ATTITUDE TOWARDS INDIVIDUALIZATION IS BEHIND THE SUCCESS IN LEARNING SCIENCE THROUGH COMPUTER TECHNOLOGY

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Abstract
Attitude is the dimension of the affective domain and also one aspect of an individual's personality. Attitude is reflected in reactions to events, other individuals, objects, or instruction. Technology has become an integral part of higher education instruction. Those who advocate technology integration in the learning process believe it will improve learning and better prepare students to effectively participate in the 21st century workplace (Sathish Keethinedi, 2012; Shih, et.al ,2012). Given its increased use, it is important to understand how instructional technology and the technologically rich environments are influencing student attitudes toward learning. An important aspect in successfully implementing instructional technology is user acceptance, which may be influenced in a great deal by users' attitude. Various studies have addressed the issue of student attitude toward instructional technology, attitude towards individualization and specifically toward computer technology and technologically enriched learning environments. (Mohanty, 2010).

It is important to note that the high correlation between attitude and the success rate in use of technology as an educational tool. "Positive attitudes toward technology can produce a widespread use of different technologies; but negative attitudes can have the opposite effect". Liuand Che- Hao, (2008); Mullins et.al, (2011), insists that attitude is an important construct and must be measured because of its usefulness in predicting behaviour. This line of inquiry about attitudes has brought most researchers to the conclusion that the use of Computer technology leads to more positive student attitudes than the use of conventional instruction. According to Kageni Njagi, et.al. (2003); both males and females had reasonably good attitudes to computer technology, but generally males were found to have a better attitude. The results of this study also agree with similar studies where gender was found, not only to be related to attitude towards computer technology, but more specifically, there was a difference in attitude between males and females.

Key Words: Attitude towards Individualization, Technologically Rich Environments, Computer Technology, Positive Attitudes.

Introduction
Computer technologies in education have had a profound effect on the system of education worldwide. Technology allows student to become much more engaged in constructing their own knowledge. Cognitive studies show that attitude and ability are the key factors for successful learning. Technology caters the need of millions of people around the world. It improves the ways of learning and improvised the dissemination of knowledge. It enables learners to sit in a comfort zone and learn when they are mentally ready to learn. This individualization in learning makes individuals, lifelong learners and prepares them for the 21st century.

Importance of Learning Science through Technology
It allows student to learn at any time any place, any path and any pace. This flexibility is often found to be most successful in independent, motivated learners. Science is a subject in which; sequential content builds upon previously acquired information. So science learning must motivate interest, be meaningful as well as possess purpose (Ediger & Roa, 2012). Interest too is a powerful factor in learning, which might wane if content becomes senseless. Gaps in achievement hinder possibilities of continuous grow in academic discipline of science. As seamlessly as possible pupils must perceive order in learning science. Though the computer learning platform loses the social component; learners gain considerable flexibility in how to meet their learning goals individually and/or collaboratively. Learners need to be involved in ongoing activities and experience successful due to interest factor. Many research studies proved that the computer technology is the only remedy which has to be emphasized for in depth learning.

Need for the Study
The implementation of technology seems to be very significant for the developmental process in the educational sector. Though ICTs are potentially powerful tool for extending educational opportunities, meeting learners esteem needs is the salient and a quality reward system is poignant. In this system of learning, learners need to learn upon themselves and trust their own thinking in a collaborative setting. It has to promote quality feelings, attitudes as well as facilitate the acquisition of basic skills. Hence it is very much necessary to measure the attitude of students towards such individualized system of learning through computer technology.

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In this study; the researcher has used a tool called Attitude towards Individualization in a classroom, where the entire pupil in the classroom has access to the computer for learning science through online.

Attitude towards Individualization - Description of the Tool
The prejudices against the use of computers for education need to be identified among learners; because the internal environment of the learner may influence, when opportunity to use computers for learning science was provided to them. An inventory was specially prepared to know about the preference of the learner to have individualization of instruction in varying learning situations. The behaviour comprises of co-operative learning, peer tutorial behaviour, social adjustability and concern for other classmates while learning through computer mediated packages. The inventory developed identifies whether the learner is positive or negative in their attitude towards individualized learning. This tool has two dimensions as;
- Positive attitude towards Individualized Instruction
- Negative attitude towards Individualized Instruction

This tool consisted of 27 statements, out of which 21 statements are positive and the rest of the statements are negative, for identifying the student's Attitude towards Individualized Instruction.

