Original Research Article

Opinions of B.Ed Students in the Cuddalore district of Tamil Nadu about e-learning Materials for the Subject of Understanding Disciplines and School Subjects

Abstract

Understanding the research problem and structuring the study is more accessible with a conceptual framework. Technology-driven teaching and learning are transforming education in the digital age. E-learning, which uses internet platforms, digital documents, and electronic resources, has transformed education. In this context, B.Ed students—future educators—must be asked about e-learning materials for professional development. Research objectives: To understand B.Ed students' perception of the content quality, accessibility and usability of e-learning materials for this subject. Population of the Study: All B.Ed. Tamil Nadu Teachers Education University students in the Cuddalore district of Tamilnadu during 2023 constituted the study population. Sample of the Study: The investigators selected five hundred and twenty-three B.Ed. Tamil Nadu Teachers Education University students as the study sample using a cluster sampling technique. The questionnaire was used to collect data for this study. A significant proportion of students responded affirmatively to the inquiry regarding their prior experience with e-learning, affirmatively to the inquiry regarding their prior utilisation of e-learning resources in their B.Ed programme, comfortable using technology for learning purposes, and most preferred 'Video lectures'.

Keywords: e-learning, accessibility, usability, content quality and preferences

1. Introduction

Understanding the research problem and structuring the study is more accessible with a conceptual framework. Technology-driven teaching and learning are transforming education in the digital age. E-learning, which uses internet platforms, digital documents, and electronic resources, has transformed education. In this context, B.Ed students—future educators—must be asked about e-learning materials for professional development.

Teacher education programs, particularly B.Ed degrees, emphasize discipline and subject knowledge. Aspiring teachers learn essential knowledge and pedagogical skills to teach

varied school subjects. As technology evolves, instructors have more e-learning materials and resources to teach this subject. Digital information like interactive modules and multimedia presentations aids learning and comprehension.

The opinions and attitudes of B.Ed students regarding e-learning materials are pivotal as they shape the future of educational technology integration in classrooms. Their experiences as learners directly influence their approaches as educators. Hence, exploring and understanding how B.Ed students perceive and engage with e-learning materials designed for Understanding Disciplines and School Subjects is crucial.

2. Research Significance

This study focuses on the perspectives of B.Ed students regarding using e-learning materials for Understanding Disciplines and School Subjects in the hopes of bridging a significant gap in the existing body of research on the topic. Understanding the perspectives of these future educators is essential for several reasons:

Enhancing Teacher Preparedness: The insights gained from this study can inform teacher education programs and curriculum designers in adapting e-learning materials to better prepare teachers for their roles in a digitalized educational landscape.

Effective Resource Development: By understanding the preferences and needs of B.Ed students, e-learning content developers can create materials that align more closely with future educators' expectations and learning styles.

Promoting Lifelong Learning: B.Ed students' experiences with e-learning materials can also influence their attitudes towards continuing professional development throughout their teaching careers.

Improving Educational Technology Policies: Policymakers can benefit from insights into how B.Ed students perceive the integration of e-learning, which can inform the development of policies and guidelines for digital education at the pre-service level.

3. Review of Related Literature

Investigator reviewed about fourteen studies related to the following topics

i. Researches related to e-learning in general.
ii. Researches related to e-learning in B.Ed.
iii. Researches related to e-learning in different subjects in B.Ed.

iv. Researches related to different subjects in B.Ed.

v. Researches related to the topic ‘understanding disciplines and school subjects’in B.Ed.

i. Researches related to e-learning in general.

Mamattah (2016) conducted a study on ‘Students’ Perceptions of E-Learning’. This thesis examines students' views on e-learning, an alternative to classroom instruction. The research was done because technology has made e-learning possible. Thus, knowing what students’ think of it was essential since they are the main benefactors. The study used 80 questionnaires at HO Polytechnic, Ghana. The research found that most students believe e-learning is creative and should be supported, while some worry about workplace prejudice. It was also found that respondents favour hybrid learning, which combines online and face-to-face education. The study suggests that Ghanaian educational institutions invest more in e-learning tools than constructing satellite campuses nationwide because students prefer hybrid learning.

Thakkar & Joshi (2017) conducted a study on Students’ Attitude towards E-learning.Teaching and learning are increasingly using electronic methods. E-learning can help India, with a vast population and limited educational resources, meet its growing education needs. Learners' preparedness is crucial to E-learning. Despite its benefits, E-learning is only helpful if learners adapt. This study examines diploma engineering students' e-learning attitudes. This study uses a survey. A sample of 56 diploma engineering information technology students was used. Data was collected using an attitude scale. The attitudes of students regarding E-learning were compared by gender, locality (rural/urban), and caste (General/Reserved).

Encarnacion , Galang, & Hallar (2020) Conducted a study on ‘A Study on The Impact and Effectiveness of E-Learning on Teaching and Learning. This article discusses the usefulness and influence of e-learning on the Undergraduate Program (UGP) and General Foundation Program (GFP) at Oman Tourism College in Muscat, Sultanate of Oman. Method – Online surveys assessed teacher and student E-Learning experience using a mixed approach. Five effectiveness factors were used to evaluate E-Learning. The study used the five elements to determine teachers' and students' consensus and target consensus measures on E-Learning effectiveness. The study also compared student and teacher views on E-Learning. Also examined were E-Learning's effects on teaching and learning methods.

