



**“EFFECT OF ICT SUBJECT ON THE SECONDARY SCHOOL
STUDENTS' SELF-REGULATION ON THE BASIS OF GENDER”**

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Abstract:

Technology plays an inherent role in our lives. We use technology willingly and unwillingly to complete our work. ICT is needed by all to be good students, workers and citizens. Revolution in the field of technology put a great impact on the educational field. Thus the students at the school level need to get trained in ICT as well. Introduction of computers in schools is a major step in the direction of ICT in preparing the next generation workers. Thus Government of Maharashtra has introduced ICT subject for Std. IX students of Secondary School Certificate (SSC) board. This study deals with the impact of this newly introduced ICT subject on Std. IX students' self-regulation. 1041 students from 21 SSC board schools from Greater Mumbai were the respondents. Comparing boys and girls of secondary schools show that girls are better in their self-regulation.

Introduction:

Today use of technology has become inherent part of our life. The revolution in the field of technology affects all the aspects of human life. Globalization and technological changes has serious implications for the nature and purpose of educational institutions. The students at the school level need to be trained in the use of ICT. Introduction of ICT in schools is an innovative and major step in preparing the next generation workers. In recent years there has been widespread interest in the implementation of information and communication technologies (ICT) in schools.

State Level Curriculum Committee of Maharashtra State Council of Education Research and Training (MSCERT) have introduced Information Communication Technology (ICT) as a compulsory subject for Standard IX and X in the Secondary School Certificate (SSC) schools. Accordingly the ICT subject is offered by all schools for Std. IX and X which are following the state board. This is an innovation for the state board curriculum, first time started for Std. IX and X. For this purpose teachers were trained. In this program students are learning about the theoretical and practical concepts of ICT.

One of the advantages of becoming ICT proficient is becoming capable of using and applying computer technology in learning and subsequently in other situations too. It is also hoped that proficiency in the use of ICT will create greater discipline and help students in regulating themselves and developing confidence in them. In order to achieve anything we need to plan and organize our actions. Here comes the relevance of self-regulation.

Self-regulation is the ability to control and direct one's own feelings, thoughts, and actions. While the ability to self-regulate has long been considered an essential part of a child's healthy emotional development, self-regulation is increasingly being seen as a good predictor of a child's academic success.

The government is of the opinion that students will become confident after undergoing through this new subject in ICT. However, few questions arise. Do the students really feel good about themselves? Is there any impact of this subject on self-regulation of students? Is there any difference in the self-regulation of students on the basis of gender? The investigator decided to conduct a research study to find answers to these questions.

STATEMENT OF THE PROBLEM

The problem for the study was stated as

“Effect of ICT Subject on the Secondary School Students' Self-Regulation on the Basis of Gender”

DEFINITIONS OF THE VARIABLES

I C T Subject It is defined as information and communication technology introduced as a subject in Standard IX and X of SSC board schools in Maharashtra. The subject comprises of theory as well as practical applications of ICT with reference to the computers and internet.

Self-Regulation It is operationally defined as a process whereby students set goals for their work and then attempt to monitor, regulate and control their cognition, emotions, motivation and actions.

OBJECTIVES OF THE STUDY

The objectives for the study are stated as following:

1. To compare self-regulation of students before and after the commencement of the ICT subject in Std. IX.
2. To compare students' self-regulation on the basis of gender before and after the commencement of the ICT subject in Std. IX.

NULL HYPOTHESES

The hypotheses are stated as follows

1. **There is no significant difference in self-regulation of Std. IX students** before and after the commencement of the ICT subject.
2. **There is no significant difference in the self-regulation of Std. IX students on the basis of gender** before and after the commencement of the ICT subject.

RESEARCH DESIGN OF THE STUDY

The **Methodology** of the study is the *outcome evaluation model* of program evaluation which focuses on *effect assessment* which comes under descriptive research.

Like basic explanatory research, **effect assessment** is concerned with cause and effect. The cause is the ICT subject and its effect is self-regulation in STD. IX students. The ICT subject is taught by the school teachers trained in the subject. Therefore the paradigm for present research is the “*black box model*” (Martyn Hammersely, 1993). According to Martin Hammersely (1993), this model aptly depicts the research paradigm in most evaluation studies. The black box model is the situation in which the input is the program, treatment or intervention, and output is its effects. The connecting process within the box is not readily visible. The researcher was not involved in the program intervention and thus was not visible to the researcher.

Since the ICT subject introduced in Std. IX for students is a 'new full coverage program' randomization while selecting the respondents was not possible, hence the present research seeks to assess the effect of the program using the single case design in the quasi experimental design.

Thus the researcher has used the “full coverage program” of ICT subject. This will consist of repeated measures of effects before commencement of ICT subject and after the completion of the subject for same group of respondent of Std. IX of SSC board.

Respondents were Std. IX students selected as sample from Secondary School Certificate Board co-educational schools of Greater Mumbai. Total 1041 student respondents undergoing this ICT program of academic year 2013-2014 were considered.

Self-Regulation Scale by Brown and Miller's (1991) was used for the study. Miller and Brown formulated the self-regulation tool. This tool presents 63 items; all 63 items are answered on a 5-point Likert scale. There are seven dimensions of self-regulation: 1. **Receiving** relevant information, 2. **Evaluating** the information and comparing it to norms, 3. **Triggering** change, 4. **Searching** for options, 5. **Formulating** a plan, 6. **Implementing** the plan and 7. **Assessing** the plan's effectiveness.

