

A study on IT enabled education and its various dimensions for dyscalculia students of varied learning styles at secondary level in Alappuzha district

¹Ms.Resmi V, ²Dr.Sunila Thomas

¹Research Scholar, ² Associate Professor,

¹Bharathiyar University, Coimbatore, Tamilnadu

²Titus II Teachers College, Thiruvalla, Kerala

Email- ¹resmivpky006@gmail.com , ²sunilajoji@gmail.com

Abstract: *The study deals with the merits and demerits of IT Enabled Education in Secondary School students and how much it helpful for Dyscalculia students of varied learning styles to attain positive attitude towards certain subject. The data collected from teachers of Alappuzha District. A Semi structured Interview is adopted for this study. The tool used is questionnaire. Major findings are:*

IT Enabled Education (ITEE) is very helpful to both teachers and students to meet the global challenges.

Lack of computers and insufficient training among teachers bring in more confusion with regard to knowledge attainment of students.

This may also lead to difficulty in transaction of curriculum in proper manner.

Dyscalculia students were actively participated in IT enabled group works.

Theorist and Pragmatist have more attitude than Activist and Reflectors.

Keywords: *IT Enabled Education, Dyscalculia, Learning Styles*

1. INTRODUCTION:

This is a competitive world. Therefore, the education system in any country should be able to develop skills and intellect of students to compete at global level. For this the use of latest technology is a must and there is an urgent need to integrate IT with education to fulfill this need. Kerala schools are already technology enabled. All schools migrated completely to free software. In the second stage is to enable the teachers to use the software as a tool which will help them transact the curriculum more effectively and efficiently. Kerala has excelled in the process of educational renovation, than any other state. Our state is a model for the modification of educational outlook in national level and this has been made possible by the innovative teaching methods. It is in this scenario that we are exploring the relative importance of Information Technology and IT enabled education. Rapid advancement in Science and technology has an impact on all the realms. Thus IT skill sets have become one among the important life skills in this modern era. Castro, et. Al(2011), Donnelly, et. Al(2011) and Rubagiza, et. Al(2011) have recently studied about ITEE and have represented their findings and suggestion in their respective research studies. Audio visual aids played an important role in classroom teaching and learning. But in the present context of constructivist learning by the students learning using interactive software has been gaining more importance. I.T Vision 2010, the report submitted by the committee under the leadership of Prof. U R Rao, has stated that the main objective of IT education should be the empowerment of teachers, effective curriculum transaction and the creation of opportunities for acquisition of IT Skills. The Kerala Governor in his Policy Declaration also specified that the present IT education should be changed to IT enabled Education. In the changing society, knowledge has become one of the important factors among the resources. The role of IT is becoming more important thereby making the process of knowledge productivity and interaction easier. So the upcoming generation should be able to claim the monopoly of Information & Communication Technology. New Technologies are implemented in current educational system. In this age of technology to what extent IT Enabled Education is a success need to be studied and its advantages and limitations have to be identified. So a study that highlights various aspects of IT Enabled Education was thought to be imperative. And also studied that IT Enabled education is beneficial to all kind of students especially the dyscalculia students will actively participated in ICT classes or not. And also we have to accept the fact that students have different learning styles. Hawk and Shah (2007) are of the opinion that faculty are likely to reach only some of the students in a given course, if they assume that all students learn the same way or that ICT teaching approach will suit all students. Thus, the faculty who are consciously aware of their students learning styles as well as their own, are in a position to make more informed choices in course material and design learning process to broaden the opportunities for effective learning in their courses. It is essential that the teachers in our classrooms should provide appropriate learning environment suitable to the learning styles of students so

that they can experience see & feel mathematics which would ultimately develop them a positive attitude towards the subject.

Groups of students work together in search for understanding the meaning or solution or in creating an artifact of their learning such as a product. But some times learning disability may work against this group work; disabled students will not get a chance for group interaction. Learning disabilities is a generic term that refers to a heterogeneous group of disorders manifested by significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning or mathematical abilities. So the disabled students lost positive attitude towards certain subject. The IT Enabled education may act as a guide for specific difficult area of particular subject. So he can overcome that disability through technology. Drawing of mathematical figures may easy with the help of Geogebra software.

2. OBJECTIVES:

- To assess the functioning of IT enabled education (ITEE) in schools.
- To find out the opinion of teachers about IT enabled education (ITEE) and its functioning.
- To find out the drawbacks of IT enabled Education (ITEE).
- To find out how much dyscalculia students of varied learning styles will involve in IT enabled education.
- To find out dyscalculia students mathematical attitude may increase through IT enabled education
- To find out which learning style group has more mathematical attitude.