Almahasees, Mohsen, & Amin (2021) Conducted a study on ‘A Study on Faculty’s and Students’ Perceptions of Online Learning. COVID-19 has disrupted education in several schools. It assessed academic institutions' ability to handle crises. Online learning dominates Jordanian education during the pandemic. After four months of online education, two online surveys were given to faculty and students to assess the learning experience. The study used two surveys to assess faculty and student views on online learning. One was randomly assigned to 50 faculty members and 280 students to examine Jordan's online education's pros and cons. Zoom, Microsoft Teams, and WhatsApp were Jordan's leading online platforms for interactive classrooms and student communication. The study indicated that professors and students feel online education is effective during the pandemic. Its effectiveness is lower than face-to-face learning and instruction. Faculty and students reported that online learning problems include adapting to online education, especially for deaf and hard-of-hearing students, lack of contact and motivation, technical and Internet concerns, data protection, and security. The benefits of online learning were also agreed upon. Self-learning, low prices, simplicity, and flexibility were the key perks. Online learning is a temporary solution for COVID-19 but cannot replace face-to-face learning. The study suggests blended learning for rigorous learning.

Gopal, Singh, & Aggarwal (2021) conducted a study on ‘A Study on Impact of online classes on the satisfaction and performance of students during the pandemic period of COVID 19 . The study aims to discover and establish the relationship between factors affecting students' satisfaction and performance in online classrooms during the COVID-19 pandemic. Quantitative data were acquired from 544 Indian university students studying business management (B.B.A or M.B.A) or hotel management via an online survey. Hypotheses were analyzed using structural equation modelling. The study found that four independent factors—instructor quality, course design, rapid feedback, and student expectation—improve student happiness and performance. Educational management must consider these four factors to ensure online course satisfaction and performance. This study is being undertaken during the COVID-19 pandemic to determine how online education affects student achievement.

Muthuprasad, Aiswarya, Aditya, & Jha (2021) conducted a study on ‘A Study on Students’ Perception and preference for online education in India during COVID -19 pandemic COVID-19 has forced schools worldwide to close, disrupting academic schedules. Most schools use online learning systems to maintain educational activities. However, the

preparation, design, and efficiency of e-learning still need to be clarified, especially for a developing country like India, where technical constraints like device appropriateness and bandwidth availability are significant issues. This study surveys 307 agricultural students online to determine their views on online learning. We also examined student preferences for online class features to assist them in creating efficient online learning environments. The results showed that 70% of respondents would choose online classes to manage the curriculum throughout the pandemic. Most pupils favored smartphones for online study. We determined through content analysis that students prefer recorded lessons with end-of-class quizzes to increase learning. Students said online programs are flexible and convenient, but access concerns in remote regions made them challenging to use. In agriculture education, where many courses are practical, switching to online may not be practicable. This article might help build the curriculum for a hybrid mode.

Ninsiana, et al., (2022)This study explores high school students' e-learning perspectives. This study evaluated how internet learning influences high students' English. Fifty intermediate-level students and 73 OQPT takers were studied. Next, the selected subjects were randomly assigned to experimental (EG) (n=25) and control (CG) (n=25)groups. Both groups completed a general English pretest, after which EG received WhatsApp. We got three Vision Book 3 lessons via WhatsApp. CG participants needed online instruction. Personal learning. After three classes, both groups took the general English posttest. Interviews and e-learning attitude surveys were provided to 10 students. The posttest indicated EG beat CG. EFL students preferred e-learning for teaching English, per the one-sample test. E-learning challenges included computer literacy, screen attention, and slow Internet in interviews.

ii. Researches related to e-learning in B.Ed.

Srivastava (2023) conducted a study on ‘A Study on Attitude of B.Ed. Pupil Teachers Towards E-Learning’. This study measures B.Ed student teachers' E-Learning attitudes. The study used a descriptive survey approach. For this study, all B.Ed. students of self-financed and government institutions of state and central universities of Varanasi are included. A sample of 100 B.Ed. students from central and state universities, including 50 self-financed and 50 government-funded students. Stratified random sampling will choose the selection. The average e-learning score was 294. The mean score shows B.Ed. student teachers are e-learning-friendly. Gender and kind of school management did not differ, but geography did.

iii. Researches related to e-learning in different subjects in B.Ed.

ReechaJrall & Kiran (2022) conducted a study on ‘Development of E-content Module and Measuring Effectiveness in the Topic Understanding ICT and its Application at B.Ed Level’. Electronic content lets students and teachers personalise learning, making it more popular in education. An E-Content module was designed, validated, and evaluated to test its effectiveness in teaching ICT to Bachelor of Education students. One group was used for pre- and post-tests. A random sample of 52 B.Ed College student-teachers was selected. E-Content Module and achievement tests collected data. Achievement assessments were performed before and after the e-content module intervention to evaluate effectiveness. E-content increases B.Ed student achievement. Thus, teachers should utilise it to engage potential teachers, according to studies.

Anand (2023)conducted a study on ‘An Evaluative Study of the B.Ed. Curricula Operative in Universities with Specific Reference to Environmental Education’.Environmental education, its history and growth, and its role in teacher education are examined in this study. This study explores global and Indian ecological issues, concerned people's initiatives, and environmental movements. The study design includes the title, objectives, key terms, delimitations, population, sample, data collection, and analysis. Two sections cover data collection, analysis, and interpretation. The B.Ed. environmental education syllabus is examined first. Part 2 of the B.Ed. curriculum evaluates pre-service teachers' environmental education syllabus awareness, knowledge, and attitude via a self-created questionnaire.

iv. Researches related to different subjects in B.Ed.

