

A Study of Association Between Confidence In Using Technology And Success in Examination

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Abstract

Various earlier studies about technology and gender suggest that male students are more confident in using technology. This research is aimed to study association between confidence in using technology and success in examination. The data are collected using questionnaire from SYBSc, TYBSc and M Sc students. This quantitative study reveals that even though male students are more confident in using new technology, female students show better results in university examinations. So confidence is not reflected in examination success.

Keywords: *gender, confidence in using technology, success in examination*

Introduction:

Now a days everywhere information and communication technology (ICT) is used for teaching, learning and evaluation at undergraduate as well as graduate level. This specific study was carried out especially for Computer Science students who are using various software technologies in the laboratory while studying various subjects. The study was carried out for finding out the confidence level of students in using technology and their examination success.

Students of Second Year B.Sc. (Bachelor of Science) , Third Year B.Sc. and M.Sc. students are considered for this study. Computer Science students are using Computers for learning C, C++, JAVA, PHP and other subjects like R software, Data Structures, Relational Databases, Systems Programming, Operating Systems, Theoretical Computer Science, Networking, Distributed Database Concepts, Principles of Programming Languages, Data mining, Advanced Networking , Design and Analysis of Algorithms. Many previous studies in which confidence in using technology was studied suggest that the male students are having more confidence than female students^[7]. So a study of Computer Science students was carried out as these students are all the time using some technology. The purpose of the study was to find out the relation between confidence in using technology and the success in the examination.

Aims of the study :

1. To analyze gender based confidence level in using technology of SYBSc, TYBSc and MSc students.
2. To analyze gender based examination success of SYBSc, TYBSc and MSc students.
3. To identify whether the confidence is reflected in the examination success.

Methodology used :

1. A questionnaire was prepared based on use of technology by the students to check their confidence level.
2. Examination results were analyzed with respect to gender.

Collection of Data:

A questionnaire was prepared to check the confidence level of the male students and female students in using the technology^[7].

Table 1. Items of the Study Questionnaire

Question	Items
1	You are sure you can do advanced work in technology
2	You are sure you can use technology
3	You are sure you can handle more difficult technology problems
4	You are sure you can get good grades in the courses related to computer science
5	You have a lot of confidence of using technology
6	If you see a new app on mobile or internet, you are confident of using it
7	You are always attracted towards new technology devices
8	Because of your skills you will be getting very good jobs and pay packages

The confidence variable is measured using **modified Fennema-Sherman Attitude Scale**^[6]. This Scale is specially modified for the questionnaire which is used to investigate the gender difference in the confidence of the Computer Science students in using the technology for learning. There were 8 questions in the Questionnaire as mentioned in the Table 1. These questions were rated according to a **5-point Likert-type scale, ranging from 1 “strongly agree” to 5 “strongly disagree.”**

Statistical Analysis:

- I.** For checking confidence level, **proportion-test** (z test) is performed for all the three classes SYBSc , TYBSc and MSc. Here null hypothesis is H_0 : Confidence level of male and female students is same against the alternative hypothesis

H_1 : Confidence level of male students is more than that of female students.

Results of the tests are summarized in the following table.

Table 2

Class	Calculated Z	P value	Decision
SY BSc	-3.78	7.74965E-05	H_0 is rejected.
TY BSc	-21.24	0	H_0 is rejected.

MSc	-5.99	9.88932E-10	H_0 is rejected.
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II. Gender based Analysis of marks:

Folloing table gives

Table 3

SYBSc		
MARKS	% MALE STUDENTS	% FEMALE STUDENTS
<35	32.5	9.3
35-40	19.38	9.3
40-50	23.75	43.02
50-60	18.13	12.97
60-70	2.5	19.77
>= 70	3.75	5.81

Considering this data a Bar diagram is plotted with marks on X-axis and percentage of Male students and percentage of female students on Y- axis for SYBSc.

Figure 1 : Graph of Marks Vs % Number of students of SYBSc :

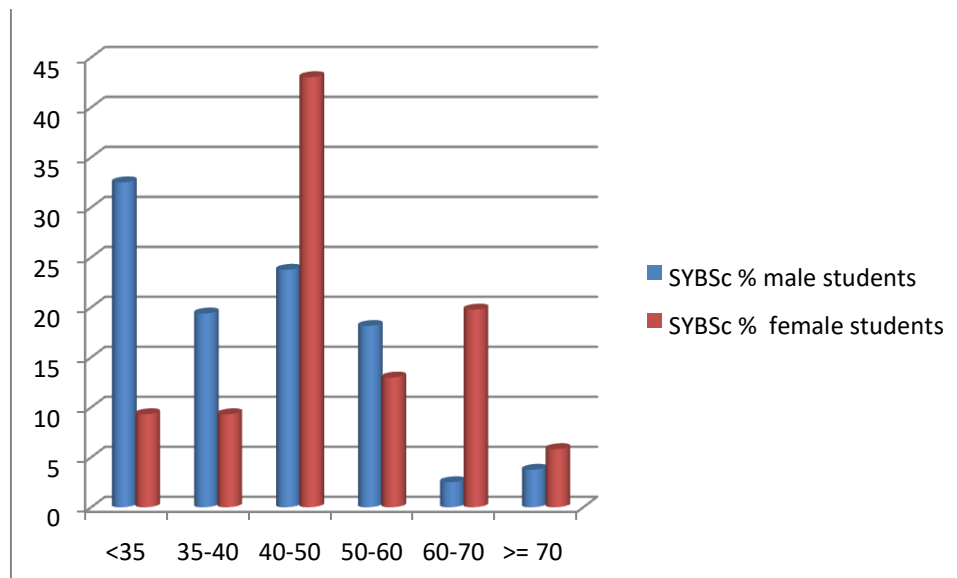


Table 4:

TYBSc		
Marks	% MALE STUDENTS	%FEMALE STUDENTS
<35	18.26	11.94
35-40	9.62	8.95
40-50	23.08	13.43
50-60	30.77	31.34
60-70	13.46	28.35
>= 70	4.8	5.97

Considering this data a Bar diagram is plotted with marks on X-axis and percentage of Male students and percentage of female students on Y- axis for TYBSc.