3. METHODOLOGY:

A survey method was conducted to gather opinion of teachers regarding the implication of IT enabled Education. For this purpose a sample of 60 teachers were selected from Aided and Government secondary schools of Alappuzha district. A semi-structured interview was adopted. For this purpose an interview schedule was prepared by the investigator. The teachers were given freedom to express their opinion freely.

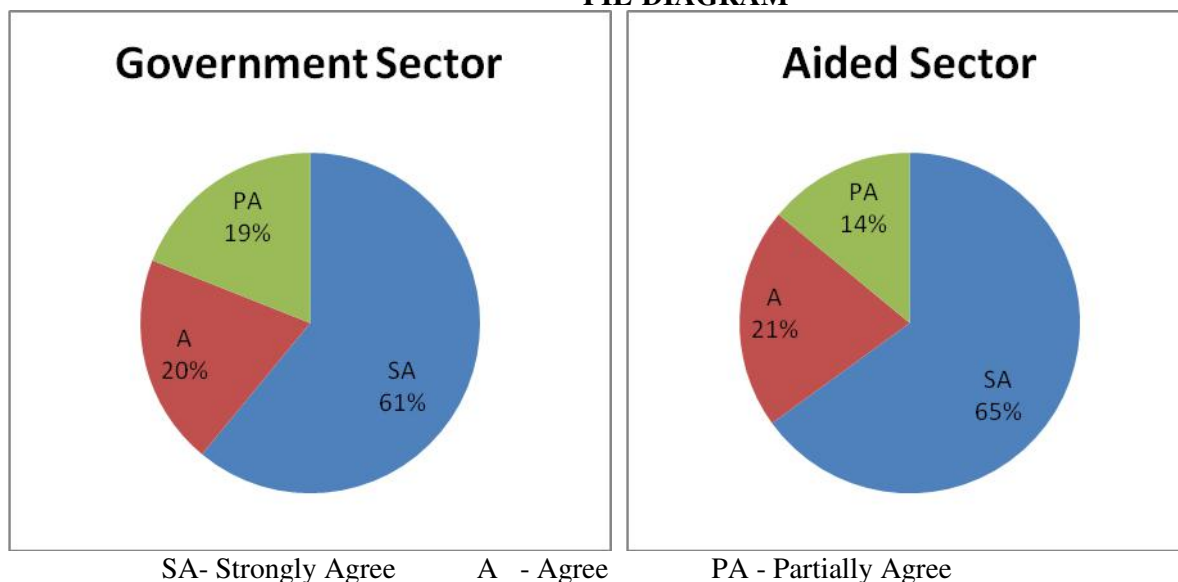
For finding dyscalculia students, investigator prepared questionnaire and used attitude scale for collecting data. The investigator used the Learning style Inventory to categorize students based on their learning styles. The investigator selected the 4 category of learning styles named Pragmatist, Activist, Reflectors and Theorist based on Honey and Mumford categorisation of learning styles. The inventory comprises 40 items (10 items equally distributed for each of the 4 learning styles). prepared and standardized by Dr. Sunila Thomas and Dr. A Sudharma.

4. DATA ANALYSIS AND INTERPRETATION:

4.1. Teachers Opinion:

Data was collected from 60 secondary school teachers belonging to Aided and Government sector. Their opinion was collected through semi- structured interview. Majority of teachers from Aided & Government sector have strongly agreed the use of ITEE. Because of lack of proper training and insufficient infrastructure facilities small percentage of teachers in government and aided sector could partially agree with ITEE. The details of the data are represented in following Pie- diagram.

Figure 1
PIE-DIAGRAM

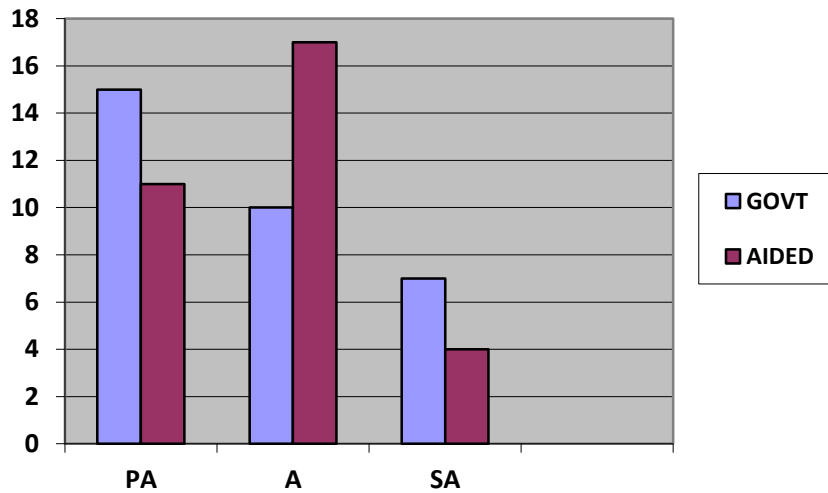


The Pie- Diagram representing the attitude of teachers towards IT Enabled Education in Government and Aided sector.