Fatima & Naaz (2015)This study evaluates B.Ed. geography students' performance and subject enrichment through interactive learning. The objective was to compare the mean content exam scores of B.Ed. candidates between experimental and control groups and between men and women. The investigation employed a "two-group post-test design" Using systematic sampling. 70 B.Ed. Geography students, out of a total of 130, were tested. The experimental group received a treatment to acquire and enhance knowledge, whereas the control group received standard instruction. This study found that interactive learning improved B.Ed. subject knowledge and performance.

v. Researches related to the topic ‘understanding disciplines and school subjects’ in B.Ed.

Register cartography, and Giovanni Parodi's Registerial profiles of school topics and university specialties were studied by Matthiessen (2021). School and university

enrollmentsare covered. Giovanni Parodi's university discipline registerial profiles and systematic functional school topic profiles complement. These pioneering contributions enrich the comprehensive approach, so future studies might fill gaps as personal registerial repertoires grow. They compared register and 'genre' approaches to situational language functional variation for conceptual clarity.

Subject Disciplines and the Construction of Teachers' Identities, edited by Thompson (2023). This chapter analyses how topic disciplinary identification changes teachers' identities. The chapter opens with the premise that teachers must teach their well-studied subjects morally and methodically. Teachers must understand subject principles and evidence regardless of expertise. This chapter posits that conceptual understanding of teaching a topic in specific settings influences instructors' sociocultural identities. Beginning English teachers show how subject disciplines, school subjects, and teacher identities are challenged throughout the chapter.

Hudson et al. (2023)examined ‘Trajectories of powerful knowledge and epistemic quality: assessing the transitions from disciplines throughout school subjects’. Comparative topic didactics research investigates academic discipline changes across school topics. According to the theoretical Framework, classroom-to-society transfer involves ‘powerful knowledge’, ‘transformation’, and ‘epistemic quality’. The Framework analyses Knowledge and Quality across School subjects and Teacher Education (KOSS) network empirical research. Footnote 1 The study explores discipline transitions across school topics after defining powerful knowledge as specialised creation and transfer. Frontier empirical data analysis uses broad subject groups. Use the famous Biglan classification to compare higher education disciplines. Our final topics include curriculum planning, teacher education policy, and subject-specific instructional content.

4. Identifying the Research Gap and Rationale of the Study

Studies by Mamattah (2016), Thakkar & Joshi (2017), Encarnacion, Galang, & Hallar (2020), Ninsiana et al. (2022), Srivastava (2023) reviewing this literature on e-learning, its effectiveness, and its use in education, especially in the context of teacher education it is found that this type of research is valuable. They also discussed students' attitudes, preferences, and opinions regarding e-learning materials. Investigators reviewed e-learning studies conducted during the Covid-19 period following studies viz Almahasees, Mohsen, & Amin (2021), Gopal, Singh, & Aggarwal (2021), Muthuprasad, Aiswarya, Aditya, & Jha

(2021) clearly shows that online learning was beneficial during the pandemic period. Investigators also reviewed research related to e-learning in different subjects in B.Ed the studies ReechaJrall& Kiran (2022), Fatima & Naaz (2015), and Anand (2023) found that it is beneficial for teaching and learning subjects offered in B.Ed. Investigators examined literature by Matthiessen (2021), Thompson (2023), Hudson, Gerickeb, Schellerc, & Political (2023) related to Understanding Disciplines and School Subjects to understand their unique challenges and requirements. Although there are studies conducted at the B.Ed level related to e-learning, there are no studies related to the subject 'Understanding Disciplines and School Subjects'. Therefore, it is imperative to study the opinions of B.Ed students on the development of e-learning material in the issue 'Understanding Disciplines and School Subjects'.

5. Research Purpose

The primary purpose of this research is to investigate the opinions and perceptions of B.Ed students regarding e-learning materials designed for Understanding Disciplines and School Subjects. Through a systematic examination of their views, this study aims to:

- Assess the effectiveness of e-learning materials in facilitating their understanding of the subject.
- Explore their preferences and experiences with different types of e-learning content.
- Understand any challenges or barriers they encounter when using e-learning materials.
- Identify areas for improvement in e-learning materials to better support their teacher education journey.

6. Research Problem and Objectives:

Research Problem: Opinions of B.Ed Students in the Cuddalore district of Tamil Nadu about e-learning Materials for the Subject of Understanding Disciplines and School Subjects

Research Questions:

- What is the perception of B.Ed students regarding the content quality of e-learning materials for this subject?
- What is the perception of B.Ed students regarding the accessibility of e-learning materials for this subject?

- What is the perception of B.Ed students regarding the usability of e-learning materials for this subject?

Research objectives:

- To understand B.Ed students' perception of the content quality of e-learning materials for this subject.
- To understand B.Ed students' perception regarding the accessibility of e-learning materials for this subject.
- To understand B.Ed students' perception regarding the usability of e-learning materials for this subject.

7. Operationalization of Terms

e-learning materials:E-learning materials refer to digital resources, content, and tools designed for educational purposes and delivered through electronic means, typically over the Internet or through computer-based platforms. It may be in the form of Text-Based Content like E-books or Articles and PDFs, Multimedia Content, Video Lectures, Audio Lectures, Interactive Simulations, Animations, Interactive Learning Modules, Online Courses, Learning Management Systems (LMS), online quizzes and Assessments, Synchronous and Asynchronous Content, Learning Apps and Mobile Content.

