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"The Effects of Information Communication Technology (ICT) on Classroom Management at Secondary Level"

Anum Irshad[1], Muhammad Younas[2], Nabeela Hayat[3], Amjad Ali[4]

1. *Department of Education, City University Peshawar*
2. *Department of Education, City University Peshawar*
3. *CECOSS University Peshawar*
4. *Agricultural Research Station Swabi*

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KEY WORDS

Information Communication Technology, correlation, regression

ABSTRACT

The use of technology in education is of high importance. Information technology has a great impact on classroom management. The main objective of this study and independent variable was the use of ICT. The result of the reliability test indicated Cronbach's Alpha from acceptable to good range. Descriptive statistics and frequency analysis showed that the four variables under study exist, are being practiced, exert effects and contributing. Positive and significant differences ($p < 0.00$) were observed for all the four sub variables based on one sample t test. The result of the Pearson correlation suggested that the majority of elements statistically existed and were contributing effectively. Based on R^2 and F-statistics, the estimated coefficient $\beta = 0.632$ is statistically significant at $t = 10.468$ ($p < 0.01$). Regression results suggested that class management (CM) significantly depends on CMA having an aggregate effect of the determining variables. It was recommended that the use of ICT may be generalized over the whole population.

INTRODUCTION

Background of the Study

The use of technology is common everywhere. 21st century is the century of technolgy, especially in the field of education (Kim, 2007). The government of KP is giving importance to technology education and started new projects. Trainings and learning without technology are not possible now. A lot of factors influence education especially technology. Active classroom management is one of these factors, (Lim et. all 2005). IT has some significant effects on classroom management (Morrison et. all 2013).ICT has a lot of points of interest. ICT may make the classroom monitoring easy (Webb and Cox, 2004). Visual and sound relating learning is possible because of ICT.

Statement of the problem

The importance of ICT use on class management is highlighted in the study. It also explores the methods as to how ICT may be incorporated into education system.

Significance of the study

AS the use of technology is very important in the new scenario, therefore this study shows the importance of the IT with respect to classroom management. This study will be helpful for the policy makers that how important is the use of information communication technology in future.

Research objectives

The objectives of the study are as follow

- What is the contribution of "use of Technology" in classroom management?
- What is the contribution of technology use towards teaching management?
- What is the involvement of teachers in the use of technology towards behavior management of students?
- What is the contribution of teachers in the use of technology towards time management?

REVIEW OF LITERATURE

Information and knowledge cannot be spread without ICTs. In the whole woeld ICT is spreading as an important tool. ICTs in instruction have deep impacts for the entire education and training process (Snehi 2009). ICT as an instructional medium and learning medium is adopted in education system all over the world. (Snehi 2009). Many experts confirmed that application of ICT is positive and will advance the learning technique and make best use of the students' abilities (Finger & Trinidad, 2002). Classroom management is a difficult task and the use of technology can help teachers in classroom management. This will not only improve the teacher's skills but will also improve the learning abilities of the student. An important asset of a person is the time, and its management. A person who can manage time is always ahead in life (Khan et al., 2016). According to Mohanty (2013) the management of time is a fundamental component of education system. For teachers, the time management becomes more important, as they are dealing with building material of the nations. The accomplishment of teaching tasks is possible because of ICT (Peterson, 2010). Selwood & Pilkington (2005) found that teachers believed that ICT can help with fulfilling their tasks and make them gradually valuable. ICT has brought a change in teaching management and is widely being integrated into different ways

Corresponding Author's Email: *srobreeding@gmail.com*

in teaching management. Classroom management is a difficult task and the use of technology can help in class room management. It has been established that those teachers who developed organized invention in their study, encourage their students to learn and complete their objectives in increasingly simpler way (Anandan & Gopal 2011).

METHODOLOGY

Research design

A questionnaire was used for the collection primary data. Whereas the use of literature and different research studies were carried out for secondary data.