Figure 2 : Graph of Marks Vs % Number of students of TYBSc :

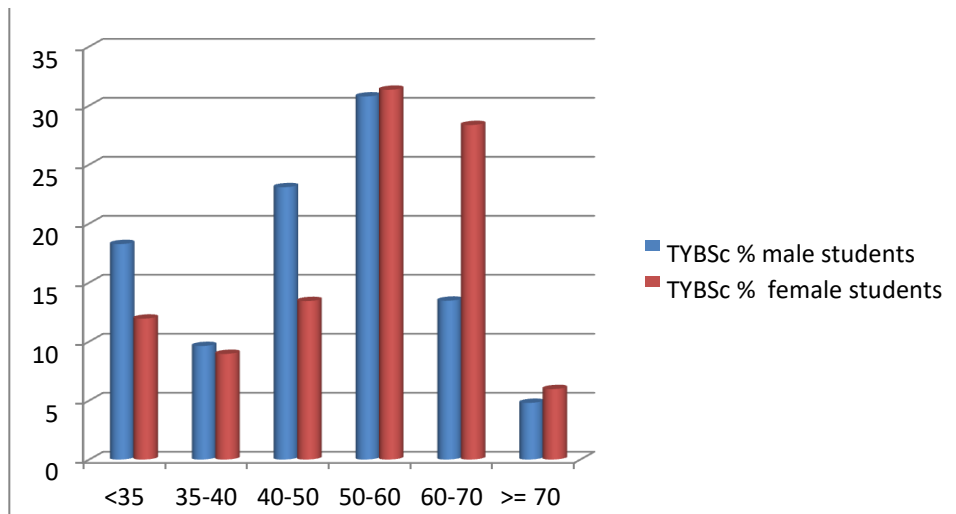


Table 5:

MSc		
	%male students	%female students
<35	0	0
35-40	0	0

40-50	8.33	0
50-60	4.17	16.13
60-70	20.83	16.13
≥ 70	66.67	75.61

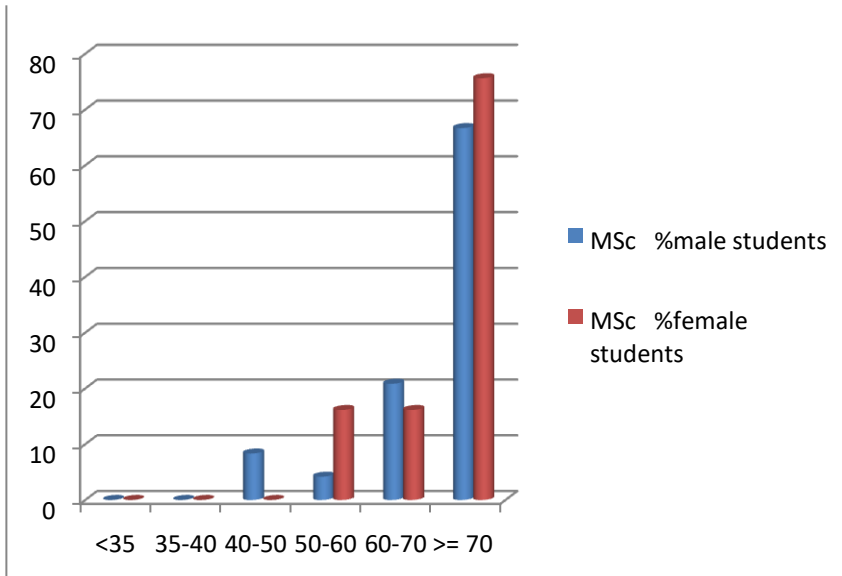


Figure 3 : Graph of Marks Vs % Number of students of MSc:

All the three graphs suggest that female students score more marks than male students. This hypothesis is verified using proportion test.

Hypothesis is as follows:

H_0 : Proportion of female students securing marks $\geq 60\%$ is equal to proportion of male students securing marks $\geq 60\%$ i.e. $P_1 = P_2$

H_1 : Proportion of female students securing marks $\geq 60\%$ is greater than proportion of male students securing marks $\geq 60\%$ i.e. $P_1 > P_2$ The results are summarized in the following table.

Table 6:

Class	Calculated Z	P value	Decision
SY BSc	66.66	0	H_0 is rejected.
TY BSc	19.01	0	H_0 is rejected.
MSc	5.61	9.72967E-09	H_0 is rejected.

It may be concluded that Proportion of female students securing marks $\geq 60\%$ is greater than proportion of male students securing marks $\geq 60\%$. It means girls' score is higher than that of boys.

Conclusion:

1. **Analysis of confidence level :**

From analysis of all the three classes, it is observed that male students are more confident in using technology as compared to the female students.

2. **Analysis of marks :**

From analysis of all the three classes, it is observed that female students score more marks than male students.

3. The study reveals that **even if male students are confident using new technology and ICT, still female students show better results in University examination.**

4. **So confidence is not equal to success in examination.**

Abbreviations used:

1. SYBSc - Second Year Bachelor of Computer Science
2. TYBSc - Third Year Bachelor of Computer Science
3. MSc - Master of Science

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