Understanding Disciplines and School Subjects: Curriculum and Pedagogic Studies offered in B.Ed. Degree Programme in Tamil Nadu Teachers Education University.

Opinions: Opinions related to e-learning materials, content quality, accessibility, usabilityand overall satisfaction with the e-learning experience.

8. Methodology of the Study

i. Population of the Study

All B.Ed. Tamil Nadu Teachers Education University students in the Cuddalore district of Tamilnadu during 2023 constituted the study population. Thirty colleges are offering B.Ed programmes in the Cuddalore district of Tamilnadu—about three thousand students studying in these colleges.

ii. Sample of the Study

The investigators selected five hundred and twenty-three B.Ed. Tamil Nadu Teachers Education University students studying in the Cuddalore district of Tamilnadu during the year 2023 were selected randomly as the study sample.

iii. Sampling technique

This study used cluster sampling. Five of thirty colleges were randomly selected for the investigation.

iv. Hypothesis of the Study

Null Hypothesis H_0: There is no significant variation in the preferences for e-learning materials among B.Ed students who are studying the course Understanding Disciplines and School Subjects.

v. Research Design

This is a quantitative type of study and uses survey method to collect data.

vi. Tools for Data Collection

The questionnaire was used to collect data for this study.

vii. Procedure for Data Collection

Investigators prepared a questionnaire using the content quality, accessibility, and usability of e-learning in 'Understanding Disciplines and School Subjects'. The questionnaire was tested for reliability and validity. It is given to the three experts for accessing validity. A pilot study was conducted, and the questionnaire was modified accordingly. The modified questionnaire was used for data collection.

- **Independent variables:** E-learning materials (content quality, accessibility, usability).
- **Dependent variables:**B.Ed. students' opinions (satisfaction, perceived learning outcomes, engagement).

9. Data Analysis

The collected data were analyzed quantitatively using percentages and chi-square.

Section 1: Demographic Information

A total of 34.8% of the student population consisted of individuals who were twenty-one years old. Thirteen per cent of the student population consisted of individuals aged twenty-two. The percentage of students who were twenty-one years old was 17.4%. Thirteen per cent of the student population consisted of individuals aged twenty-one. A total of 4.3% of the student population consisted of individuals who were twenty-five years old. Thirteen per cent of the student population consisted of individuals aged twenty-seven. A total of 4.3% of the student population was 33 years old. The male student population constituted 2% of the total, while the female student population accounted for 91.3%.

Section 2: Questions Related to the E-Learning Preferences

Question 1: Do you have prior experience with e-learning?

60.9% of the students said yes to the statement, 'Do you have prior experience with e-learning?'

39.1% of the students said no to the statement, 'Do you have prior experience with e-learning?'

Table 1: the chi square test based the experience with e-learning.

Category	Observed	Expected #	Expected
Yes	319	261.5	50.000%
No	204	261.5	50.000%

$\chi^2(1,N=523)=25.287$, p = 0.0001. The two-tailed P value is less than 0.0001. According to standard criteria, this difference is deemed highly statistically significant.

The maximum number is 319 for category 'yes'. Therefore, a maximum number of students answered yes to the question 'Do you have prior experience with e-learning?'

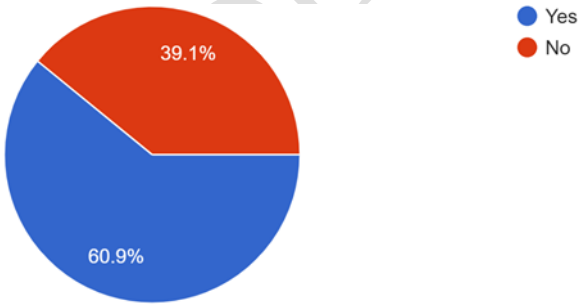

Figure 1: Graphical distribution based on the answer of the question no 1.

Question 2: Have you used e-learning resources in your B.Ed program before?

69.6% of the students said yes to the statement, ' Have you used e-learning resources in your B.Ed program before? '

30.4% of the students said no to the statement, ' Have you used e-learning resources in your B.Ed program before? '

Table 2: The chi-square test based on the e-learning resources in B.Ed program.

Category	Observed	Expected #	Expected
Yes	364	261.5	50.000%
No	159	261.5	50.000%

χ^2(1,N=523)=80.354, p = 0.0001. The two-tailed P value is less than 0.0001. According to standard criteria, this difference is deemed highly statistically significant.

The maximum number is 364 for category 'yes'. Therefore, a maximum number of students answered yes to the question ' Have you used e-learning resources in your B.Ed program before? '

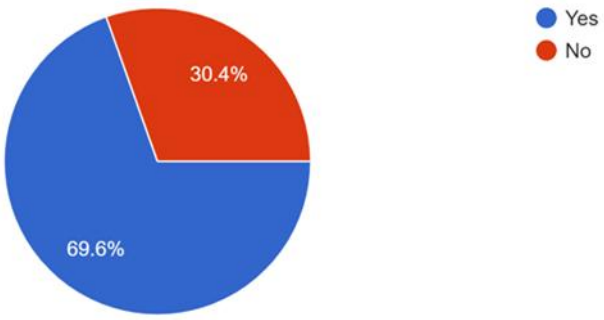

Figure 2: Graphical distribution based on the answer of the Question2.

