

The Role of Digital Learning in Higher Study (HSSE) Special Concern with CBSE Schools

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Received : 10.08.2020 Revised and Accepted : 11.09.2020

Abstract:

The main aim of this study is to determine the role of digital learning in higher secondary school education special concern with CBSE schools. In our study we research positive impact of adopting technology and how can students improve their learning by using digital smart learning. We include higher secondary students, their parents and also teachers teach with modern technology as the sample of the research. This research will carry out with experimental approach. Pre-test and post-test of traditional and modern technology include questionnaire regarding student's academic achievements filled by students, parents, and teachers. Today all student want to do higher study which requires more and easy concept of related subject within a time limit, here smart class is needed to fulfill the requirement of the student to prepare themselves for competitive and higher studies.

Keywords: Central Board of Secondary Education (CBSE), Higher Secondary School Education (HSSE), Information, and Communication Technology (ICT), Higher Secondary Students (HSS), Digital Smart Learning (DSL), Modern Technology (MT).

1. Introduction

Today is the world of competition where students and teachers both have burden of lot of syllabus exist in the course material. Teachers are expected to teach the course in easily understable, and in detailed manner. While students are expected to understand, and grasp complete knowledge provided by educator. In the modern world teachers as well as students both expect to each other that they play significant role in teaching and learning the syllabus.

Teachers pay their full effort to plan the syllabus in meaningful understanding and also create interested among learners. Learners want playful environment where they learn by fun. In this way Digital Smart Technology play a very vital role to fulfill the needs of teachers and students. Modern world demanded complete and updated knowledge gainers. Now-a-days teaching through reading a book or writing on black board is not sufficient. Teaching methodology must be varied as per subject, knowledge, and information to be provided. **Result of any process depends on their way of working.** Therefore selection of teaching methodology based on subject requirement and also learners behavior. Classroom with digital smart technology completely change the look of education. It converts teachers and text book-centered teaching into smart students-centered teaching. Digital smart technological tools create knowledge rich environment where students enjoy learning through smart technology. In the world of technology every one accepts the role of technology especially in education sector. Educational management society, school's principals, even teachers who teach through traditional method by using black board, and most of parents also agree to integrate digital smart technology in the educational organization. Tradition teaching staffs take interest in training for smart teaching through digital smart technology.

Significant role of digital learning: Digital smart technology facilitates teachers to explain their topic in attractive manner by using multimedia software and power point presentation. Through such explanation teacher teach their topic more easily and deeply. Students also pay much longer time in learning through digital smart technology. Such type of teaching methodology makes hard subject easier. Digital smart technology changes the way of teaching and learning, in such a way that both enjoy technical knowledge of digital classroom. The integration of digital smart technology in education system enhances the importance of digital education for future makers. Implementation and use of digital smart technology in a meaningful way not only enhance smart learning but also increase involvement of students in their study. Complete session of teaching through smart technology can also be recorded for further teaching and learning and it can be provided to parents through organizational web site or personally e-mail. In this way digital smart technology also add to the role of parents in students' learning.

In the Digital learning, digital smart technology facilitates teachers to explain their topic with the help of audio, video including moving images and animation. Digital smart technology contains digital screen for showing images, sometimes teachers also able to use a highlighting tool as a pen or can scroll the screen only by touching. This method of writing on board saves

time and also develops technical skills in educators. Digital smart technology provides different learning way for different-different learners. Sometimes educational organization may provide online live teaching classes for those students they reside in distant/ remote areas. Now-a-days digital education is able to reach to the students. Digital smart technology provide flexibility in teaching and learning also so that teachers able to skip some of syllabus if he/she does not need to explain and students are also able to select the topic for learning as per their wish. This flexibility in learning gives freedom to the students so that they can be able to learn anywhere and anytime as per their comfort. In this way digital technology make teaching and learning dynamic.

Digital learning support learning and teaching by using internet so that at the time of teaching teachers are able to use different resources available online and can explain their topic by using multiple illustrations. Digital technical tools also create teachers' work interesting like writing assignment, making notes of hard topics, grading of students' performance etc. Students also learn many technical skills like making presentation, using internet resources for gaining knowledge, e-communication with the help of e-mails etc. Using internet in digital classroom enhance learning experience of both teachers and students. Online learning makes learners active as it provides lot of resources having rich knowledge relevant to the topics. Learning through digital technology encourages learners towards individual learning as per their learning speed, and learning habits. It also provides an opportunity for those students who believe in collaborative learning. Students can participate in different online educational activities and can share their views, in this way they can able to make their group for online group study.

