STUDY TO RECOGNISE THE GAP AMID THE STUDENT'S EXPECTATIONs AND SERVICE DELIVERED OF DIGITAL EDUCATION IN SENIOR SECONDARY SCHOOLS OF PUNJAB

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Abstract

The study has been done to recognize the gap between the student's expectations and the service delivered by Digital Education in Senior Secondary Schools of Punjab. Learning is a vast area and by learning with the benefits of E-learning, students can be enriched. Service Quality of Digital Education is becoming an essential important feature of Senior Secondary Education in developing countries. The study is conducted through the analysis of Primary and Secondary data collected from online/offline journals, books, and from libraries. Digital education is not used to replace the old techniques of education but means to improve the service quality of education with experience. Many private and government players are developing new techniques to enhance the service quality of digital education in India. The establishment of these techniques and tools in education will lower the expenditure on education and enhance teaching & learning skills. Digital Education with standard service quality is the solution that can solve the flaws of the outdated education system. The government is taking important and necessary steps to convert schools into smart schools, where students can learn with the help of e-learning and online lectures. Educomp in government schools is also a good initiative by the government. Almost 85% of Senior Secondary Government Schools are giving education with the help of Educomp in Urban and Rural Areas.

Digital Learning is more than only proposing students with a laptop as it needs a blend of technology, instruction, and digital content. The service quality of digital education has a major influence on student satisfaction. This research will evaluate assurance of quality in Senior Secondary Schools. Our education system should be geared up to serve the large population of students with the acceptability of a quality assurance mechanism.

Keywords: Service Quality, E-Learning, Students' Expectations and Satisfaction, Secondary Education.

1. INTRODUCTION

Education is such an important and successful investment that it always rewards in several ways. The sturdy and effective educational system results in better performance of the students. Bright and talented students always want to join those schools, colleges, and other educational

institutions that are providing quality services with effective administration in education (Muhammed Ehsan Malik et al, 2000). Nowadays, students seek more quality education and a perfect teaching system in educational institutes to develop their effective educational personalities. The schools, colleges, and educational institutions that are providing improved service quality in education are more capable and productive than other schools that are not providing quality education (Rowley, 1996). Students seek responsibility, efficiency, and assurance from educational institutes which enables them to increase their potential to compete in the market (LeBlanc and Nguyen 1997).

Etymologically, the word "education" is obtained from the Latin word *ēducātiō* ("A breeding, a bringing up, a rearing"). Facilitating the learning process or attaining knowledge, skills, etc. is known as education. There are many educational methods like teaching, training, etc. Consecutive education is provided under the headship of educators, teachers, instructors, tutors, professors, and facilitators. Education is provided in official and unofficial ways. Schools, colleges, and universities are the frequently separated phases of formal education. We also learn informally from what we experience day by day: things that happen to us make us change the way we think and act. Formal education occurs in a school environment with classrooms of numerous students learning together with a skilled certified educator of the subject (wikipedia.org/Digital Education).

Students learn in many different ways and there are many learning styles identified by researchers. Students who learn by memorizing what is given to them are called 'receivers', which is a common style and reinforced by educators who assume learners memorize. Other students are 'detectives', as they like to inspect what they are learning themselves, to get to understand it. Rest are 'generators' as they like to choose what they want and need to learn, and then look for chances to learn those things. If the learner is made to use the new knowledge actively and understands how it can be used practically, the learning becomes deep and easy to be remembered and used (Detlef R Prozesky, 2000).

Our thinking about teaching is based on our previous knowledge which was in schools and colleges, whereas an educator teaches us by writing on the blackboard standing in front of us in the classroom. What students should learn and not learn was only decided by the educators and principals. Students only learn what they 'must know' instead of what is good and important for them to know (Detlef R Prozesky, 2000).

Digital Education means any type of teaching & learning conveyed & obtained by technology or instructional preparation that creates effective use of machinery compatible with the technology (with laptops, Ipads, smartphones, etc.). Today, the world has transferred from knowledge savvy to techno-knowledge savvy. You can get any information in one click (Jinal Jani, Girish Tere, 2015). We are undergoing many transformations over the centuries and this time everything is going digital. Information Technology (IT) is one of the most essential services for change in all segments of human lives. In old teaching techniques education was limited to classroom walls (Poonam Gaur, 2015). Digital Education is spreading its wings through projectors, PPTs, videos, and other digital, online, and electronic learning methods. The digital world has its important only if it provides useful information with quality in education (July 3, 2017).