Question 3:I am comfortable with using technology for learning purposes and it is better than traditional teaching.

34.8% of the students strongly agreed with the statement, 'I am comfortable with using technology for learning purposes and it is better than traditional teaching'.

65.2% of the students agreedwith the statement, 'I am comfortable with using technology for learning purposes and it is better than traditional teaching'.

0% of the students Neither agreed nor disagreed with the statement 'I am comfortable with using technology for learning purposes and it is better than traditional teaching'.

0% of the students disagreed with the statement 'I am comfortable with using technology for learning purposes and it is better than traditional teaching'.

0% of the students Strongly disagreed with the statement 'I am comfortable with using technology for learning purposes and it is better than traditional teaching'.

Table 3: chi square value to the question I am comfortable with using technology for learning purposes and it is better than traditional teaching.

Row #	Category	Observed	Expected #	Expected
1	Strongly Agree	182	104.6	20.000%
2	Agree	341	104.6	20.000%
3	Neither agree	0	104.6	20.000%
4	disagree	0	104.6	20.000%
5	Strongly disagree	0	104.6	20.000%

$\chi^2(4,N=523)=905.346$, $p = 0.0001$. The two-tailed P value is less than 0.0001. According to standard criteria, this difference is deemed highly statistically significant.

The maximum number is 341 for the category 'Agree'. Therefore, a maximum number of students agreed to the statement' I am comfortable with using technology for learning purposes and it is better than traditional teaching'.

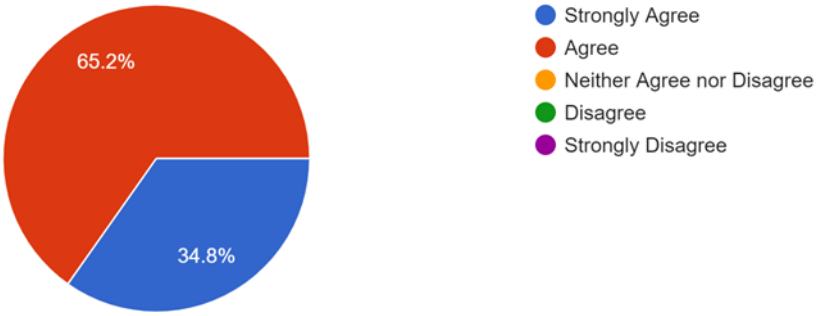

Figure 3: Graphical distribution based on the answer of the question no 3.

Question 4:I prefer 'Video lectures' as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects and it is better than traditional teaching'.

30.5% of the students strongly agreed with the statement, 'I prefer 'Video lectures' as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects and it is better than traditional teaching'.

60.9% of the students agreedwith the statement, 'I prefer 'Video lectures' as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects and it is better than traditional teaching'.

4.3% of the students Neither Agreed nor Disagreedwith the statement, 'I prefer 'Video lectures' as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects and it is better than traditional teaching'.

4.3% of the students disagreedwith the statement, 'I prefer 'Video lectures' as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects and it is better than traditional teaching'.

0% of the students Strongly disagreedwith the statement, 'I prefer 'Video lectures' as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects and it is better than traditional teaching'.

Table 4: chi square value to the statement 'I prefer 'Video lectures' as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects and it is better than traditional teaching'.

Row #	Category	Observed	Expected #	Expected
1	Strongly Agree	160	104.6	20.000%
2	Agree	319	104.6	20.000%
3	Neither agree nor disagree	22	104.6	20.000%
4	disagree	22	104.6	20.000%
5	Strongly disagree	0	104.6	20.000%

$\chi^2(4,N=523)=703.855$, $p = 0.0001$. The two-tailed P value is less than 0.0001. According to standard criteria, this difference is deemed highly statistically significant.

The maximum number is 319 for the category 'Agree'. Therefore, a maximum number of students agreed to the statement 'I prefer 'Video lectures' as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects and it is better than traditional teaching'.

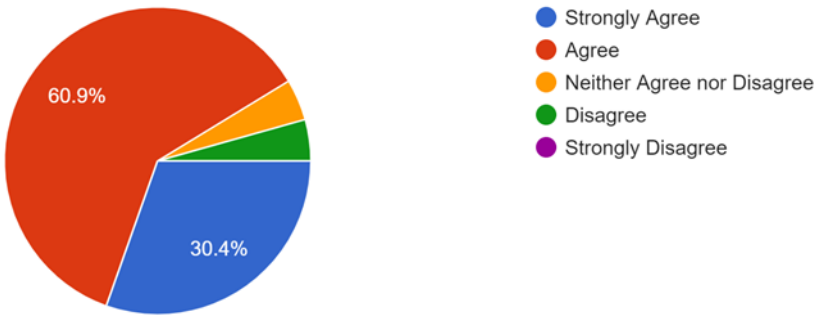

Figure 4: Graphical distribution based on the answer of the question no 4

Question 5:I prefer 'Interactive simulations' as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects' and it is better than traditional teaching.

17.5% of the students strongly agreed with the statement, 'I prefer 'Interactive simulations' as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects' and it is better than traditional teaching.'

73.9% of the students agreedwith the statement, 'I prefer 'Interactive simulations' as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects' and it is better than traditional teaching.'