Population

There were 127 Public secondary schools in district Swabi out of which 77 boys and 48 were girls' schools. There are 4,439 teachers both male and female in government secondary schools in district Swabi. Out of these 2,723 are male teachers and 1,716 are female teachers.

Research instrument

Questionnaire i.e. EUTCM scale designed by Durak et. all (2017) was adopted for the collection of statistical data.

Pilot study (Reliability and Validity)

A Pilot study was carried out on a sample of 20 teachers both male and female secondary schools located in district Swabi to control the reliability of the questionnaire. To establish validity of the adopted questionnaire it was presented to reputed education experts of City University who validated it on the basis of face validity.

Data analysis

SPSS software was used for data analysis.

RESULTS AND DISCUSSIONS

Reliability Analysis of Variables:

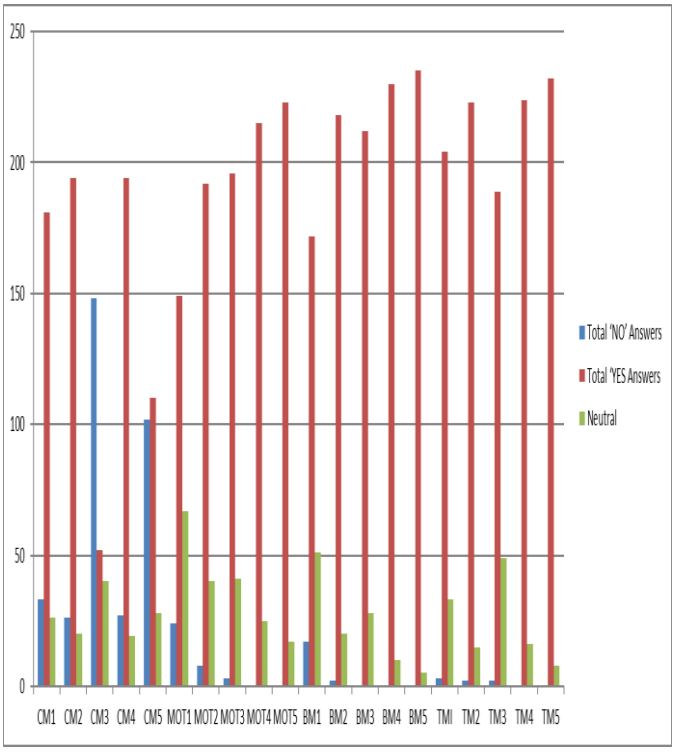
After recovering data, it was uploaded on SPSS 24 software. The following are the results of the reliability analysis of the variable of interest.

Table 1. Reliability of the variables

Variable	Cronbach's Alpha.
CM	.72
MOT	.68
BM	.79
TM	.75

The table1 indicated that the values ranged from .68 to .79 Cronbach's' which is an acceptable range. Bulman & Fairlie, (2016).

Fig 1. Frequency analysis of responses /elements



Corresponding Author's Email: *srobreeding@gmail.com*

Classroom Management

Figure 1 indicated that 28% say 'NO', 60.91% say 'YES' and 11.08% remain 'Neutral' out of total 1200 responses. However of the total 5 number of elements, one element, i.e. CM3 has appeared with greater numbers of 'NO' responses. According to Khokhar, A. & Javaid (2016) both teachers and students used ICT, for both, the academic and non-academic purposes. The study showed that most of the students and teachers can approach to new technology but the use of technology depends on the person who uses it. The study also establishes that new technology is important tool to maximized knowledge in classrooms and teacher should focus to give more knowledge to students by using new technology.

Management of teaching

Fig 1 indicated that 2.91% say 'NO', 81.25% say 'YES' and 15.83% remain neutral, suggesting that the very variable MOT is contributing. According to the survey conducted almost all the participant were on the opinion that use of technology have more benefits. It not only save our time but very helpful in the preparation of teaching materials and the students can get knowledge in an easy way. According to (Richardson, 2011), in developing countries the adoption of technology took time and undergo several stages. However according to our study now it is easier to adopt technology for teaching methods and it is an easy task as now all the teachers have access to internet and other facilities.

