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# Effect of Information and Communication Technology (ICT) in education on self-esteem of school students

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**Abstract:** In present scenario, information and communications technology (ICT) is gradually gaining importance in schools and universities. In traditional pedagogy, education was only associated with well trained teachers having direct personal contact with students. The use of ICT pedagogy in classroom helps to build student centered learning settings. The present study was undertaken to evaluate and compare the self-esteem of school students taught through traditional pedagogy and information and communications technology (ICT). Total sample comprised of 140 school students, 70 students taught through ICT and 70 through traditional method were included in the sample. Further, sample was bifurcated according to gender of students. Rosenberg Self-Esteem Scale (SES; Rosenberg, 1989) was used for collection of data. The obtained data were analyzed using Mean, S.D, and 't'test statistical techniques. The results revealed significant differences in self-esteem between the students taught through different teaching methods. Students taught through ICT pedagogy possess more self-esteem as compared to students taught through traditional pedagogy. Boys taught through traditional pedagogy are having high self-esteem as compared to girls taught through traditional pedagogy.

**Keywords:** ICT**,** Traditional Pedagogy, Self-Esteem, School students

Nowadays, government has taken initiative and it has become a major priority to introduce information and communication technology (ICT) in schools. Basic computer labs are now transformed into high-tech facilities such as laptops, interactive whiteboards, or even tablet computers. However, the enthusiasm among teachers to use these facilities as an instruction tool for students in the schools differed by districts. The schools which are situated in rural area are with high poverty concentrations usually do not use these ICT facilities and even teachers do not possess skills or knowledge about how to use this technology as a mode of instruction. Gray, Thomas, & Lewis (2010) found that a larger percentage of public schools with lower poverty concentrations agreed that teachers are insufficiently trained in technology use and integration. Our education system is responsible for the development and improvement of our society and building human capital by imparting knowledge and skills. In this competitive world, understanding is more essential than ever. So, it is very important for teachers and facilitators to use more innovative methods or techniques in teaching that will facilitate students to use their knowledge for solving their day to day problems in life.

Teaching through traditional pedagogy is a one way flow of information. In this technique teacher continuously talks about an hour or so and expecting that when

he/she asks questions from the students, they will respond in the same manner. But this method is not so fruitful for students as it only concentrates on theoretical method rather than its practical aspects. As the teacher always decides what, when and how to do, there are very less activities done for students and they are having very less interaction in the class.

Many researches addressed that the use of ICTs in teaching and learning is essential for providing opportunities for students to learn; to function in today's e-society. Yelland (2001) explained that the traditional educational environments do not appear to be suitable for preparing learners to function or be productive in the workplaces of today's society. She also claimed that organizations that do not fit in the use of new technologies provided by ICT's cannot significantly claim to prepare their students for life in the 21st century. This argument was supported by Grimus (2000), who pointed out that "by teaching ICT skills students are prepared to face future development based on proper understanding" (p.362).

Many researchers have also claimed that use of computers can decrease the amount of direct instruction provided to students and help them to become knowledgeable. It provides opportunity to teachers to help the students with particular needs (*Iding, Crosby, & Speited, 2002; shamatha, Peressini, & Meymaris 2004; Romeo, 2006*). According to Grabe (2007), technologies can play a crucial role in student skills, motivation, and knowledge. He also claimed that ICTs can be used to present information to students and help them to complete learning tasks. A very important aspect of learning enhanced by using ICTs will facilitate a more smoothed and compound view of abstract concepts. In this it is significant to understand different approaches that ICTs use in education to fulfill the teaching and learning outcomes.

Self-esteem refers to an individual's sense of value or worth and is assumed, under normal circumstances, to be stable across time. According to Coopersmith (1967), self-esteem, which involves an attitude of approval or disapproval:

> indicates the extent to which the individual believes himself to be capable, significant, successful, and worth. In short, self-esteem is a personal judgment of worthiness that is expressed in the attitudes the individual holds toward himself. (Coopersmith, 1967, pp.4-5)

Inclusion of ICT in school curriculum helps to provide significant changes in teaching methodology and proved to be beneficial for students, particularly those with low self-esteem. It reduces gender gap and appears to benefit girls in terms of their self esteem. In ICT enriched environment, student's self esteem and their approach towards computers are found to improve significantly. Cuttance and Stokes (2000, p.11) reported that "effective ICT-based learning environments can have an impact on a range of non-cognitive learning outcomes, including …affective development, such as self-esteem, motivation and a sense of purpose". Beresford (2000) reported that where students were less clear about how they learnt, they were more inclined to highlight personal shortcomings for their lack of success, which could impact upon both their motivation and their self-esteem as learners. Placing students in a new learning situation that used unfamiliar ICT might cause them to question how they learn.