4.3% of the students Neither Agreed nor Disagreedwith the statement, 'I prefer 'Interactive simulations' as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects' and it is better than traditional teaching.'

4.3% of the students disagreedwith the statement, 'I prefer 'Interactive simulations' as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects' and it is better than traditional teaching.'

0% of the students Strongly disagreedwith the statement, 'I prefer 'Interactive simulations' as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects' and it is better than traditional teaching.'

Table 5: chi-square value to the statement 'I prefer 'Interactive simulations' as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects' and it is better than traditional teaching.'

Row #	Category	Observed	Expected #	Expected
1	Strongly Agree	92	104.6	20.000%
2	Agree	387	104.6	20.000%
3	Neither agree	22	104.6	20.000%
4	disagree	22	104.6	20.000%
5	Strongly disagree	0	104.6	20.000%

χ^2(4,N=523)=998.998, p = 0.0001. The two-tailed P value is less than 0.0001. According to standard criteria, this difference is deemed highly statistically significant.

The maximum number is 387 for the category 'Agree'. Therefore, a maximum number of students agreed to the statement 'I prefer 'Interactive simulations' as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects' and it is better than traditional teaching.'

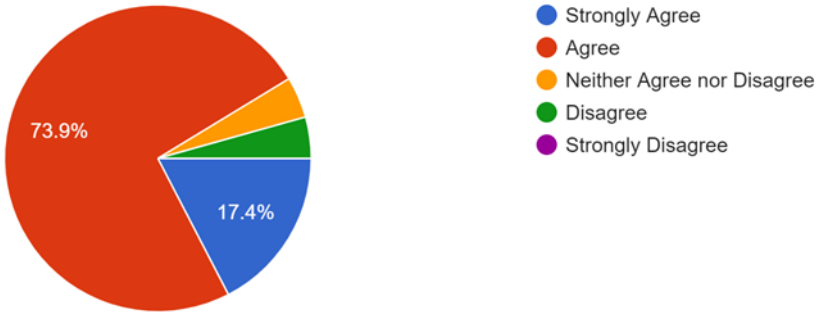

Figure 5: Graphical distribution based on the answer of the question no 5.

Question6:I prefer 'Online discussion forums' as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects' and it is better than traditional teaching.

4.3% of the students strongly agreed with the statement, 'I prefer 'Online discussion forums' as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects and it is better than traditional teaching'.

69.6% of the students agreedwith the statement, 'I prefer 'Online discussion forums' as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects and it is better than traditional teaching'.

21.7% of the students Neither Agreed nor Disagreedwith the statement, 'I prefer 'Online discussion forums'as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects and it is better than traditional teaching'.

4.3% of the students disagreedwith the statement, 'I prefer 'Online discussion forums' as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects and it is better than traditional teaching'.

0% of the students Strongly disagreedwith the statement, 'I prefer 'Online discussion forums' as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects and it is better than traditional teaching'.

Table 6: chi-square value to the statement 'I prefer 'Online discussion forums' as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects and it is better than traditional teaching'.

Row #	Category	Observed	Expected #	Expected
1	Strongly Agree	22	104.6	20.000%
2	Agree	365	104.6	20.000%
3	Neither agree	114	104.6	20.000%
4	disagree	22	104.6	20.000%
5	Strongly disagree	0	104.6	20.000%

$\chi^2(4,N=523)=884.161$, $p = 0.0001$. The two-tailed P value is less than 0.0001. According to standard criteria, this difference is deemed highly statistically significant.

The maximum number is 365 for the category 'Agree'. Therefore, a maximum number of students agreed to the statement 'I prefer 'Online discussion forums' as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects and it is better than traditional teaching'

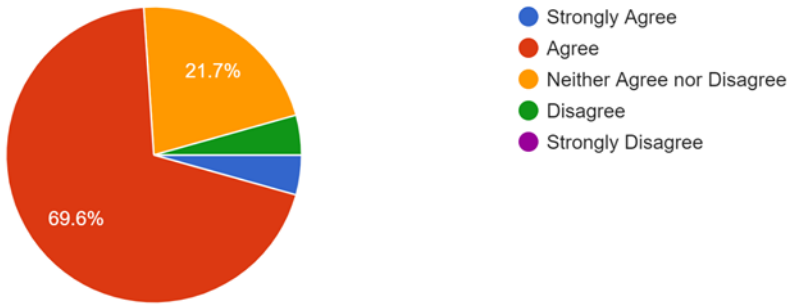

Figure 6: Graphical distribution based on the answer of the question no 6.

Question 7:I prefer 'Quizzes and assessments as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects', and it is better than traditional teaching.

30.4% of the students strongly agreed with the statement, I prefer 'Quizzes and assessments'as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects and it is better than traditional teaching'.

60.9% of the students agreed with the statement, I prefer 'Quizzes and assessments'as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects and it is better than traditional teaching'.

4.3% of the students neither Agreed nor Disagreed with the statement, I prefer 'Quizzes and assessments' as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects and it is better than traditional teaching'.

4.3% of the students disagreed with the statement, 'I prefer 'Quizzes and assessments' as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects and it is better than traditional teaching'.

0% of the students strongly disagreed with the statement, 'I prefer 'Quizzes and assessments' as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects and it is better than traditional teaching'.

Table 7: chi-square value to the statement, 'I prefer 'Quizzes and assessments' as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects and it is better than traditional teaching'.