Digital learning may also provide some effective result such as-

- It improves the effectiveness and productivity in teachers as well as students to solve difficulties in the class room.
- Makes learning an enjoyable experience for students.
- Improve academic performance of students.
- There are worksheets, web links for more information related to topics taught.
- Attractive videos, animation extend capturing power.
- Provide wide diversity of learning styles.

2. Review of Literature

As we move towards 21st century modernization enter in our lives in the form of digital environment. New generation grow in digital culture therefore they fill comfortable with digital

technological tools. In the previous year's many researchers give their view towards use of digital learning in the education field and also provide the direction of current research to found the successful role of digital learning in higher education system.

As per the view of **Anttila et al.** in the year **2012**, digital technology provides a digital tool to the education system. Through these tool teachers able to collect deep and more understable study material for the learners. These material help's the teacher to create informative environment in the digital classroom. In this way teachers try to enhance learning experience of all students. In the same year **2012**, **Mr. Hockly** also suggested that content of digital study material become more attractive as it acquire many multimedia effects like sound, moving images, attractive pictures, graph, etc. Digital learning not only provides attractive study material but also develop some more skills demanded in 21st century. These skills are e-communication between teachers and students, or students and students. In this way they develop interactive skill. Digital technology also promotes self-learning where through digital content learners try to develop self-understanding skills.

According to **Mr. Doris Holz berger et al.** in the year **2013**, digital learning is nothing but it is an attractive presentation of study material in digital format. The main purpose of such type of presentation is to attract learners towards study and teach some important technical skills also. Digital presentation of study material explain hard subject in easy manners so that it can be understand by all kind of learners. One more aim of digital presentation is to make teaching interesting and more effective. During teaching use of technical devices enhance technical skills of educators. Digital content has variety of explanation of same topic that help in improving of personal knowledge. It has both audio and video type learning.

Some of the researchers evaluate the role of digital learning with the help of learners' result and outcomes of learning activity. **Lubega et al.** in the year **2014**, found that the outcome from the learners is dependent upon teaching material and also the way of teaching. According to him the evaluation of learning effect can be possible by observing learners result after learning through digital learning devices. **Lubega** said that learners outcomes effected by many items like way of teaching, mode of learning, digital presentation of study material, availability of information related of courses, digital learning environment etc. In the same year some of researchers discussed that outcome of learning activity also affected by some individual characteristics and behavior of learners. As per the view of **Jude et al.** in the same year **2014**, all learners have their own way of learning. Most of the learners enjoy learning on their own preferences. Digital learning facilitate learner to learn anywhere and at any time where they

feel comfortable. Digital learning provides them freedom from the restrictions of traditional learning. They have no barriers of learning under four walls of school premises and follow school's time table provided by instructors. Freedom in learning also enhances digital learning experience of learners. In the year **2014, Mr. Hwang** concluded that digital smart learning system always available for learners as instructor. There is no fixed time of providing guidance for learning. It is facilitating all 24 round clocks. Digital smart learning assists them in learning activity, encourage them in learning through digital devices, guide them for operative digital devices, and provide varies way of learning at the last minute.

In the year **2015, Tikhomirov et al.** suggested that educational programs must be flexible, and understable by all level of students. It should be modified, and facilitate all learners to create their own unique way of learning. Such type of advancement in education system brings by digital learning system. Smart digital learning system design the content in smart way so that it provides daily learning task to learners and also encourage them to complete their learning tasks in challenging manner. It provides an opportunity of deep learning and makes subject master to all learners in their interest relevant field.

Di Giacomo et al. (2015), highlighted “an increasing performance in the lower reading children applying a smarty digital tool. The results suggested that the efficiency and the positive influence of technologies in the cognitive process: in the silent reading, the child may be better stimulated to learn and to comprehend the information using technology interactive”. Digital technologies always used to search how learners learn innovatively as well as teacher taught effectively. The role of technology is to support student's achievements. The main aim of our study is, to investigate the relationship between the role of SMART Board and effectiveness, efficiency, interest towards learning of the students' and improvement in their academic performance as well as effectiveness in teacher's teaching methodology and also how digital smart learning create a positive and healthy environment in smart class room.

