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Attitude towards Technology integration in the Classroom among School Teachers: A Study on Perception, Acceptance, and Implementation of Educational Technologies

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Abstract

The use of technology in education is becoming more and more common as a result of scientific and technological advancements. Studies on teachers' views on the use of technology in the classroom are now more important than ever because of this circumstance. The purpose of the current study was to investigate the association between autonomy behaviors and teacher attitudes toward the use of technology in the classroom. Data gathered from a total of 282 teachers was used for analyses. The analysis's findings indicate that teacher opinions toward the use of technology in the classroom vary more by education level than by gender, age, or factors related to school administration or location. The teaching process autonomy and professional communication autonomy behaviors of the teacher strongly determine their attitudes toward technology use in education, in that order of importance.

Keywords: Attitude towards technology integration and School teachers

Introduction

Although there are numerous aspects that contribute to effective technology integration, the most crucial one is the instructors' competency and capacity to adapt instructional technology activities to the requirements of their pupils. Teachers are knowledgeable about their subject matter and methodology, but they frequently learn alongside pupils when it comes to technology. The first-level technological skills that teachers concentrate on teaching pupils include how to use the technology, but many teachers overlook the second-level skills of knowledge integration and a deeper comprehension of information analysis (Fulton, 1977). According to Wignall (2003), new teachers desired to use technology and had the necessary technical skills, but they were unsure of how to incorporate it into teaching and learning. Information technology, according to Bauer and Kenton (2005), is a useful tool for expanding educational opportunities.

Student motivation is a reason why technology integration is encouraged in schools. Computer technology used in English as a Foreign Language classes has resulted in a high percentage of students showing more motivation (Izadpanah & Alavi, 2016). And again, in English Language Arts courses, it has been shown there is a need for teacher professional development in student-focused technology use since the learning of English increases greatly with the integration of technology in academic classes (Davidson, Richardson, & Jones, 2014).

Student-centered technologies have not only increased student motivation and academic performance, but interactive technologies can lead to differentiated instruction through which students have again shown higher motivation. Interactive technology is changing the philosophy of technological and pedagogical instruction by allowing teachers to adapt their lessons to the differing needs of students (Levin & Wadmany, 2006). Due to this development of student-centered technologies, pre-service teacher education is able to adapt to meet the needs of 21st century students and teachers (Mulholland, 2006; Janssen & Lozaonder, 2015). Along with technology training, research is needed to analyze whether teachers are integrating the technology that they they are learning in their professional development sessions or other technology trainings in their classrooms (Rehmat, & Bailey, 2014).

In their study, Karsenti and Fievez (2013) reviewed over 20 studies on the subject and summarized an impressive list of such advantages and benefits: tablets increase motivation; provide easier access to academic-educational information, its organization and sharing; foster learning and academic performance; facilitate a wider range of teaching and learning strategies; improve the reading experience; encourage productive communication and cooperation between students and teachers and among the students themselves; improve the level of technological literacy (although the current generation of students is characterized by a higher level of this literacy versus their predecessors to begin with); nurture creative thinking; assist teachers with the evaluation process; make it easier to learn writing skills; make it easier to organize tasks and assignments in class; and significantly help students with learning deficiencies. The study itself included surveys and in-depth interviews with more than 6,000 students and over 300 teachers. While all its findings were compatible with the above advantages and benefits of tablets as an academic-educational aid, use of the device in class was also found to involve several significant disadvantages that must be considered. Both students and teachers agreed in their ranking of the disadvantages from major to minor: tablets constitute a significant source of diversion for students from the class and its contents (via games, leisure apps, and sending personal messages); writing on tablets is difficult and frustrating; the process of organizing work on tablets is difficult and complicated; most textbooks have yet to be translated into a digital version and are not available on tablets (or on any other technological-digital device); and in general, use of tablets as an academic aid might be detrimental to students academic performance. The most recent study conducted on the use of tablets as study implements in class in the Israeli educational system was published several years ago by Meishar-Tal, Shonfeld, and Ran (2016) and dealt with the digital learning environment, where the traditional study implements (textbooks, notebooks, and writing tools) are replaced by advanced technological-digital learning implements (tablets and laptops). In this qualitative study, 12 teachers in whose classrooms the experiment was carried out were interviewed, expressing their opinion on introducing tablets in their classroom as the main learning accessory

Need for the Study

Technology integration does not include teachers doing the same thing for all of their students or having the same specialized knowledge to be proficient technology users, as suggested by Wepner, Tao, and Ziomek (2006). Technology integration can only be successful if teachers are aware of when, how, and why to employ technology in the classroom. The technological skills needed for chats, websites, databases, audio and video linkages, electronic conferencing, email, picture publishing, word processing, and numerical processing must be mastered by every instructor. Additionally, the teaching and learning processes need to be carefully planned, using tools like computers, radio, television, online discussions, and virtual learning environments. Additionally, it is necessary to differentiate between team learning, inductive learning, and individual learning.

Technical competencies, teaching learning organization and principles of learning need to be properly integrated.

Mediated learning necessitates technological pedagogical skills. The convergence of media literacy, media literacy skills, and micro teaching techniques should be acceptable. Every educator who is interested in historical or contemporary media must understand and put these concepts into practice. They should also be skilled in requesting, accessing, analyzing, applying, and assessing information. They also need to be knowledgeable about the national ethos, which takes the form of philosophy, culture, and social fabric, as well as psychology of human development, particularly learning psychology, which includes motivation, learning disabilities, and measurement. Finally, they need to be proficient in conveying the material through presentation, communication, and management skills. All schools will now offer computer instruction according to a policy decision made by the Tamil Nadu government. In Tamil Nadu, 500 schools now have access to computers as part of the introduction of computer education, and more schools are likely to get them in the future. As a result, now is the ideal time to develop and implement CAI modules across a variety of disciplines at the school level, as well as to assess how much more effective they are than traditional methods of instruction.