Every consumer has an ideal expectation of the service they expect to receive when they go to any institute or organization. Service quality is measured how well a service is provided and matched to customer expectations (Savannah Samoszuk). In the digital education context, the user is the ultimate customer, since satisfaction with an educational product/service is one outcome of the exchanges between e-learning services and users (Wang, 2003). The service quality of digital education solutions is defined as a combination of information quality, functional quality, and technical quality.

2. RATIONALE OF THE STUDY

Nowadays, students like to study online and can apply to any course provided by National and International universities through digital education. With the use of e-teaching students can learn and attend classes while sitting at home. Digital education provides many opportunities for students to learn something to their advantage. They can search and find answers to the questions clearly with the use of the internet. Many a time students hesitate to ask questions to the teacher regarding any problem but with the use of e-learning, they can find solutions to any problem themselves. Digital Education is making the students rational only if the service quality provided to the students is better and fulfilled the expectations of the students.

Simultaneously, we have schools where students struggle for books and other accessories used for education. Digital education is evolving at a quicker pace for the last few years. It is altering the method by which students learn different concepts and theories in schools and from other teaching institutes. Digital education is enhancing the old methods of teaching education instead of diminishing the old methods.

Educomp has taken education from paper to pixel and is a developer in bringing quality digital education to the Indian classroom. Smart classes, English Mentor, Educomp Smart class 3D Lab, Educomp Insight, League India, and Uniclass are some products presented by Educomp, which are the answers related to education and a good example of improved service quality. Digital education helps in developing a firm relationship between parents and teachers with an aim in mind and that is better service quality in education for the students (Educomp.com).

BYJU (one of the best organizations providing digital education) claim that they will make teaching a fun experience for children and for this they are providing good content for each section covering all the academic details. These study materials are loaded in digital tablets by Samsung and Lenovo providing service quality in education to the students (Dr. Rashi Gupta et al, March 2017).

The government of India initiated a program named SWAYAM (Study Webs of Active-Learning for Young Aspiring Minds), designed to attain the three main concepts of Education Policy viz., access, equity, and quality. The aim of this attempt is to bring the finest teaching & learning resources to all, including the most disadvantaged. SWAYAM is attempting to find a bridge to join the digital divide for those students who are not approached by the digital revolution (Vikaspedia/Swayam learning portal, 2018).

Digital Education will open many opportunities for those students who are residing in villages and those who can't afford the high fees of courses can take benefits from digital education. It will provide them with equal opportunities as other students. Many students left their studies due to the non-availability of proper resources for education. They have to travel too far for

good educational institutes providers. Many schools in a rural area are not having the expected service quality in education for the students and teachers.

3. LITERATURE REVIEW

➢ **Florica PARAGINA et al. (2010).** They highlighted the problems associated with e-learning in a teacher training activity in Romania. E-learning activities had many opponents due to technical, economic, social, and ethical problems. In Romania, the e-learning study tools/programs are developed by Universities Research Teams, the institute for educational sciences, Companies, and non-profit organizations.

➢ **Bo Dong et al. (2014).** Web 2.0 is getting the attraction of Information Technology professionals, Businessmen, and web users. It proposes new procedures and skills to work successfully and positively in an internet group of exercises, expressed and endorsed by users. The core impact of the study is to create a digital education system using mashup accessibility to develop the flourishing and sustainability of digital education. Usability, agility, flexibility, and individualization are some benefits of a mashup e-learning ecosystem to digital learning.

➢ **Lane Fischer et al. (2015).** According to them, the price of schoolbooks and other studying materials is equal to or much higher than the teaching fee of pupils/learners, and with the contribution/use of e-learning sources/products, it can be reduced. The research was conducted by observing the students who enrolled in the courses offered by Chadron State College, Mercy College, Peru, and the Pittsburg State University of USA. They examine the difference in outcomes between the pupils/students/learners that learn using open educational resources (OER) and those who did not. The pupils/learners who learn by using OER did better than that pupil who learns without OER.

➢ **Tomas Moravec et al. (2015).** In the research, they observed the effect on the student's results in the exams they gave with the usage of e-learning tools. They observed more than 2000 students of the University of Economics, Prague. The study established that the students who were given the exam by using e-learning tools did better than those who gave the exam without using e-learning tools. They analysed that the usage of e-learning tools possibly has a negative effect on students who completely depend on e-learning tools.

➢ **Gloria Mothibi (2015).** The study highlighted the encouraging effect of information and communication technology on the students of higher education who learned by using e-learning tools. The search result indicated the relationship between e-learning and students. Studies proved the valued encouraging effects on educational attainments/achievements on the students.