In the year **2016, Zhu et al.** do their study around overall development of student that will be needed in 21st century. According to them there are 3 major factors playing a very vital role in smart learning. First one is **Smart learning environment**, second is **Smart way of teaching**, and third is **Smart learners** themselves. They completely focus on smart learners and found the factors link smart learners to smart learning. They found that human directly affected by their environment in this way they study about smart learning environment. **Zhu et al.** analyzed about learning environment and found that technological rich environment create interest in learners towards learning. In the modern culture students' learning must be effective,

efficient, and meaningful. As per the views of researchers, learning should be adoptive, modified, and student-centric. For the best interaction of learners in learning, all needed technological tools must be available that maintain continuity in smart learning. **Zhu et al.** also observed that learning through smart technology is not as easier as instructed. High orders skill develops only under high skilled person. During smart learning smart teachers also play very vital role in learning. Smart teachers taught the students that how to operate smart technology in learning. How they can take benefits with this technology during individual learning. With the help of high skilled person, students can also be able to develop critical thinking and unique learning skills. The main aim of **Zhu et al.** study is to make the learners as smart learners of 21st century. They place smart learners at the center of smart learning and study all the impact that affects smart learners. According to them a smart learners must have to develop certain skills themselves like ability of self-understanding, basic knowledge, get in touch with modified culture, and self-intelligence. These skills help the smart learners not only in their learning but also in their whole life in modern culture.

Mr. Liu et al.'s also did their research work based on smart learning environment in the year **2017**, according to them modern education turnaround the thinking of learning environment, as it has major effect on students' learning. Now-a-days smart learning environment does not mean that the availability of smart tools creates smart learning environment, rather than smart learning tools it consists of many thinks that needed by students' during learning time. These are smooth operation of digital tools, teaching methodology, tasks, presentation of syllabus, media, freedom of time and place for learning, collaboration of communities for learning, assessment, planning of delivering lectures and other supportive structure.

In the year **2018**, **Durna-Sanchez et al.** describe the goal of smart learning and its effect on learners' learning. According to them background of learning must be clear, modified, and arrange in proper order. It must be meaningful. They focus that smart content of syllabus must be design in such a way that they encourage the students to gain the concept more deeply. Deep study of related subject or topic makes them capable to solve their problems in easiest manner either along with smart educator or by their own. They observed that adapted and transparent learning make the learners smart. Through the modified learning they become able to learn flexibility and work in collaboration at any time and at any place. Thus, smart learning improves the quality of education and also enhances the learning skills of learners throughout the whole time period of learners' educational process. Learning through smart learning tools also emergence the technical skills in the learners to face the need of real environment.

3. Research Objectives

1. To study the adoptability of digital learning technology by Board and non-board exams students.
2. To study the improvement in Board and non-board exams student's learning through smart digital technology.

4. Hypothesis

H₀ : There is a significant relationship between Board and non-board exams students for adoptability of smart digital technology.

H₁ : There is no significant relationship between Board and non-board exams students for adoptability of smart digital technology.