Variables of the Study

Dependent Variable: Attitude towards Technology Integration of the Classroom

Independent Variables:

1. Gender : Male / Female
2. Age : Upto 30 / 30 &above
3. School Management: Government / Self-financing
4. School Locality: Rural/Urban

Objectives of the Study

1. To measure the level of Attitude towards Technology Integration of the Classroom among the school teachers.
2. To find out the significant influence of independent variables viz. Gender, Age, School Management and School Locality on Attitude towards Technology Integration of the Classroom among the school teachers.

Hypotheses of the Study

1. School Teachers have low level of Attitude towards Technology Integration of the Classroom among the school teachers.
2. There is a significant difference in the Attitude towards Technology Integration of the Classroom among the school teachers in terms of gender.
3. There is a significant difference in the Attitude towards Technology Integration of the Classroom among the school teachers in terms of age.
4. There is a significant difference in the Attitude towards Technology Integration of the Classroom among the school teachers in terms of school management.
5. There is a significant difference in the Attitude towards Technology Integration of the Classroom among the school teachers in terms of locality of school.

Sample of the Study

A stratified representative sample of 282 teachers constituted from twenty schools recognized by the Department of School Education, Tamil Nadu, situated in the Madurai District with due representation given to the select independent variables involved in this study.

Tool used

- Attitude towards Technology Integration of the Classroom Scale constructed and standardized by Vellaichamy, K.(2018)

Statistical Techniques used

1. Mean
2. Standard deviation
3. t-test for significance of difference between the means of large independent samples.

Analysis and Interpretation

Hypothesis 1: School Teachers have low level of Attitude towards Technology Integration of the Classroom among the school teachers.

Average score of Attitude towards Technology Integration of the Classroom among the school teachers is 70, while the theoretical average is 75. Hence, the teachers have below average level of Attitude towards Technology Integration of the Classroom among the school teachers. In other words, teachers have low level of Attitude towards Technology Integration of the Classroom. **Hence, hypothesis 1 is accepted.**

Hypothesis 2: There is a significant difference in the Attitude towards Technology Integration of the Classroom among the school teachers in terms of gender.

Table 1: Statistical Measures of Attitude towards Technology Integration of the Classroom among the school teachers in terms of gender.

Variable	Sub variables	N	Mean	S.D	t value	Level of significance at 0.05 level
Gender	Male	105	69.19	22.10	-0.941	Not Significant
	Female	177	71.73	21.56		

It is evident from above table 1 that the obtained t-value -0.941 is less than the table value 1.96 at 0.05 level of significance. This shows that there is no significant difference between male and female teachers in terms of their Attitude towards Technology Integration of the Classroom. **Hence the hypothesis 2 is rejected.**

Hypothesis 3: There is a significant difference in the Attitude towards Technology Integration of the Classroom among the school teachers in terms of age.

Table 2: Statistical Measures of Attitude towards Technology Integration of the Classroom among the school teachers in terms of age.

Variable	Sub variables	N	Mean	S.D	t value	Level of significance at 0.05 level
Age	Upto 30	78	72.41	22.83	1.659	Not Significant
	30 &above	204	67.53	20.17		

It is evident from above table 2 that the obtained t-value -1.659 is less than the table value 1.96 at 0.05 level of significance. This shows that there is no significant difference between the age group of upto 30 and 30 & above years in terms of their Attitude towards Technology Integration of the Classroom.

Hypothesis 4: There is a significant difference in the Attitude towards Technology Integration of the Classroom among the school teachers in terms of school management.

Table 3: Statistical Measures of Attitude towards Technology Integration of the Classroom among the school teachers in terms of school management.

Variable	Sub variables	N	Mean	S.D	t value	Level of significance at 0.05 level
School management	Government	156	70.53	21.89	-2.702	Significant
	Self-financing	126	76.92	17.83		

It is evident from above table 3 that the obtained t-value -2.702 is greater than the table value 1.96 at 0.05 level of significance. This shows that there is a significant difference between the Government and Self-financing school teachers in terms of their Attitude towards Technology Integration of the Classroom. **Hence the hypothesis 4 is accepted**.

Hypothesis 5: There is a significant difference in the Attitude towards Technology Integration of the Classroom among the school teachers in terms of locality of school.

Table 4: Statistical Measures of Attitude towards Technology Integration of the Classroom among the school teachers in terms of locality of school.

Variable	Sub variables	N	Mean	S.D	t value	Level of significance at 0.05 level
Locality of school	Rural	123	69.37	23.80	-2.251	Significant
	Urban	159	75.29	19.17		

It is evident from above table 4 that the obtained t-value -2.251 is greater than the table value 1.96 at 0.05 level of significance. This shows that there is a significant difference between the rural and urban locality schools teachers in terms of their Attitude towards Technology Integration of the Classroom. **Hence the hypothesis 5 is accepted**.

Conclusions

The Specific conclusions emerged out the present investigations are as follows:

1. The level of Attitude towards Technology Integration of the Classroom among the school teachers is lower than the average.
2. The school teachers Attitude towards Technology Integration of the Classroom is found more among
   - Self-financing school teachers than government school teachers
   - Urban school teachers than rural school teachers

Educational implications

The present investigation has revealed that the school teachers, in general are found to have low level of Attitude towards Technology Integration of the Classrooms among the school teachers. This vividly indicates that the technology integration in the classroom teaching can be constructed as a facilitating factor in academic processes in school education as on date. It can be derived that the teachers possess low level of attitude on technology integration in the classroom teaching, Hence the government has to take necessary efforts to enhance the attitude of school teachers in tune with the demands of the space and time contexts.

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