ICT helps to increase self esteem and brings a greater interest and involvement in learning in student's life. The present study investigated the impact of ICT in education on self esteem of school students and find out the self esteem of students taught with the use of ICT materials such as computer system, internet facilities, projectile, video player etc and those taught with textbook only.

**Objective of the Study**

The main objectives of the present investigation were;

1. To measure the self esteem of school students taught through ICT and through traditional pedagogy.
2. To compare self esteem in terms of gender of school students taught through ICT and through traditional pedagogy.

**Hypotheses**

The above objectives enable us to formulate following hypotheses:

1. Method of teaching (ICT and traditional pedagogy) will affect significantly on self esteem of school students.
2. Gender of school students and method of teaching would affect significantly on self esteem.

**Design**

A survey research design was used for the study to assess the self esteem of school students taught through ICT and through traditional pedagogy in Lucknow.

**Sampling**

Total sample comprised of 140 school students, 70 students taught through ICT and 70 through traditional method were included in the sample. Further, sample was bifurcated according to gender of students 35 girls and 35 boys. School students who fall in the age range between 14 to 18 years were selected from lucknow.

**Table 1: Teaching method wise distribution of the sample**

| **ICT** | | **Traditional Pedagogy** | |
|---|---|---|---|
| **Girls** | **Boys** | **Girls** | **Boys** |
| 35 | 35 | 35 | 35 |
| Total= 70 | | Total= 70 | |

**Procedure**

The students included in the sample were contacted individually and the research tools were administered. General information was noted down using personal data sheet separately. The schedules of testing were worked out through prior consultations with the participants.

**Tool Used**

**Rosenberg Self-esteem Scale :**

The Rosenberg Self-esteem Scale (Rosenberg, 1989) consists of ten items scaled on a four-point response format (1 = strongly disagree to 4 = strongly agree). Five items

are positively worded (e.g., "On the whole, I am satisfied with myself") and five negatively worded (e.g., "I feel I do not have much to be proud of"), in an attempt to inhibit response biases, such as acquiescence. Scores can range from 10 to 40, where higher values represent more positive evaluations of the self (Rosenberg 1965).

**Statistical Analysis**

The collected data were classified and tabulated in accordance with the objectives to arrive at the meaningful and relevant inferences by using arithmetic mean, standard deviation and t-test.

**Results and Interpretation**

To examine the significance of difference between students taught through ICT and traditional method on their self-esteem, obtained data was treated with the help of t-test. The outcomes of the analysis are presented in the tables (table2, 3, &4).

Table 2 indicates, significant difference between students taught through ICT and traditional method on self-esteem ($t=6.92$, $p<0.01$). Mean value indicates that students taught through ICT (Mean=24.91) possess more self-esteem as compared to students taught through traditional method (Mean=19.26).

The comparison of scores of girls and boys taught through ICT method in school on self esteem is performed in the table 3, which shows that there is non-significant difference between girls and boys taught through ICT method in school ($t=1.05$).

It is evident from Table-4 that girls and boys taught through traditional method in school differs significantly from each other on self esteem ($t=2.67$, $p<0.01$). Mean values show that boys are having high self esteem (M= 20.17) as compared to girls taught through traditional method (M= 17.18).

**Discussion**

The purpose of this study was to examine the self-esteem of school students taught through ICT and traditional method.