5. Research Methodology

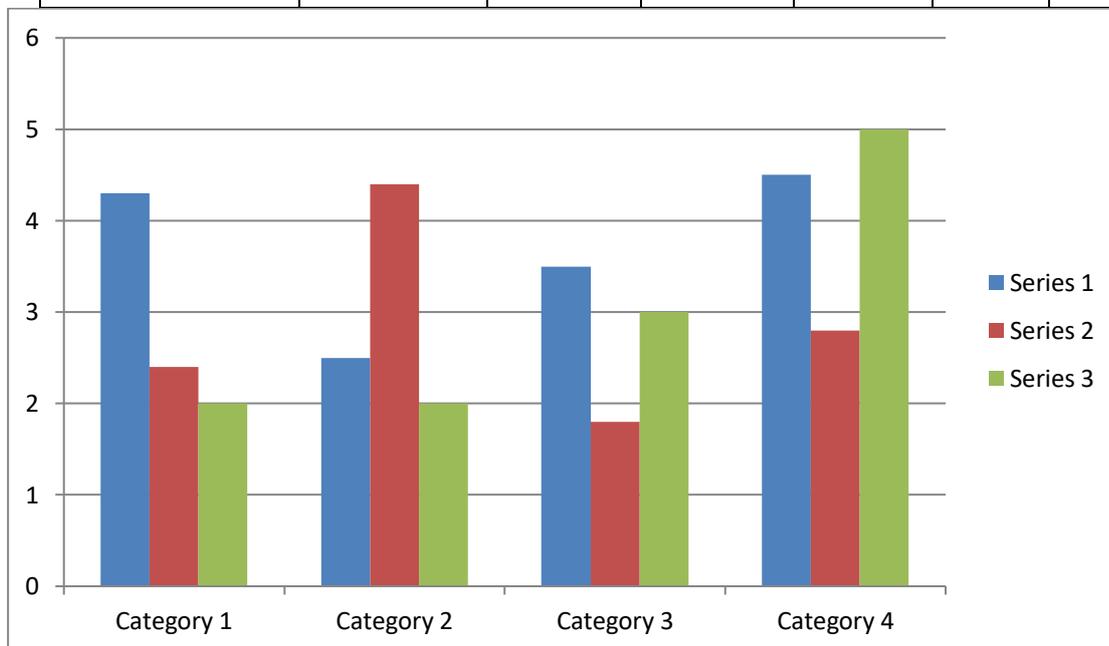
Sample Size taken 100 board exam's students and 100 non board exam's students and implement Chi Square Test.

6. Research data and Chi Test:

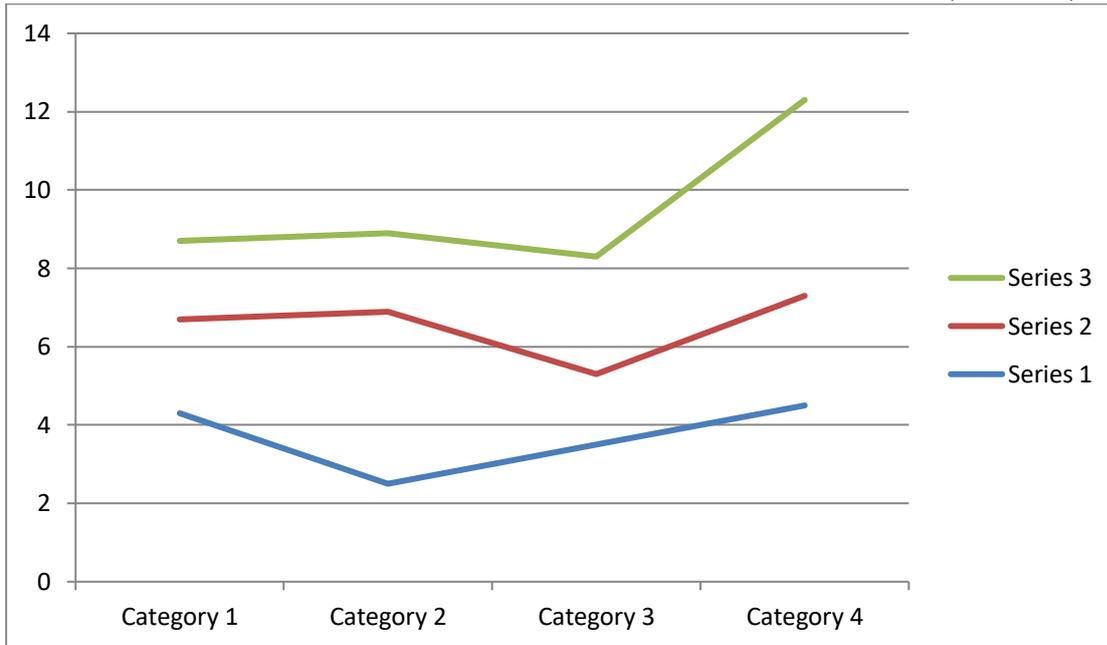
Table 1

	Group	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Digital learning play positive role in education system?	Board Exam	4	17	27	39	13
	Non Board Exam	2	14	33	41	10
Study material available through digital smart	Board Exam	3	24	19	46	8
	Non Board	6	26	25	33	10

technology is understandable as traditional classes	Exam					
Digital smart technology enhances your online searching skills?	Board Exam	8	27	5	38	22
	Non Board Exam	10	25	15	35	15
Learning through smart technology also save your time for further preparation?	Board Exam	2	31	21	40	6
	Non Board Exam	2	46	19	31	2
Learning through smart technology improves your reading and writing habits?	Board Exam	6	41	8	23	22
	Non Board Exam	6	52	14	13	15



