A Comparative Study of Logical Thinking, Social Behavior and ICT Use Ability of Secondary Level Students with Reference to Different Intellectual Level

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Abstract: *In twenty first century, information and communication technology has become major pathway to gather information and gaining knowledge. In Spite of easy accessibility of information and knowledge, many students face challenges in different stages of their career while growing. To solve those problems they might need to opt for preparing plans and for those plans making the logical thinking mindset is becoming really important. With this preparation, they can get their role and objectives easily and effectively. Using the logical thinking is very common methodology for finding out solutions in daily life problems. Using right set of knowledge in a subject or proper awareness in different real life scenarios help a human to take proper decision effectively. Everyone also receives experience due to facing challenges in their life. In that way they develop the ability to tackle a situation and solving problems in life. A thoughtful person can do analysis of a situation from logical point of view and make their decision. Being an active part of childhood, the schools environment can bring very important impact in the life of a person. Students who are engaged and successful in school are more likely to graduate from secondary school to pursue post secondary studies and to have satisfying social relationship. So the main motive of this study is to know logical thinking ability, social behavior in the educational life of a human being. Using the ICT, the information can be transferred today very effectively but in very small time duration. In present life this is becoming as a necessity. By know the ICT, students can develop and grow their social behavior which can benefit the human society effectively. In this study, how students can develop awareness about different problems and for effectively development of knowledge to tackle those problems using ICT, developing social behavior skills, and effectively using the information technology is highlighted.*

Keywords: Secondary Level Education, Logical Thinking Ability, Social Behaviour, usage of ICT, Intelligence level: usage of ICT

1. Rationale of the Study

Logical thinking mindset is becoming really important. With this preparation, they can get their role and objectives easily and effectively. Using the lIn twenty first century, information and communication technology has become a major pathway to gather information and gaining knowledge. In Spite of easy accessibility of information and knowledge, many students face challenges in different stages of their career while growing. To solve those problems they might need to opt for preparing plans and for those plans making logical thinking is a very common methodology for finding out solutions in daily life problems. Using the right set of knowledge in a subject or proper awareness in different real life scenarios help a human to make proper decisions effectively. Everyone also receives experience due to facing challenges in their life. In that way they develop the ability to tackle a situation and solve problems in life. A thoughtful person can do analysis of a situation from a logical point of view and make their decision. Being an active part of childhood, the school environment can bring a very important impact in the life of a person. Students who are engaged and successful in school are more likely to graduate from secondary school to pursue post secondary studies and to have satisfying social relationships. So the main motive of this study is to know logical thinking ability, social behavior in the educational life of a human being. Using the ICT, the information can be transferred today very effectively but in very small time duration. In present life this is becoming a necessity. By knowing ICT, students can develop and grow their social behavior which can benefit human society effectively. In this study, how students can develop awareness about different problems and for effective development of knowledge to tackle those problems using ICT, developing social behavior skills, and effectively using information technology is highlighted.

Haider Ali (2016) conducted a study on "Students' performance in chemistry in relation to their logical thinking ability". Karakoc Murat (2016) on "The significance of critical thinking ability in terms of Education". In'am Akhsanul (2016) on "A Logical Thinking Analysis through the Educational Geometry". Zaman Amir, Farooq A R (2017) conducted a study on "Logical thinking in Mathematics: A study of secondary school students in Pakistan". Khoshal Yasin, Hosseini Fateme (2017) on "The relationship between creativity and logical thinking: A case of Iranian ESP teachers". Masumi Atsushi (2018) conducted a study on" Fostering Japanese student's logical thinking to formulate a common understanding of logic between teacher and students".

Hanham Jose, Mc Cormick John (2018)conducted a study on "A multilevel study of self -beliefs and student behaviors in a group problem solving task". Deekens M. Victor, Greene A. Jettrey (2018) on "Monitoring and depth of strategy use in computer based learning environments for science and history'. Moghavvemi Sedigheh, Janatabadi Salarzadeh Hashem (2018) conducted on a study on "Incremental impact of time on students' use of E-learning via facebook". Villani Daniela, Morganti Laura (2018) on

"Students' acceptance of tablet Pcs in High schools: profiles and differences". The result shows a valid situation in the Italian schools despite the availability of and funding for the technologies. Vazquez Garcia Pablo Juan, Vergas Astorga Angelica Maria (2018) conducted a study to "Instructional strategies and information technologies used for supporting the undergraduate mathematics teaching process: scoping review protocol". Siddiqui Nadia, Ventista M. Ourania (2018) on "A review of school based interventions for the improvement of social emotional skills and wider outcome of education" (2018). Olivier. E and Archambault I (2018) conducted a study on "Boys' and girls' latent profiles of behavior and social adjustment in school". Samarrai Al Hosam, Saeed Noria (2018) on "A systematic review of cloud computing tools for collaborative learning".

