning for DI as it calls for the need to serve a varied student population.

a) Context- What is Inclusive Practice?

Inclusive education refers to all learners who, for different reasons, may find themselves at risk of marginalization or exclusion. It is about values and assumes that diverse groups of learners are of equal worth and have a right to be included. It does not focus on perceived individual weaknesses, but on the barriers to learning that individuals and groups of learners may encounter and it is about participation and learning from each other, not a fixed state but an evolving one.

b) Assessing the Needs of Learners

The needs of the learners are equally important as curriculum. The reason for carrying out a needs analysis is to identify skills and knowledge the learner already has, identify clearly what learners can achieve. How to increase on the sense of being responsible? How to determine appropriate teaching, identify the difficulties that may arise and understand the content that best suits the learners' needs. How can this be done? It is through interview with individuals, questionnaires, observation, focus group or through action research

c) Overcoming Resistance to Learning

There is a common understanding that theory of behaviorism propagates that people learn **only** when they want to learn, whereas humanist theory believes that language should be embraced by everyone. On the other hand, the common factors involved **in** element of change that can be resisted are: i) Motivation ii) Aptitude iii) Teaching quality iv) Confidence v) time vi) lack of resources. There should be an attempt made to address the balance in each individual learner.

D) Differentiated Teaching Methods

(Gardner ,1999) in his multiple intelligence theory, identifies eight distinct intelligences and argues that learners would be better served if teachers could teach in a number of ways so that the learning can also be assessed in many ways. Tomlinson (2010) suggests that differentiation is the process of ensuring that what a learner learns it with their mode of learning. (Anderson, 2003) suggests that differentiation is an organized, yet flexible way of proactively adjusting teaching and learning methods to accommodate each learner's learning needs and preferences. (Black - Hawkins, K., Florian, L. and Rouse, M, 2007) argues that school of high levels of inclusion can be entirely compatible with high levels of achievement and that combining the two is not only possible but essential if all children are to have the opportunity to participate fully in education. (Evans, J. and Lunt, I ,2002). aims to find out the views of a range of professionals in relation to 'inclusion'. The study was done by sending a questionnaire of mixed groups of professionals to address questions of 'inclusive education'. The study suggests that there are considerable obstacles in the way of 'full inclusion' and that schools as currently organised frequently find it difficult to meet the wide range of individual needs. (Florian, L. and Rouse, M, 2001). Considers on how some secondary schools in England have been able to respond to the conflicting demands of school improvement policies, as measured by high academic standards and the inclusion of pupils with special educational needs. (Forlin, C, 2001) investigates the potential stressors for teachers during inclusion. An increase in number of years involved with inclusion and participation in formal training were associated with a reduction in stress.

e) Formative approaches to involve learners.:

The formative interactions are means of investment in future learning few examples to quote are: learner transaction, counselling, encouraging collaboration among learners, periodical SWOT analysis and at the end reflect upon it.

FINDINGS AND SUGGESTIONS

Table 1: Significance of Mean difference between the teachers understanding on different dimensions in teaching Biology to Grade VII students

Variable with its dimensions	Mean	Standard Deviation	t value	Level of Significance
Student interest	4.28	.730	41.483	.000
Student Assessment	3.82	.619	24.134	.000
Lesson Planning	3.88	.773	35.492	.000
Usage of Content	3.76	.701	26.555	.000
Process of learning activities	3.44	.993	24.495	.000

1469

The above table shows the variables of student interest and indicates how the variables differed from each other.

The findings suggest that both the understanding and implementation of differentiated instruction showed two-tailed p-values of 0.000. The findings thus imply that differentiated instructions on the student assessment has a strong favourable influence towards teacher competency. The results thus suggest that, both the understanding and implementation of differentiated instruction had the better and improved results, thereby rejecting the null hypothesis.

As a result, the data of the differentiated instructions on the student assessment demonstrated that, teachers recognised the differentiated instructional approach as highly essential to be used in a diverse classroom.

The result also implied that differentiated instructions on the usage of content has a strong favourable influence towards teacher competency. The data of the differentiated instructions on the usage of content demonstrated that, teachers recognised the differentiated instruction approach as essential to use in a diverse classroom. The findings thus imply that differentiated instructions on the process of learning activities has a strong favourable influence towards teacher competency. The results thus suggest that, both the understanding and implementation of differentiated instruction had the better and improved results, thereby rejecting the null hypothesis. As a result, the data of the differentiated instructions on the process of learning activities demonstrated that, teachers

recognised the differentiated instruction approach as essential to be used in a diverse classroom.

Case Study

The school where the research was conducted is a private CBSE school at Pallavaram, Chennai, India. The teachers used for this research were all teachers taking science for middle school students.

The teacher agreed to use flexible grouping based on students' interests mentioned. Students were grouped accordingly in groups. Only 20 % of the teachers accepted the importance of DI and prepare as per the needs of the learners whereas 80% of teachers were unable to understand this comprehensively and were not aware of the strategies that could be used to teach a concept in a variety of ways and channels.

RESULTS

- Apart from the survey conducted for teachers (Appendix A & B-1.1) (Appendix C-1.2 & Appendix D- 1.3) were also taken for further understanding of the learners' needs. Two learners were taken for study from Grade VII who were considered as very different in their approaches to learning. Since there was a gap in incorporating the differentiated instructional strategies with the results based on the Maslow's theory , hence the practitioner adopted the ten different standardized instructional strategies :-
i)Create learning stations ii)Use task cards
iii)Interview students iv)Target different senses within lessons v)Share your own strengths and weakness vi)Use the think- pair share strategy vii)Make time for journaling viii)Group students with similar learning



styles ix) Questioning x) Know your purpose and try it as an action research with the experiment and controlled group. For doing the above the practitioner chose the above mentioned strategies on how to conduct the need analysis by the practitioner to highlight the specific needs.

CONCLUSION

Inclusive teacher practice should be flexible, coherent and proactive, take into account a diversity of learning styles and learning preferences. To conclude a teacher should adjust teaching methods to accommodate a learner's needs matching to the learner's readiness for learning.

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