Graph of table 1



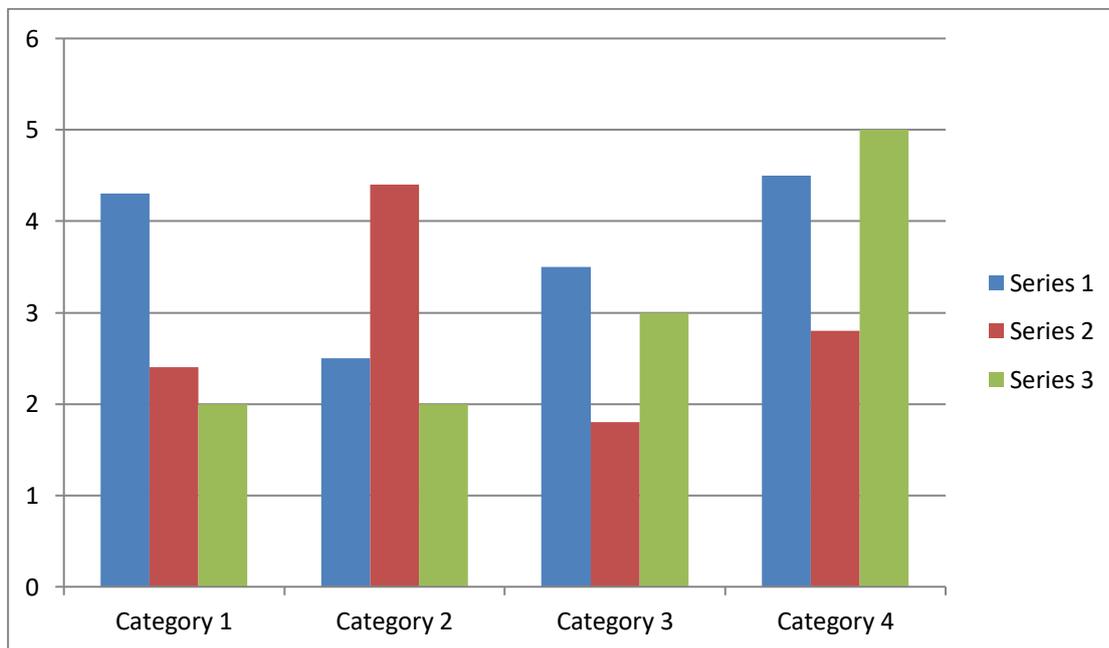
Step 1. There is a significant relationship between Board and non-board exams students for adoptability of smart digital technology. Now, after calculating Chi Square test-

The null hypothesis is accepted.