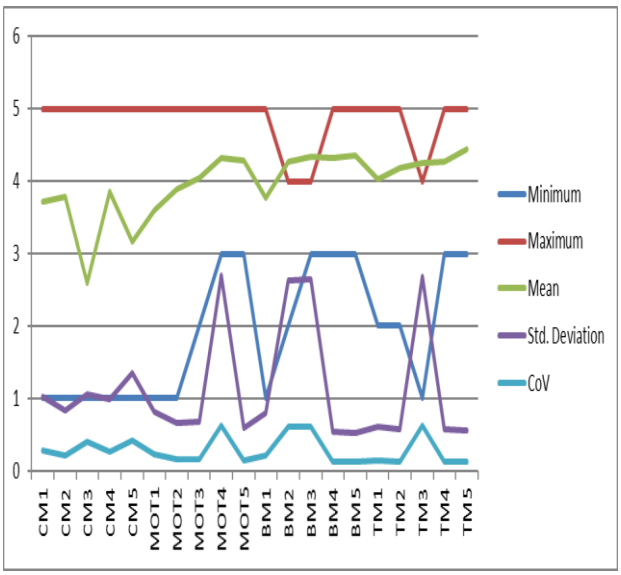
Behavior Management

The majority of the elements of variable BM were accepted by the respondents, 1.58% say 'NO', 88.91% say 'YES' and 9.5% remain 'Neutral', suggesting that, the variable BM was contributing (Figure 1). The study showed that the teachers were on the opinion that the use of technology improves the student behavior in term of confidence to participate in the classroom actively. Our results are in contrast to the opinion of Bingimlas (2009) that teachers are reluctant in adopting technology. He is on the opinion that effective integration of attitude of teachers and lack of facilities in developing countries is the major cause of decline in adopting technology. Woodrow (1992) mentioned a helpful behavior towards educational innovation for a positive change of scholastic performs and places.

Time Management

In the case of variable TM, the majority of the elements of variable TM were also accepted by the respondents (Figure 1). 0.58% say 'NO', 89.33% say 'YES' and 10.08% remain 'Neutral' suggesting that variable TM is contributing. The study showed that the use of technology saves the time of teachers and students, it also helps student in their assignment preparation, and the technology also helps the teachers to contact their parents.

Fig 2. Descriptive statistics of variables



Corresponding Author's Email: *srobreeding@gmail.com*

The descriptive statistics (Figure 2) showed the total number of respondents was N=240. The mean value which was more than 3, showed maximum respondents agreed on this particular statement. CoV of almost all elements of variable CM estimate at below 0.50, suggesting that the data on responses showed little variation. CoV of one element of variable MOT (MOT4) was varied high. The above figure suggested that the data on responses/elements were spread around their respective means closely (showed little variation); and that the variables were thus in a contributing position. Our results are in agreement with Ullah M et al. (2013) who worked on descriptive statistics on factors influencing student motivations to learn in Pakistan universities.

Table 2. One-Sample Test

	N	Df	Mean	Std. Deviation	Std. Error Mean	t value	P value	Mean Difference
CM	240	239	3.4200	.48086	.03104	13.531*	0.000	0.42000
MOT	240	239	3.9892	.45744	.02953	33.499*	0.000	0.98917
BM	240	239	4.1433	.39340	.02539	45.023*	0.000	1.14333
TM	240	239	4.2000	.38333	.02474	48.496*	0.000	1.20000

Classroom Management

Table 2 showed significant differences for CM at t = 13.531 ($p < 0.00$); suggested that the teachers should use ICT in classroom management, and ICT use promotes active engaging lesson for students. Our results are in agreement with Suleman et al. (2014) who found significant differences between the performances of students on the Academic Achievement Scores at Secondary School.