As per the relevant research works, like the once mentioned above this becomes quite clear that this research approach is quite innovative and unique. Because
1) Any of those researches works the consolidated approach logical thinking, social behavior and ICT has not yet been considered.
2) Most research works used one or two variables in consolidation.
3) Some of the research work was also conducted abroad.
4) Till now no research has been done in the topic related with ICT, logical thinking and social behavior of secondary level students with reference of different intellectual level.

That's why this research work will create a new chapter in education.

Statement of the problem
The researcher titled this problem as

"A Comparative Study of Logical Thinking, Social Behavior and ICT Use Ability of Secondary Level Students with Reference to Different Intellectual Level".

Objective of the study
Present study aims at investigating following our objectives of the study:
1) To study the level of intelligence of secondary level students.
2) To study the logical thinking ability of secondary level students with reference to their intellectual level.
3) To study the social behavior of secondary level students.
4) To study the using of Information and Communication Technology at secondary level students.
5) To know the relationship between logical thinking ability and social behavior of secondary level students.
6) To know the relationship between logical thinking and use of Information and Communication Technology of secondary level students.
7) To know the relationship between social behavior and Information and Communication technology of secondary level school.

Hypotheses to be tested
The following hypotheses are proposed to be tested. Those hypotheses were made with reference to the above

objectives..
1) There is no significant difference between logical thinking ability and intellectual level of secondary level students.
2) There is no significant difference between social behavior and their intellectual level of secondary level students.
3) There is no significant difference between ICT use ability and their intellectual level at secondary level students.
4) There is no significant relationship between logical thinking ability and ICT use ability of secondary level students.
5) There is no significant relationship between logical thinking ability and social behavior of secondary level students.
6) There is no relationship between social behavior and ICT use ability of the secondary level students.

Delimitation of the study
To make original and good work of research, the researcher will delimit this study on the following points -
1) This study will be conducted only on the students of secondary level students. (That is 9th and 10th class students).
2) For this study only the average and above average students of intelligence level will be selected.
3) In this study logical thinking, social behavior and uses of ICT by the students, only three variables will be studied.

Definition of Terms Used in the Study

1) Secondary Level Education :
Class IX and Class X are known as secondary level education.

2) Logical Thinking Ability
According to Gates "Logical thinking is productive thinking where to solve a problem new methods are involved with the background of previous experiences". Logical thinking is a mental process where logic is important. Due to this logical thinking human beings are the best thinkers among all animals. Due to this logical thinking an individual makes a decision.

3) Social Behaviour
Every human being is the eternal part of society. Human beings behave society to live in harmony. Every society follows its own rules and etiquette. Parents give the first hand lesson to a child to learn these social behaviors, and it helps the child to adapt to grow up in that society. Social behavior is defined as interactions among individuals, normally within the same species, that are usually beneficial to one or more of the individuals. In this study the social behavior of students indicates the behavior of students with peers, parents, teachers, adults of family and the society.

4) Usage of ICT
Uses of ICT indicate the huge number of ICT uses by secondary school students. Today students use ICT to get different information regarding their curriculum. Therefore they use different types of gazette to get different information from the globe.

5) Intelligence level
In this study level of intelligence means the different groups of students on the basis of their intelligence level.

Research methodology
Normative study methods will be used.

Population
The study of senior secondary of South Delhi will be defined as population.

Sample and Sampling Method
The researcher will select a sample of 400 secondary level students from South Delhi by the use of a random sampling method.

Variables of the study
Following variables are in the study
1) Intellectual level
2) Logical thinking ability
3) Social behavior
4) Use of Information and Communication Technology (ICT)

Tools to be used
The following tools will be used in the present study for collecting the data
1) For the measurement of intelligence .R.K Ojha and Roy Choudhary's "Verbal Intelligence Test" will be used.
2) For the measurement of logical thinking ability Sujit kumar and Sikha Tiwari's "Logical thinking test" will be used.
3) For the measurement of social behavior a self-constructed tool will be used by the researcher.
4) For the measurement of ICT use ability a self-constructed tool will be used by the researcher.

Data collection
With the help of the above described tools the researcher will collect data from the different schools.

Analysis of data
After collecting the data the score will be tabulated and appropriate statistical method will be used (as per nature of data).

Educational implication
Every student has their own and different personality. As per different personality students have different logical thinking processes. This researcher tries to find out how a student can solve their own problems and what would be the proper behavior in the current scenario of life. Using logical capability, the students shall be developed to merge the gap in the time and mindset of social acceptance. As humans always try to solve problems from the past experience. Apart from how much knowledge the students have in ICT and how they can use it in real life, analyzing those aspects are also part of this research activity. In this thesis, how technology, logical thinking capability, social behavior gets affected is also being discussed. Also, different merit level students can utilize the resources of ICT to develop their mindset and personality is going to be discussed further.

For juvenile students, giving right direction to students in this open nature society is the most important aspect of this research work. This research aims to be a navigation model for these social requirements.

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