➢ **Shikha Dua et al. (2016).** In this study, they debated the forthcoming styles in a digital education system that will transform the future of our upcoming offspring for their good. Over a period of time, the world is transforming in a dramatic way. In the present scenario,

everything is changing very fast, and due to this, the old education method is not achieving its goals as fast as it can with digital education. With the establishment of enormous facts and figures in a structured manner a different and upgraded education system is required which is possible with the usage of information technology tools in digital education. Digital Education is the solution that can solve and flaws of an outdated education system.

➢ **Taghreed Kattoua et al. (2016).** They discussed the features, benefits, and drawbacks of e-learning. Self-paced independent study, Asynchronous interactive, and Synchronous learning are the 3 main categories of e-learning. E-learning is reasonable, time-saving, available anywhere anytime, stress relief, satisfactory, progressive, etc. A solid structure is needed to enhance learning in students, direct interaction is minimized and learning should be motivated with good learning habits. These drawbacks can be solved with proper well-constructed e-learning techniques and tools.

➢ **R Sugant et al (2016).** According to them the two key problems faced by Indian schools viz., inadequate infrastructure and poor quality teaching can be solved by digital intervention. Many companies are proposing digital learning solutions (DLS) for schools. The quality of DLS needs to be assessed but the assessment of the quality of DLS is quite complex.

➢ **Dr. Jayesh M. Patel (2017).** Educators' knowledge and abilities are the most significant features of the usage of Information Technology in the classroom. In the present time, many tools and techniques are available enabled with the internet but only some people know about these tools. With the use of technology, boring subjects can be studied in a joyful way. Different IT tools that are useful in E-education discussed by Dr. Jayesh are Moodle, Twitter, Blogger, Diigo, PREZI, Wikispaces, etc. The usage of this technology is very useful for the learners/students and it also satisfied the child-centered approach.

➢ **Janetta Ainslee (2018).** He mentioned about the progress of the education sector representing the period of the 21st Century in terms of digital education development. Online courses, online exams, and Digital textbooks are the new methods of education. With the use of information technology digital education is possible in schools, colleges, universities, and institutions. Digitization is converting learning, teaching, and other difficult activities into easy and fun learning way.

➢ **Dr. Umesh Kumari (2019).** In the 21st Century, there has been a significant increase in Digital and Virtual classrooms in distinct stages of education/learning which proved digital education is a boon to our society. The reason behind this study is to provide oversight of digital education and its benefit of it in India with the forthcoming opportunities and challenges of Indian society towards digital education. Digitization has changed our education system but without reducing the old traditional classroom learning. Digital education is the combination of both features; classroom learning and online learning

techniques. Digitization is the right technique to reduce the frivolous usage of paper and there are many more benefits of digitization.

- **Dr. Ajay Kumar (2019).** He argued that Digital Education is necessary in this competitive world because the involvement of Innovation and Technology is excess in every area and it is changing rapidly in the last few years. Technology made everything easier and quicker. There are many apps and other learning tools by which students can learn in a fun way. Digitization is convenient, safe, transparent, accountable, and time-saving. Government must take some appropriate and strict steps to increase online courses for students and to boost the internet speed which is necessary for the digitization of education. As English is a common language (Lingua Franca), the government should invest money to promote the native language for the distribution of knowledge through interpretation.

- **Navkiran Kaur (2019).** 21st Century can be described as digitization in the most exact method as possible. Digitization is offering many opportunities and resources but the education system in India requires flexibility to adopt the technology. India's population is very high and with the increase in student population teaching is being negotiated but with the development of online education techniques it can be resolved, which will also improve the quality of education. India has been rated the 3rd biggest internet consumer after US and China. Online education can be possible with the usage of the internet. Manually if we are handling roll numbers or maintaining attendance then it is a problem and a long process but with the use of computerized methods, it can be avoided.

- **Dr. Vijay Laxmi et al. (2019).** They debated towards institutions and colleges which are in a rural areas should be provided with smart classrooms and e-content in teaching. With the continuous process, it can be achieved and can be beneficial for the students. The government should empower learners and educators with information and communication technology skills and increase their abilities through training. The weak access to computers and ICT is a challenge in the digitization of educational skills. Poor knowledge of English is also a barrier to digital education.