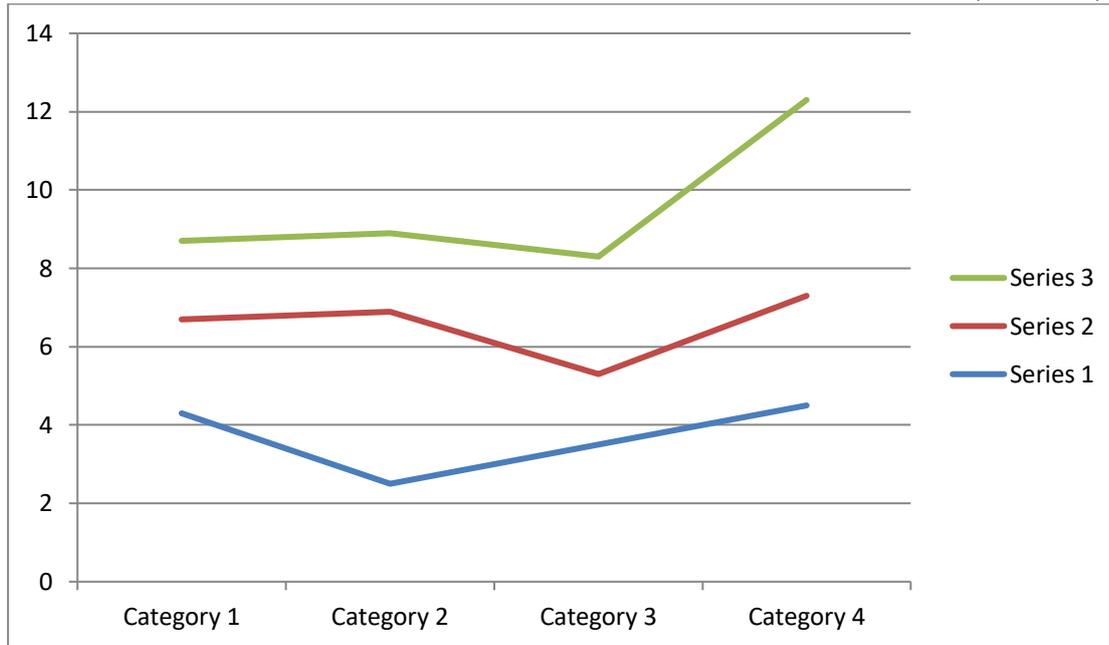
Table 2

Parameters	Group	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Learning through digital smart tool is easy?	Board Exam	25	19	15	23	18
	Non Board Exam	14	21	25	30	10
Can easily operate digital smart learning tool?	Board Exam	6	27	26	25	16
	Non Board Exam	8	27	35	22	8
Learning through digital	Board Exam	6	40	7	25	22

technology provides deep knowledge of relevant subject?	Non Board Exam	6	36	16	25	17
Smart technology provides several way of learning hard subject?	Board Exam	4	19	13	48	16
	Non Board Exam	4	37	18	31	10
Smart digital tool also teach you that how to perform in the examination?	Board Exam	6	20	22	31	21
	Non Board Exam	6	36	28	16	14



Graph of table 2



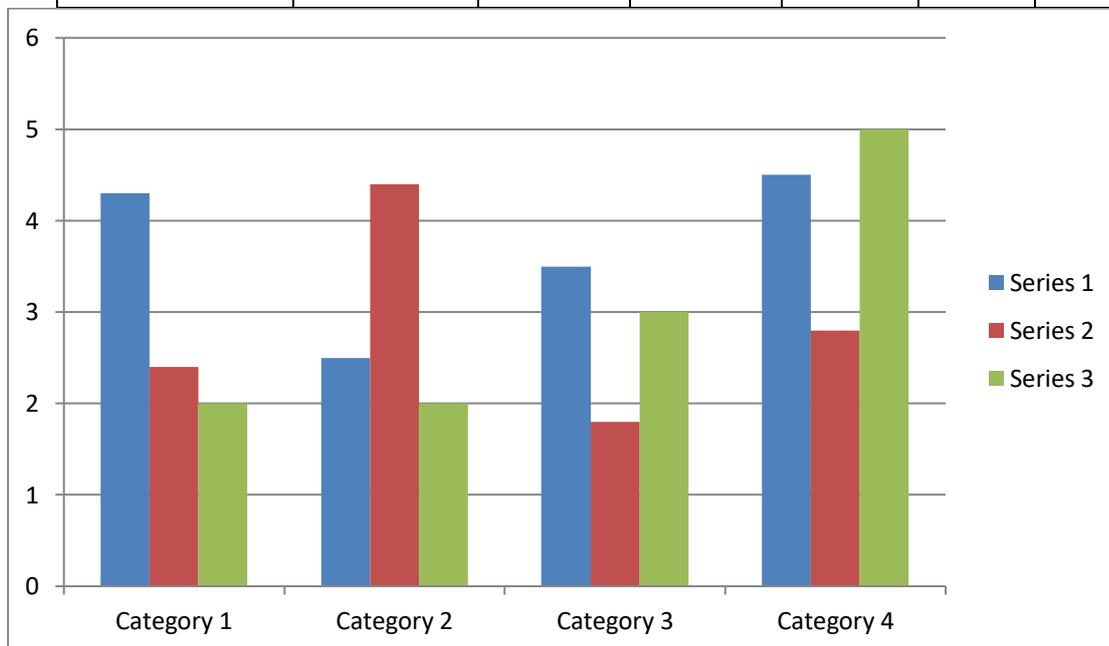
Step 2.