4.2. Students Attitude:

A sample of 300 students from Aided and Government sector were selected, of which 80 Dyscalculia students were identified through questionnaire. They were then administered mathematical attitude scale. It was found that Dyscalculia students did not have strong positive attitude towards mathematics but they had highly positive attitude towards ICT based mathematical classes. learning style inventory was also administered to categorize dyscalculia students based on their learning style. A total of 64 dyscalculia students, 16 from each learning style group was selected of which 32 were from government sector and 32 from aided sector.

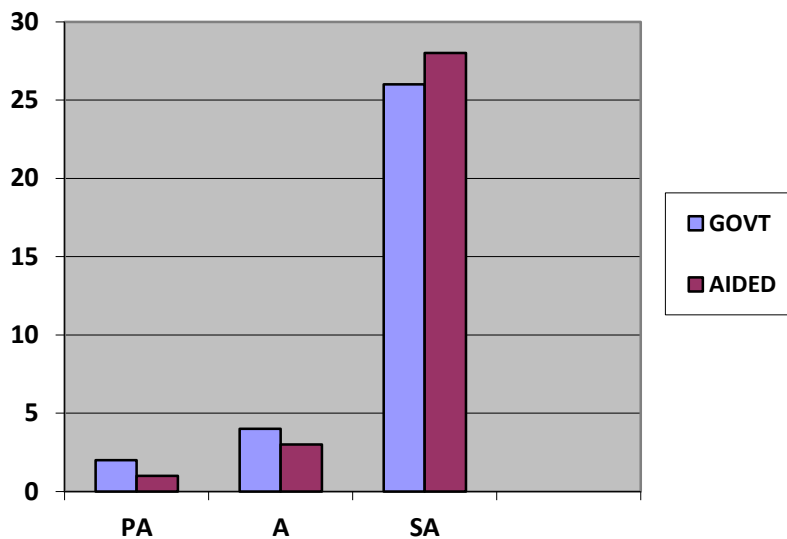
Figure 2.1



PA - Partially Agree A - Agree SA- Strongly Agree

The Chart representing the attitude of Dyscalculia students towards Mathematics Education in Government and Aided sector.

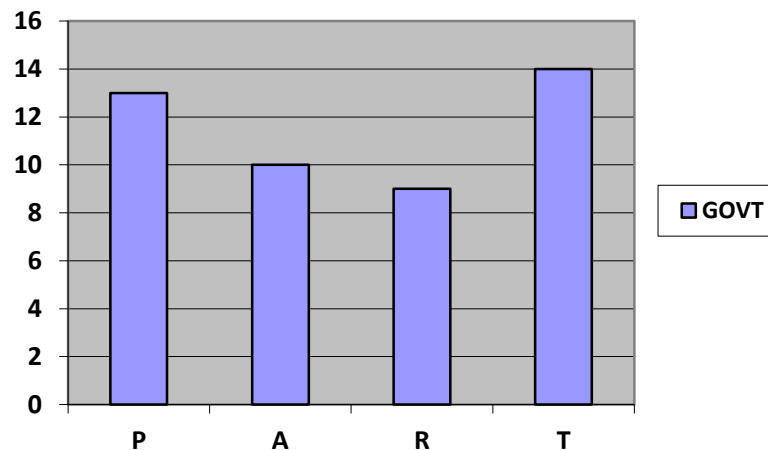
Figure 2.2



PA - Partially Agree A - Agree SA- Strongly Agree

The Chart representing the positive attitude of Dyscalculia students towards IT Enabled Mathematics Education in Government and Aided sector.

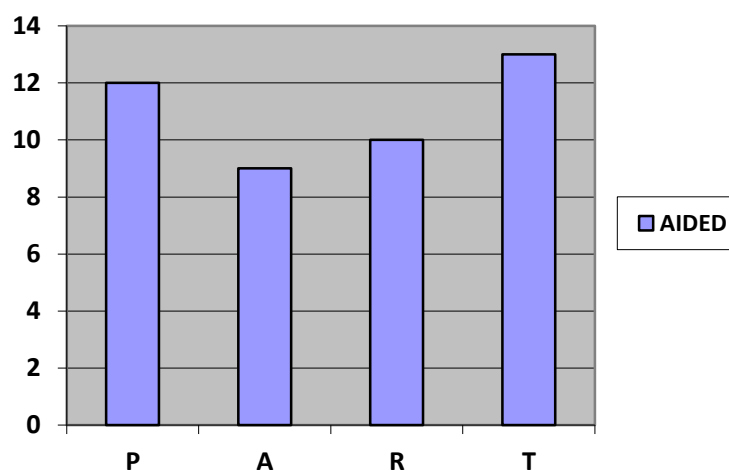
Figure 3.1



P - Pragmatist A - Activist R- Reflectors T - Theorist

The Chart representing the attitude of Dyscalculia students with varied learning style towards IT Enabled Mathematics Education in Government sector.