Table-1, Distribution of Items Under Individualized Instruction

S. No	Category	Item Numbers	Total
1	Positive attitude towards Individualized Instruction	1,2,3,4,5,6,7,9,10,11,12,14,15,16,18,19,20,21,25,26,27	21
2	Negative attitude towards Individualized Instruction	8,13,17,22,23,24	6

Scoring
The scoring for the tool was evolved after discussions with the educational experts. A three-point measurement scale was developed and the respondent had to select and put a tick mark in any one of the column from 1 to 3 (agree, neutral & disagree) as per his Attitude towards Individualized Instruction. For example, if the student selected first column for a positive item, one mark would be awarded, if he chooses column no.2, two marks would be given for the same item. If column no.3 was selected, 3 marks would be awarded. For the negative statements, the marks were provided in the reverse order as 3, 2 and 1 for the column no. 1, 2 and 3 respectively. The maximum score possible for the tool Attitude towards Individualized Instruction is 81.

Hypothesis
When the learners are tested for their Attitude towards individualization, there is no significant difference between the external independent variables with respect to their mean attitude scores.

The External Variables Selected
Level of education, Gender, Computer knowledge, Locality of the institution, Educational Environment. To find out whether there is any significant difference between mean scores of different categories of learners in terms of Attitude Towards Individualization, the 't' / F- test is applied and results are presented in the Table: 2.

Table-2, Significance of Difference between Mean Scores of Different Categories of Learners in Terms of Attitude towards Individualization (AT I)

Variables		ATI score			Test	'p'	Significance
		Range	Mean	SD			
Level of education	School	45-79	64.0	10.0	t- value 1.917	0.0598	NS
	College	51-79	69.1	08.0			
Locality of the institution	Rural	45-78	64.5	10.2	t- value 0.896	0.3735	NS
	Urban	51-79	66.6	09.0			
Gender	Male	51-79	72.8	05.5	t- value 10.598	0.0001	S
	Female	45-70	57.3	06.2			
Computer knowledge	Nil	45-78	62.7	09.7	F- value 2.090	0.1323	NS
	Basic	51-79	66.0	09.5			
	Done a course	51-79	69.2	09.4			
Educational Environment	State Board	45-78	63.5	09.6	F- value 3.475	0.0371	S
	Matric	51-79	63.8	10.3			
	CBSE	54-79	70.8	07.3			

Table-3, ANOVA

Variables	ATI Score	Sum of Squares	Df	Mean Square	F-Value	Significance
Computer knowledge and ATI score	Between Groups	381.289	2	190.645	2.090	0.132 (NS)
	Within Groups	5654.311	62	901.199		
	Total	6035.600	64			
Educational environment and ATI score	Between Groups	608.398	2	304.199	3.475	0.037 (NS)
	Within Groups	5427.202	62	087.536		
	Total	6035.600	64			

The above table shows that the differences between mean individualized scores of different categories of learners in terms of Attitude towards Individualization do not attain the level of significance in the categories such as Level of education, Locality of the institution and Computer knowledge. In Gender category, the mean scores for male and female differ significantly at 1% level. The mean individualized scores of students based from different school environment differ significantly at 5% level of significance.

Findings

When the learners are tested for their Attitude towards individualization, the mean individualized scores will not be significantly different, for the following external independent variables such as, Level of education of the learner, Locality of the institution and computer knowledge and there is significant difference in the cases like Educational environment and Gender of the learner. The performance of students who use computer technology for learning mostly depends on the internal factors like Aptitude and Attitude as proved by the earlier research (Liuand Che-Hao, 2008; Seery, Michael. 2009). Aptitude is the cognitive factor for readiness in learning and for integration of knowledge. In this study, most of the learners' attitude towards the internal factor individualization is positive, and they prefer individualization and hence, there exists no significance among the various group of learners' in terms of their mean score.

It is inferred that the male and female learners are significantly different in their Attitude towards individualization, The learners from different school environment also differ in their Attitude towards Individualization

Conclusion

The implementation of technology seems to be very significant for the developmental process in the educational sector. In this system of learning, learners need to learn upon themselves and trust their own thinking in a collaborative setting. The study also proves that; this system of learning has promoted quality feelings, attitudes as well as facilitate the acquisition of basic skills in learning science. Hence it is concluded that, those who advocate technology integration in the learning process believe it will improve learning and better prepare students to effectively participate in the 21st century workplace.

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