Items in the tools were positively as well as negatively worded statements. The positively worded statements were rated as Strongly Agree=5, Agree=4, Undecided=3, Disagree=2, Strongly Disagree=1. For negatively worded statements scoring was reversed. The higher the score, higher was the self-regulation, and lower the score, lower the self-regulation. Test-retest reliability for the scale was ($r = .94, p < .0001$). Internal consistency of the scale was 0.91.

Techniques of data analysis help to describe the data and differentiate among the groups. The statistical techniques used in order to describe the data are mean and standard deviation. For testing the hypotheses t- test has been used.

TESTING OF HYPOTHESES

Hypothesis 1 states that there is no significant difference in self-regulation of Std. IX students before and after the commencement of the ICT subject in Std. IX.

Table 1 gives the t ratio and P values indicating the difference between self-regulation for total respondents before and after the commencement of the ICT subject in Std. IX.

Table 1
Difference in Self-Regulation Scores of Secondary School Students
Before and After the Commencement of ICT Subject

Variable		N	Mean	SD	t ratio	P value	Significance
Self-Regulation	Before	1064	217.38	16.22	0.38	0.70	NS
	After	1041	217.10	17.47			

Pvalue>0.05= Not Significant (NS); Pvalue<0.05=Significant (S)

Findings and Conclusions

From table 1 it can be seen that the P values for **self-regulation** is greater than 0.05. Hence, there is no significant difference in the self-regulation, before the commencement of ICT course and after the completion of the subject. The null hypothesis is, therefore, accepted for self-regulation. This indicates that the self-regulation of students did not change as a result of the subject.

Hypothesis 2 states that there is no significant difference in self-regulation of Std. IX students on the basis of gender before and after the commencement of the ICT subject in Std. IX.

Table 2 gives the t ratio and P values indicating the difference between self-regulation for boys and girls before and after the commencement of the ICT subject in Std. IX.

Table 2
Difference in Self-Regulation Scores on the Basis of Gender Before and After the Commencement of ICT Subject

Variable	Gender		N	Mean	SD	t ratio	P value	Significance
Self-Regulation	Boys	Before	540	216.7	16.98	1.4	0.16	NS
	Girls		524	218.09	15.37			
	Boys	After	536	215.79	18.95	2.51	0.012	S
	Girls		505	218.50	17.67			
	Boys	Before	540	216.7	16.98	0.83	0.40	NS
		After	536	215.79	18.95			
	Girls	Before	524	218.09	15.37	0.42	0.67	NS
		After	505	218.50	17.67			

Pvalue>0.05= Not Significant (NS);Pvalue<0.05=Significant (S)

Findings and Conclusions

From table 2 it can be seen that the P value for genderwise difference in **self-regulation** is greater than 0.05 before the commencement of ICT subject showing no significant. However after the completion of the ICT subject there is a significant difference on the basis of gender. The null hypothesis is, therefore, rejected for self-regulation after the completion of ICT subject. From the mean values it can be seen that girls were higher on self-regulation before the commencement ICT subject as well as they are higher after the completion of ICT subject. Seeing the difference for only boys and only girls group before and after the commencement of ICT subject there is no difference.

CONCLUSIONS AND DISCUSSIONS

The findings of the study show that there is no significant difference in the **total** self-regulation and its dimensions of **total students** of Std. IX after going through the ICT subject. This means that there was not enough impact of the ICT subject on the total self-regulation of Std. IX students.

Boys and Girls did **not differ** in their self-regulation before the commencement of the ICT subject. However the findings of the study show that there is a significant **difference in boys and Girls** after the completion of ICT subject. From the mean values it can be seen that girls were higher on self-regulation before the commencement ICT subject as well as they are higher after the completion of ICT subject. Seeing the difference for only boys and only girls group before and after the commencement of ICT subject there is no difference. This could be because girls are more oriented towards the academics than the boys. Boys attitude towards their progress in the ICT subject. They don't keep track of their progress and do not see the effects of their actions, they don't pay attention towards the subject. This shows that girls try to clear their doubt, they set their goal and plan accordingly to become successful. Students search for more than one solution and then try to work on best one, they can change their ways if they feel their planning is not working properly.

Now it's not a male dominating world, all boys and girls are treated equally. Present scenario shows that both girls and boys are focused toward their higher studies and ultimately about job too. Thus this innovation in the curriculum can bring an effect for this tecno-savy world. Now girls have started working in the IT sectors, IBMs etc., so that they can step with the world.

The government, the school authorities managing the aided schools and the teachers need to put in more efforts to ensure that students understand and comprehend the subject and also develop the skills in using computers. Efforts should be made to make available and accessible the resources in terms of physical facilities as well as well trained and committed teachers. This will help students achieve more in the subject, to think in right direction.

IMPLICATIONS

The present study will help Maharashtra Government to know about achievement of their program i.e. introduction of ICT as a compulsory subject for Std. IX and X. It will help the policy makers and other stakeholders to get an idea whether the introduced course is achieving its objectives or not.

An attempt has been made to understand the Std. IX student's level of improvement in self-regulation after completion of ICT course. The present study will encourage the teachers of the schools to know about the achievement of their students through this subject. This will help the principals and teachers to take appropriate steps towards betterment of the program so that students can do better in the subject. Through this study parents will become aware about importance of ICT course in the

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