There is a significant relationship between Board and non-board exams students for adoptability of smart digital technology. Now, after calculating Chi Square test- **The null hypothesis is accepted.**

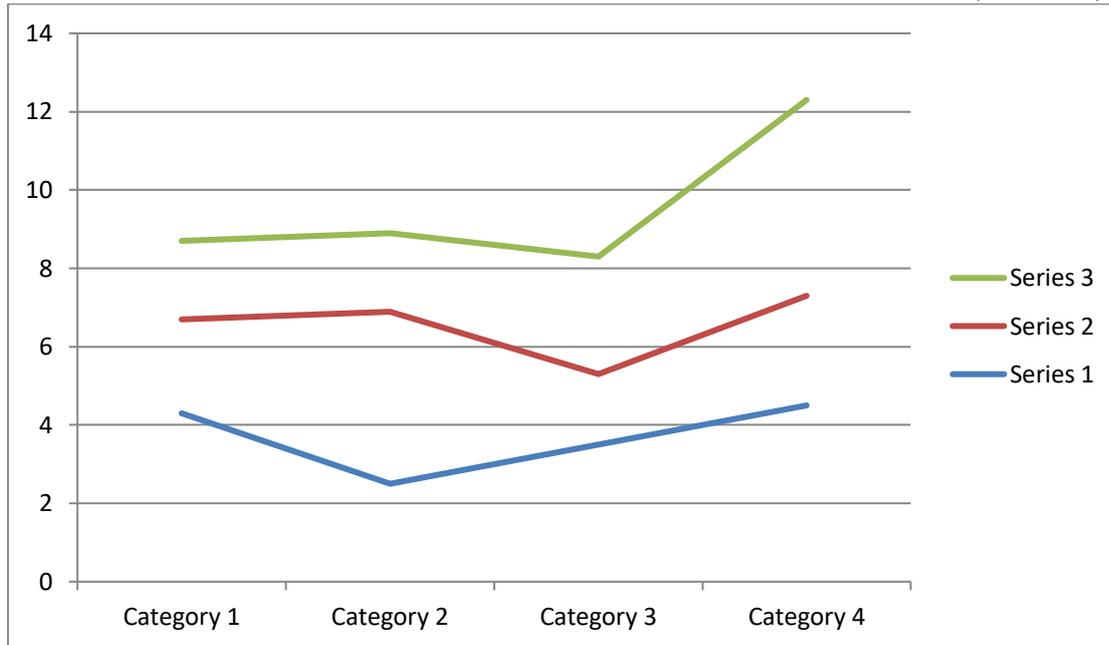
Table 3

Parameters	Group	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Learning through digital smart tool maintains your learning discipline?	Board Exam	17	11	24	32	16
	Non Board Exam	13	18	35	22	12
Digital smart technology create learning environment	Board Exam	9	12	39	29	11
	Non Board Exam	12	22	37	27	2

more comfortable?						
Digital smart technology is adoptable by all level of students?	Board Exam	5	32	7	37	19
	Non Board Exam	7	30	16	33	14
Learning through digital smart technology enhances your learning time?	Board Exam	4	36	13	31	16
	Non Board Exam	4	52	19	18	7
Digital study content attracts you to do more and deep study?	Board Exam	4	15	31	35	15
	Non Board Exam	4	32	35	20	9



Graph of table 3



Step 3. There is a significant relationship between Board and non-board exams students for adoptability of smart digital technology. Now, after calculating Chi Square test-

The null hypothesis is accepted.

6. Analysis and Interpretation

In the above research, after implementing chi test in primary data, result found that digital learning is more effective for both board and non-board exam’s students. In 5% level of significance we found that both board and non board exam’s students’ responded digital learning is more useful. Therefore learning through digital smart tool must be implement in higher study specially concern with CBSE Schools.

Table 1: The chi square value for the parameters digital learning play positive role in education system, it provide digital study material in understable manner, it enhances online searching skills, it saves time for further preparation and also improve reading and writing habits are 1.998, 4.260, 6.747, 6.163 and 7.040 respectively. P value of all the above parameters is greater than 0.05. So, there is a significant relationship between Board and non-board exams students for adoptability of smart digital technology.

Table 2: The chi square value for the parameters learning through digital smart tool is easy, it can be easily operate, it provides deep knowledge of relevant subject are 8.913, 4.472, and

4.373 respectively. P value of all the above parameters is greater than 0.05. So, there is a significant relationship between Board and non-board exams students for adoptability of smart digital technology.