Row #	Category	Observed	Expected #	Expected
1	Strongly Agree	160	104.6	20.000%
2	Agree	319	104.6	20.000%
3	Neither agree	22	104.6	20.000%
4	disagree	22	104.6	20.000%
5	Strongly disagree	0	104.6	20.000%

$\chi^2(4,N=523)=703.855$, p = 0.0001. The two-tailed P value is less than 0.0001. According to standard criteria, this difference is deemed highly statistically significant.

The maximum number is 319 for the category 'Agree'. Therefore, a maximum number of students agreed to the statement 'I prefer 'Quizzes and assessments' as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects and it is better than traditional teaching'.

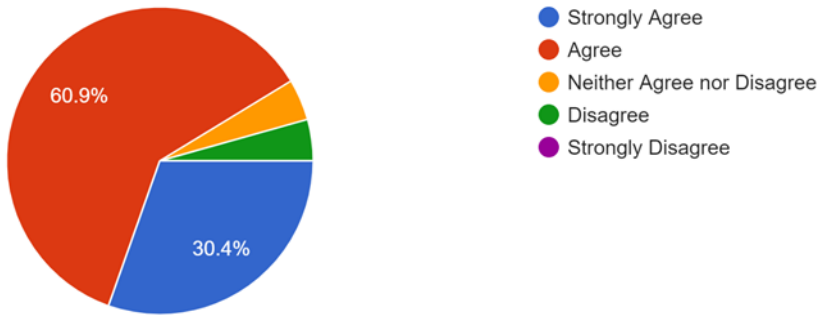

Figure 7: Graphical distribution based on the answer of the question no 7.

Question8:I prefer 'E-books or digital textbooks as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects' and it is better than traditional teaching.

17.4% of the students strongly agreed with the statement, 'I prefer 'E-books or digital textbooks'as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects and it is better than traditional teaching'.

69.6% of the students agreedwith the statement, I prefer 'E-books or digital textbooks'as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects and it is better than traditional teaching'.

8.7% of the students neither Agreed nor Disagreedwith the statement'E-books or digital textbooks' as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects and it is better than traditional teaching'.

4.3% of the students disagreedwith the statement, I prefer 'E-books or digital textbooks'as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects and it is better than traditional teaching'.

0% of the students strongly disagreedwith the statement,'I prefer 'E-books or digital textbooks' as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects and it is better than traditional teaching'.

Table 8: chi-square value to the statement,'I prefer 'E-books or digital textbooks' as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects and it is better than traditional teaching'.

Row #	Category	Observed	Expected #	Expected
1	Strongly Agree	91	104.6	20.000%
2	Agree	364	104.6	20.000%
3	Neither agree	46	104.6	20.000%
4	disagree	22	104.6	20.000%
5	Strongly disagree	0	104.6	20.000%

$\chi^2(4,N=523)=847.717$, $p = 0.0001$. The two-tailed P value is less than 0.0001. According to standard criteria, this difference is deemed highly statistically significant.

The maximum number is 364 for the category 'Agree'. Therefore, a maximum number of students agreed to the statement 'I prefer 'E-books or digital textbooks' as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects and it is better than traditional teaching'.

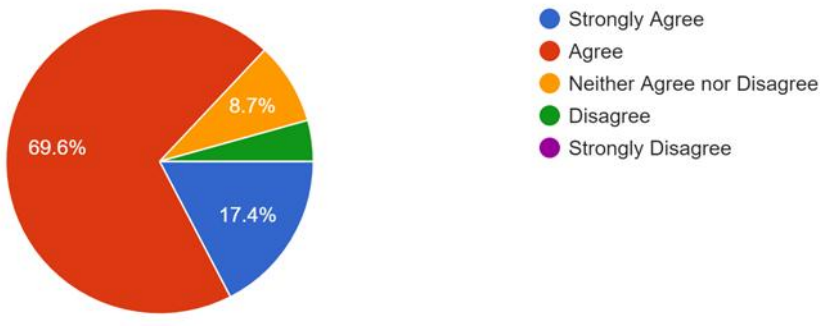

Figure 8: Graphical distribution based on the answer of the question no 8.

Question9:I prefer 'Live virtual classes' as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects' and it is better than traditional teaching.

13% of the students strongly agreed with the statement, 'I prefer 'Live virtual classes' as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects and it is better than traditional teaching'.

69.6% of the students agreedwith the statement, 'I prefer 'Live virtual classes' as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects and it is better than traditional teaching'.

8.7% of the students Neither Agreed nor Disagreedwith the statement, 'I prefer 'Live virtual classes'as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects and it is better than traditional teaching'.

8.7% of the students disagreedwith the statement, 'I prefer 'Live virtual classes' as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects and it is better than traditional teaching'.

0% of the students strongly disagreedwith the statement, 'I prefer 'Live virtual classes' as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects and it is better than traditional teaching'.

Table 9: chi-square value to the statement,, 'I prefer 'Live virtual classes' as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects and it is better than traditional teaching'.

Row #	Category	Observed	Expected #	Expected
1	Strongly Agree	67	104.6	20.000%
2	Agree	364	104.6	20.000%
3	Neither agree	46	104.6	20.000%
4	disagree	46	104.6	20.000%
5	Strongly disagree	0	104.6	20.000%

$\chi^2(4,N=523)=827.067$, $p = 0.0001$. The two-tailed P value is less than 0.0001. According to standard criteria, this difference is deemed highly statistically significant.