When the difference in method of teaching was investigated on self esteem of school students, it was found that students taught through ICT scored significantly higher on self-esteem as compared to students taught through traditional method (table 2). It is apparent from the table -4 that there is significant difference between girls and boys taught through traditional method on self esteem. It is clear from the results that boys who taught through traditional method possess more self esteem as compared to the girls. Students who are taught through ICT method will be aware about information and communication technologies and its effect on society. After leaving the school, they will be more confident, innovative and productive users of new technologies. International Association for Educational Achievement (IEA) monitored a study on Information technology. The research focused on six schools in England: three elementary and three secondary, during the academic year 2000/ 2001 and found a number of positive effects on students who participated including improved motivation, increasing self-confidence and self-esteem, reinforcing social skills, improving cooperative and collective work skills, and better achievement (Harris & Kington, 2002). Cox (1997) examined elementary and secondary school students' use of technology and their attitudes towards ICT. The study was based on an analysis of the literature relating to motivation, as it indicates that the regular use of ICT for

various topics can have a stimulating and beneficial effect on students‟ learning. Students‟ responses showed their increasing commitment to the learning task, reinforcing enjoyment, benefit and feeling of achievement in learning when using ICT, and emphasizing their self-esteem. Over 75% of secondary school students stated the response „I agree‟ or „I strongly agree‟ to the statement that the use of computers made the school subjects more exciting. Also, over 50% of the students showed agreement that the use of ICT helped them understand their topics in a better manner (Cox, 1997).

Denning's (1997) research involved nine secondary schools located in the West of Sussex, Sheffield and Birmingham for the study of what and how ICT activities can stimulate students through positive experiences that involve the use of technology in a group of activities. 80% of the teachers who used ICT regularly found that students were stimulated in a good manner. Based on this research, we can say that ICT had a positive effect on the student's motivation, and the use of ICT boosted students' motivation to learn and led to a better performance for learning outcome. Learning inside the ICT environment entails more excitement and amusement regarding lessons, more enjoyment of the learning experience, gaining control on their own learning process, more self-confidence and more self-esteem.

Beresford (2000) explained that where students were less clear about how they learnt, they were more inclined to highlight personal shortcomings for their lack of success, which could impact upon both their motivation and their self-esteem as learners. Placing students in a new learning situation that used unfamiliar ICT might cause them to question how they learn. Ringstaff and Kelley (2002) noted that technology has a positive effect on student motivation, attitudes toward learning, self-confidence, and self-esteem.

As compares to traditional pedagogy, ICT identifies many different ways of learning and expression of knowledge. It does not only focus on one type of teaching and learning approach which is focused in traditional pedagogy. ICT pedagogy helps learners to explore and discover rather purely pay attention and keep in mind. ICT promotes significant change in teaching methods and has been proved to be beneficial for students, mainly for those with low self-esteem. Besides it, ICT also proved to be beneficial for girls, by reducing the gender gap in which boys traditionally maintain higher self-esteem. Students' self-esteem and their attitudes towards computers are found to improve significantly in an increasingly ICT-rich learning environment.

**Conclusion**

Following conclusion can be drawn from the present study:

- Students taught through ICT pedagogy possess more self-esteem as compared to students taught through traditional pedagogy.
- Boys taught through traditional pedagogy are having high self-esteem as compared to girls taught through traditional pedagogy.

**Implication of the Study**

Nowadays, educationist and academicians have realized the benefits of ICT pedagogy used in school for developing more interest and up to date knowledge of the content

related to their course. The teacher plays an important role in student's life and cannot be neglected. The teachers are responsible for providing more authentic and complete knowledge to students with the help of audio visual aids about those areas which cannot be easily described by using traditional pedagogy. ICT helps to develop interest among students and motivate them to learn. It also helps to solve the queries and curiosity about various scientific concepts that a teacher is generally fail to do in the traditional pedagogy method of teaching.

**Table 2: Means, Standard Deviations and t-value of school students taught through ICT and Traditional pedagogy on Self Esteem.**

| Method of teaching | N | Mean | SD | t |
|---|---|---|---|---|
| ICT | 70 | 24.91 | 4.13 | 6.92** |
| Traditional Method | 70 | 19.26 | 5.41 | |

**Table 3: Means, Standard Deviations and t-value of girls and boys taught through ICT method on Self Esteem.**

| Gender | N | Mean | SD | t |
|---|---|---|---|---|
| Girls | 35 | 25.43 | 2.32 | 1.05 |
| Boys | 35 | 24.70 | 3.01 | |

**Table 4: Means, Standard Deviations and t-value of girls and boys taught through traditional pedagogy on Self Esteem.**

| Gender | N | Mean | SD | t |
|---|---|---|---|---|
| Girls | 35 | 17.18 | 3.42 | 2.67** |
| Boys | 35 | 20.17 | 5.72 | |

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