Figure 3.2



P - Pragmatist A - Activist R- Reflectors T - Theorist

The Chart representing the attitude of Dyscalculia students with varied learning style towards IT Enabled Mathematics Education in Aided sector.

5. FINDINGS:

- IT enabled education helps in one-to-one interaction.
- It is a great motivator.
- IT Enabled Education is very helpful to both the teachers and students to meet the global challenges.
- It offers freedom to experiment with different modalities.
- Instantaneous response/immediate feedback to the answer elicited from pupils is possible.
- It is self pacing.
- Teachers can devote more time to each individual.
- It is more beneficial for introverts as they get an opportunity to share their queries and doubts with the teacher personally.
- It provides individual attention and motivates learners to learn more and more rapidly.
- The multimedia employed in IT Enabled Education helps to understand difficult concepts as they appeal to learners through different senses.

- IT Enabled Education is a self directed learning-students can decide when, where and what to learn.
- It gives positive attitude towards subject.
- Dyscalculia students can overcome mathematical learning disability in specific area through IT enabled education
- Different learning style groups have more or less same attitude towards IT enabled mathematical class but Theorist and Pragmatist exhibit more positive attitude than Activists and Reflectors.

6. DISADVANTAGES:

- May feel overwhelmed by the informational resources available.
- Overuse of multimedia may divert the attention from the content.
- Learning becomes too mechanical.
- Non availability of good instruction package. Lack of computers and insufficient training among teachers bring in more confusion with regard to knowledge attainment of students. . This may also leads to difficulty in transaction of curriculum in proper manner.
- Lack of infrastructure.
- Misuse of Technology by the students.

7. CONCLUSION:

As the traditional method of teaching and learning questions the very existence of the learner in the society, it is necessary that the students should keep abreast with the innovative technology based teaching methodology as well as the highly informative multimedia techniques. Thus we cannot nullify or neglect the importance of Information Technology in the present educational context. The child should be able to use the computer based learning activities by himself. It gives positive attitude towards subject. So Dyscalculia students with different learning styles can overcome mathematical learning disability in specific area. Thus IT education could play an eminent role in the construction as well as the re-organization of knowledge by each child and thereby creating changes in educational field. In the present scenario the implementation of IT Enabled Education if not done in the proper manner, would create difficulty in curriculum transaction. The following suggestion may help to avoid the problems in ITEE.

8. SUGGESTIONS:

- IT enabled education should not be considered as the only method of teaching a subject. Instead ITEE can be used more frequently in addition to other modes like discussion, cooperative learning, sessions etc.
- Over usage of IT should not dehumanize teacher.
- Provide better training to teachers for better functioning of ITEE.
- Ensure suitable infrastructure facilities to school.
- Enough computers should be provided in the computer lab for the students to use.
- Classroom should be furnished with computers so that ITEE is more feasible.
- Rearrange Time-Table in a suitable manner.
- Curriculum should be restructured.

REFERENCES:

1. Nanda, V. K. (1998). *Modern techniques of teaching*. New Delhi: Anmol Publications, Pvt. Ltd.
2. Sagar, K. (2005) *ICTs and Teacher training*. Delhi: Authorstress.
3. Castro S., Jose J., & Aleman, E. (2011). Teachers' opinion survey on the use of ICT tools to support attendance-based teaching. *Computers & Education*, 56, (3), 911-915.
4. Donnelly, D., McGarr, O., & O'Reilly, J. (2011). A framework for teachers' integration of ICT into their classroom practice. *Computers & Education*, 57, (2), 1469-1483.
5. Rubagiza, J., Were, E., & Sutherland, R. (2011). Introducing ICT into schools in Rwanda: Educational challenges and opportunities. *International Journal of Educational Development*, 31, (1), 37-43.
6. Siddiqui, M.H. (2004). *Encyclopaedia of educational technology*. New Delhi: APH Publishing Corporation.
7. IT @ School (2011). *Activities*. Retrieved October 30, 2011, from [https:// www.itschool.gov.in/activities.php](https://www.itschool.gov.in/activities.php).