Table 3: The chi square value for the parameters learning through digital smart tool maintains learning discipline, and it is adoptable by all level of students are 6.697, and 4.906 respectively. P value of all the above parameters is greater than 0.05. So, there is a significant relationship between Board and non-board exams students for adoptability of smart digital technology.

Therefore **null hypothesis is accepted.**

7. Conclusion

As conclusion is found that learning through digital smart technology is loved by all type of student. In further analysis, detailed conclusion found that are-

According to table 1, there is no significant difference between the view of board and non board exam's student. Both of them are agree that digital learning play positive role in education system, digital study material is as understable as traditional study material, it enhance related searching skills, it improves reading and writing habits, and also saves time for further study.

According to table 2, again there is no significant difference between the view of board and non board exam's student. They both are agree that learning through digital smart tool is easy, its operation is also easy, and digital technology provides deep knowledge of relevant subject. In some other ways there is significance difference in their views, like board exam's students respond positively that digital technology provide several ways of learning hard subject and it also teach that how to perform in the examination. Here the significance level is 5% only for board exam's students.

According to table 3, again there is no significant difference between the view of board and non board exam's student. They both are agree that digital smart technology helps in maintaining learning discipline and also understable and adoptable by all level of students. While there is significance difference also found that board exam's students agree with digital technology create more comfortable environment, it enhance learning time, and also attract for more deep study. Here the significance level is also 5% only for board exam's students.

8. Suggestions

Digital smart technology must be implemented by CBSE School for higher study and for all board and non board exam's students. Digital study material must be in easy and understandable language with diagrams. There should be sufficient practice problems especially for exams point of view. To increase the adoptability for both board and non board students, content of study material must be in flexible manner means unwanted part can be skipped. There should be flexibility in digital smart software according to subject content for non board exam students. For board exam's student, learning time is more valuable so content must be in summarized form. Before implementation of Digital smart technology all organization must be ensure toward content of study material and their resources.

Reference

1. Anttila, M., Valimaki, M., Hatonen, H., Luukkaala, T., & Kaila M. (2012). Use of web-based patient education sessions on psychiatric wards. *International Journal of Medical Informatics*, 81(6), 424- 433.
2. Hockly, N. (2012). Substitute or redefine? *Modern English Teacher*, 21(3), 40-42.
3. Keane, D. T. (2012). Leading with Technology. *The Australian Educational Leader*, 34(2), 44.
4. Holzberger, D., Philipp, A., & Kunter, M. (2013). How teachers' self-efficacy is related to instructional quality: A longitudinal analysis. *Journal of Educational Psychology*, 105(3), 774-786.
5. Jude, L. T., & Birevu, M. P. (2014). Adoption of the SAMR model to assess ict pedagogical adoption: A case of Makerere University. *International Journal of e-Education, e-Business, eManagement and e-Learning*, 4(2), 106-115.
6. G.-J. Hwang (2014), Definition, framework and research issues of smart learning environments - a context-aware ubiquitous learning perspective. *Smart Learning Environments* 1(1), 4.
7. J. Lee, H. Zo, H. Lee (2014), Smart learning adoption in employees and HRD managers. *Br. J. Educ. Technol.* 45(6), 1082–1096.
8. J.E. Lee, S.M. Jin (2014), Implementation of smart learning model for improving digital communication competencies of middle aged. *The Journal of the Korea Contents Association* 14(4), 522–533.

9. V. Tikhomirov, E. Yankovskaya, in *Smart Education and Smart e-Learning*, ed. by V. L. Uskov, R. J. Howlett, L. C. Jain. Three dimensions of smart education, vol 41 (Springer, Cham, Switzerland, 2015), pp. 47–56.
10. Z.-T. Zhu, M.-H. Yu, P. Riezebos (2016), A research framework of smart education. *Smart Learning Environments* 3(1).
11. D. Liu, R. Huang, M. Wosinski, in *Smart Learning in Smart Cities. Characteristics and framework of smart learning* (Springer Nature, Singapore, 2017), pp. 31–48.
12. B. Gros (2016), The design of smart educational environments. *Smart Learning Environments* 3(1), 15.
13. A. Duran-Sanchez, M. Del Rio-Rama, C. de la, & O. Sarango-Lalangui. (2017). Analysis of the scientific literature published on smart learning. *Espacios*, 39(10).