Management of teaching

It is evident from table 2 that significant difference at t = 33.499 ($p < 0.00$) were observed for MOT indicating that respondents have accepted that the use of ICT can save the teachers time and help in preparing teaching resources. According to MacAulay (1990) and Walker et all (1995) a classroom which consist of ICT facilities are better for students. Suleman et al. (2014) in his study concluded that Classrooms should be planned in such a way that different technologies should be used successfully that help in best management of the teacher time.

Behavior Management

Table 2 shows that significant difference were observed for the hypothesis that ICT develops interest of the students in learning and the students were more behaved with the use of ICT in classroom (t = 45.023, $p < 0.00$). It is clear from our results that ICT not only improve the learning process but the students become more behaved with the use of ICT. According to Galbreath (2000), the use of ICT can increase the value of teaching and learning, as its quick expansion has changed human society. In reality, ICT has become a part of man's life, particularly in education by teachers.

Time Management

Significant differences were observed at t = 48.496 ($p < 0.00$) (Table 2) for variable TM suggesting that the respondents have agreed that the adequate use of ICT can save time in class instruction. Sahito et all. (2017) stated that the majority (85%) teachers use ICT in classroom, and the teachers know the significance of computers, and their role in time management.

Correlation analysis

The table no 3 reveled the correlation between the dependent (CM)

Corresponding Author's Email: *srobreeding@gmail.com*

and independent (generating i.e. CMA) variables. Results suggesting the two variables were strongly associated with each other. Ullah M et al. (2013) also observed significant relationship (among the dependent and independent variables) in their study.

Table 3. Correlations

		CM	CMA
CM	Pearson Correlation	1	.138*
	Sig. (2-tailed)		.033
	N	240	240
CMA	Pearson Correlation	.138*	1
	Sig. (2-tailed)	.033	
	N	240	240

*. Correlation is significant at the 0.05 level (2-tailed).

Table 4. Regression analysis

ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	15.485	1	15.485	109.571	.000b
	Residual	33.635	238	.141		
	Total	49.119	239			

a. Dependent Variable: CM

b. Predictors: (Constant), CMA

Coefficients

		B	Std. Error	Beta		
1	(Constant)	1.327	.242		5.475	.000
	CMA	.632	.060	.561	10.468	.000

a. Dependent Variable: CM

Table no 4 suggested that the estimated coefficient $\beta = 0.632$ is statistically significant at $t = 10.468$ ($p < 0.01$) suggested that class management (CM) depends on variable CMA.

Recommendations

1. The school management may ensure the use of ICT in the Management of teaching (MOT).
2. The school management may ensure the use of ICT in students' Behavioral management (BM).
3. The school management may ensure the use of ICT in class Time management (TM).
4. There is a need to step up efforts to consolidate the use of determining factors individually so that their effect is achieved.

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Appendix 1.
Variables

Classroom Management (CM)

CM1 Teachers should have ICT skills to use technology in class.

CM2 Teachers should have belief in using technology

CM3 Teacher know the proper use of new technologies in the classroom.

CM4 The teachers should be able to involve the class using technology.

CM5 Teachers are aware of using online inter connection with students.

Method of Teaching (MOT)

MOT1 Use of technology can save our time to achieve goals.

MOT2 Teachers can handle content density with the help of ICT.

MOT3 Uniform methods of teaching are effective for students learning.

MOT4 The use of ICT helps to prepare teaching resources and materials.

MOT5 ICT promotes active and engaging lessons for students' best learning experience.

Behavior Management (BM)

BM1 ICT helps student's behavior in class duration.

BM2 ICT increases students' confidence to participate actively in the class.

BM3 The use of ICT can increase the focus on courses.

BM4 The students are more behaved and under control with the use of ICT.

BM5 ICT develops the students' interest in the latest technology and its application.

Time Management (TM)

TM1 Adequate use of ICT can save time in-class instruction.

TM2 ICT helps students to send their assignments on time.

TM3 ICT helps teachers assess students using the software.

TM4 ICT helps teachers have easy contact with their parents.

TM5 ICT helps students in creating ample time for time practice of the lesson

Corresponding Author's Email: srobreeding@gmail.com