- **Ravinder Kaur (2019).** Digital Education is not only promotion or publicity; it is an expectation and support. In light of information technology, the world is changing rapidly with the passage of time. Many possibilities are there for additional improvement in the education system. Cloud learning has come with a lot of benefits. Aurus Network Course Hub, Gate Forum, and many other institutions have implemented cloud solutions. Cloud is developing as an intermediate to enhance the quality of education. Cloud is less expensive as institutions have to invest only in a computer with a web browser and an internet connection.

- **Long Pham et al. (2019).** The research examines the relationships among e-learning service quality attributes, e-learning student satisfaction, overall e-learning service quality, and e-learning student loyalty in Vietnam. 1232 students were analyzed by exploratory

analysis. E-learning service quality was comprised of three factors namely, e-learning system quality, e-learning instructor and course materials quality, and e-learning administrative and support service quality. It is analyzed that e-learning service quality has a direct effect on e-learning student loyalty and satisfaction.

4. Scope of the study

The scope of this study is limited to the Senior Secondary schools of the state of Punjab. Senior Secondary education acts as a bridge between primary and higher education and is an important step toward planning for vocational and professional education. In this stage of education students' general education came to an end and at this stage, they have to make choices of the courses for the future studies of their interest.

There are over approximately 5000 (Fig 4.1) such schools in the whole state that becomes the population for the study. The whole of Punjab is divided into four regions (Fig: 4.2) named as Majha, Doaba, Malwa, and Poadh. Data has been collected from 450 schools in these four regions has been taken under study.

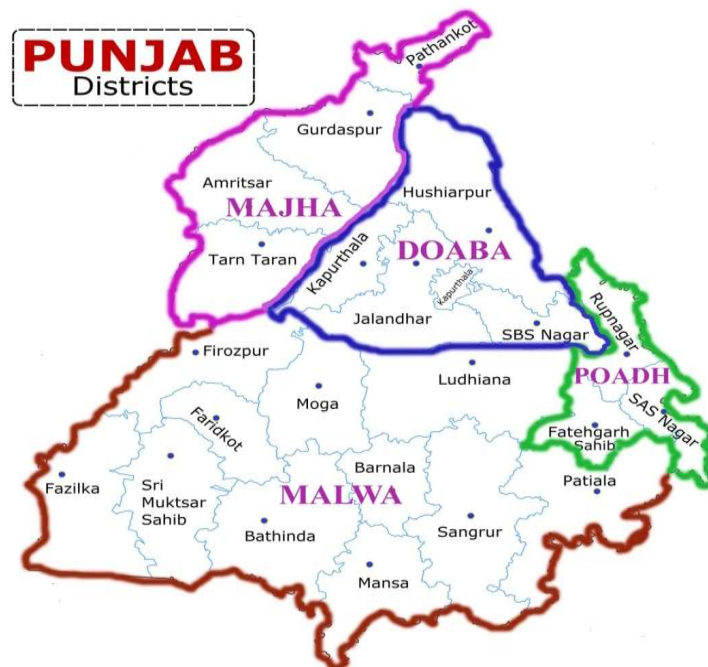| Regions of Punjab	Count of Senior Secondary Schools
Doaba	991
Majha	994
Malwa	2717
Poadh	425
Grand Total	5127

Fig: 4.1

Fig: 4.2

5. Population of the study

There are more than 5000 Senior Secondary Schools in Punjab and out of which approximately 4000-4500 Sr. Sec. Schools are using digital education for learning and teaching purpose. The researcher selected the number of schools proportionally from all four parts of the state of Punjab and collected the data. The sampling method and justification are given in the next section.

6. Sampling method & its justification

A sample size of 10% (approx. 450 schools) of the total population has been taken to collect useful data. A stratified convenience sampling method was used in the research. Out of the selected schools, one teacher (approx. 450 in totality) and two students (approx. 900) (Fig: 6.1) from each school were surveyed for the research on the service quality of digital education.

For the purpose of gathering primary data, two separate questionnaires were created separately for teachers as well as students. The questionnaire for teachers consisted of 59 questions and that for students' consisted of 69 questions. According to Hair et al., a minimum of eight to ten times data points of the number of items are needed to do factor analysis (2010). After submitting 450 questionnaires, the researcher received roughly 440 of which 10 had missing or unbalanced information. The survey had a 97.6% response rate. For students also the researcher was able to collect about 865 responses with a response rate of 96.11 %. The stratification was carried out as follows:

S no.	Regions of Punjab	Data points for faculty	Data points for students
1	HOSHIARPUR	30	60
2	JALANDHAR	30	60
3	KAPURTHALA	30	60
4	S.B.S. NAGAR	30	60
5	AMRITSAR	30	60
6	GURDASPUR	30	60
7	PATHANKOT	30	60
8	TARN TARAN	30	60
9	BARNALA	30	60
10	PATIALA	30	60
11	SANGRUR	30	60
12	LUDHIANA	30	60

13	FATEHGARH SAHIB	30	60
14	ROOPNAGAR	30	60
15	SAS NAGAR	30	60
	TOTAL	450	900

Table 6 - Table showing sampling Distribution

6:1 Demographic Profile of the Respondents

The general profile of the responders is covered in this section. These questions were posed as a questionnaire to the respondents, and they provided their responses regarding the biases from which these tables were created. About 950 samples for students and 450 for teachers were used in the data collection, of which 85 responses from students and 10 for faculty were excluded due to mistakes. As a result, the researcher had 865 samples left for students and 440 of them for teachers. This sample is a good representative of the state of Punjab as the sample is collected from almost all areas of Punjab and is justified to undertake factor analysis as well as SEM (Hair et. al.2020).

6:2 Age Education of Respondents

The age of the respondents is the study's important component. It was discovered that respondents to the survey who were 17 years of age made up the majority. These included over 43% of the responders. The 18 years age is the next significant section. These were generally students of classes 11th and 12th who responded to the survey. As far as the faculty survey was concerned the maximum number of respondents was from the age group of 30 to 35 years. Others were ready to undertake the survey and the young teachers could not understand the significance of the study so they did not respond appropriately.

Age of the student respondents				
	16 years	17 years	18 years	Above 18 years
Student	180	379	242	64

Age of the Faculty respondents				
	25-30 Years	30-35 years	35-40 years	Above 40 years
Faculty	48	228	93	71

Table 6.2 Age of the respondents

6.3 Gender of Respondents

The gender breakdown of the responders is covered in the following table. Therefore, it is extremely evident from table 6.3 that, out of 865 student respondents, 346 respondents are female. Similarly in the case of faculty respondents also it was found that very few female teachers responded. The female respondents of the study were mostly from urban schools as the rural teachers hesitated to respond to the survey.

Gender of the respondents		
	Male	Female
Faculty	298	152
Student	519	346

Table 6.3 Gender of the respondents

6:4 Type of school of Respondents

Another vital component of the study is the respondents' level of education. The varieties of schools the respondents are studying are shown in table 6.4. The majority of respondents both faculty and students were from private schools. Very few government school students and faculty are undertaking online education. The respondents who are undertaking digital education from government schools are mostly urban people. Students of rural government schools do not have much idea about online education also. As expected, the trends are quite progressive in the case of private schools. The majority of the private schools are in urban areas and are laying a lot of stress on digital education.

Type of school of Respondents			
	Government	Government aided	Private
Faculty	89	117	234
Student	140	288	437

Table 6.4 Type of school of Respondents

6: 5 Area of the school of Respondents

The next important aspect of the study is the area of school of the respondents. Most of the faculty members who responded to the survey were from urban schools where as semi-urban school faculty were second in the order. The situation was a bit different in the case of students where almost 50 percent of respondents were from the semi-urban school and about 30 percent from the urban area. This indicates the interest levels of the school teachers and students towards electronic education as well as studies promoting them. Faculty from the rural areas generally avoided talking to the researcher and the ones who responded were also not very proactive.

Area of the school of Respondents			
	Urban	Rural	Semi-Urban
Faculty	255	71	114
Student	230	189	446

Table 6.5 Area of the school of Respondents

6:6 Type of Subject of Respondents

The next important aspect of the respondent's profile is the subject of the respondents. The students were asked from four different domain areas i.e. arts, commerce, medical and non-medical. The results of the study are given in table no 6.6. It can be seen that maximum students as well as faculty engaged in digital education are from medical or non-medical lines. Commerce students are the next significant group of students who are using electronic education.

Type of Subject of Respondents				
	Arts	Commerce	Medical	Non – medical
Faculty	29	97	178	146
Student	94	156	320	295

Table 6.6 Type of Subject of Respondents

7. Results of ANOVA Analysis

To test the hypothesis ANOVA analysis was performed. The results of the same are given in the table below:

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	48.523	13	12.131	10.132	.005
Within Groups	483.677	852	1.197		
Total	532.200	865			

Table 7 Results of ANOVA

The result of the ANOVA analysis is statistically significant. This shows that there is a significant difference in the expectation of service delivery by students and that which is received by them.

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