The maximum number is 364 for the category 'Agree'. Therefore, a maximum number of students agreed to the statement, 'I prefer 'Live virtual classes' as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects and it is better than traditional teaching'.

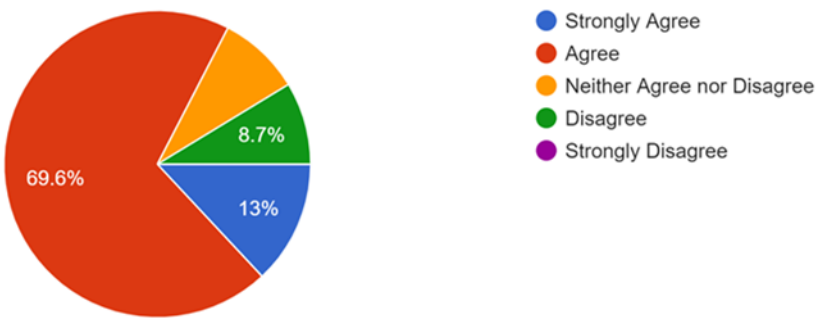

Figure 9: **Graphical distribution based on the answer of the question no 9.**

Question 12:I prefer 'Case studies and real-life examples' as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects' and it is better than traditional teaching.

21.7% of the students strongly agreed with the statement, 'I prefer 'Case studies and real-life examples' as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects and it is better than traditional teaching'.

52.2% of the students agreedwith the statement, 'I prefer 'Case studies and real-life examples' as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects and it is better than traditional teaching'.

17.4% of the students Neither Agreed nor Disagreedwith the statement, 'I prefer 'Case studies and real-life examples'as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects and it is better than traditional teaching'.

8.7% of the students disagreedwith the statement, 'I prefer 'Case studies and real-life examples' as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects and it is better than traditional teaching'.

0% of the students strongly disagreedwith the statement, 'I prefer 'Case studies and real-life examples' as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects and it is better than traditional teaching'.

Table 10: chi-square value to the statement,,'I prefer ' Case studies and real-life examples' as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects and it is better than traditional teaching'

Row #	Category	Observed	Expected #	Expected
1	Strongly Agree	113	104.6	20.000%
2	Agree	273	104.6	20.000%
3	Neither agree	91	104.6	20.000%
4	disagree	46	104.6	20.000%
5	Strongly disagree	0	104.6	20.000%

$\chi^2(4,N=523)=410.987$, p = 0.0001. The two-tailed P value is less than 0.0001. According to standard criteria, this difference is deemed highly statistically significant.

The maximum number is 273 for the category 'Agree'. Therefore, a maximum number of students agreed to the statement, 'I prefer 'Case studies and real-life examples' as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects and it is better than traditional teaching'.

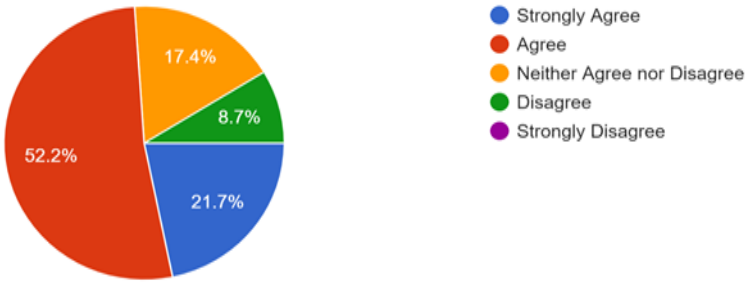

Figure 10: Graphical distribution based on the answer of the question no 10.

Question 11:I prefer 'Live virtual classes with guest speakers' as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects' and it is better than traditional teaching.

4.3% of the students strongly agreed with the statement, 'I prefer 'Live virtual classes with guest speakers' as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects and it is better than traditional teaching'.

87% of the students agreedwith the statement, 'I prefer 'Live virtual classes with guest speakers'as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects and it is better than traditional teaching'.

4.3% of the students Neither Agreed nor Disagreedwith the statement, 'I prefer 'Live virtual classes with guest speakers' as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects and it is better than traditional teaching'.

4.3% of the students disagreedwith the statement, 'I prefer 'Live virtual classes with guest speakers'as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects and it is better than traditional teaching'.

0% of the students strongly disagreedwith the statement, 'I prefer 'Live virtual classes with guest speakers'as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects and it is better than traditional teaching'.

Table 11: chi-square value to the statement,, 'I prefer 'Live virtual classes with guest speakers' as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects and it is better than traditional teaching'.

Row #	Category	Observed	Expected #	Expected
1	Strongly Agree	22	104.6	20.000%
2	Agree	457	104.6	20.000%
3	Neither agree	22	104.6	20.000%
4	disagree	22	104.6	20.000%
5	Strongly disagree	0	104.6	20.000%

$\chi^2(4,N=523)=1487.526$, $p = 0.0001$. The two-tailed P value is less than 0.0001. According to standard criteria, this difference is deemed highly statistically significant.

The maximum number is 457 for the category 'Agree'. Therefore, a maximum number of students agreed to the statement, 'I prefer 'Live virtual classes with guest speakers'as e-learning resources or tools for learning the subject of 'Understanding Disciplines and School Subjects and it is better than traditional teaching'.

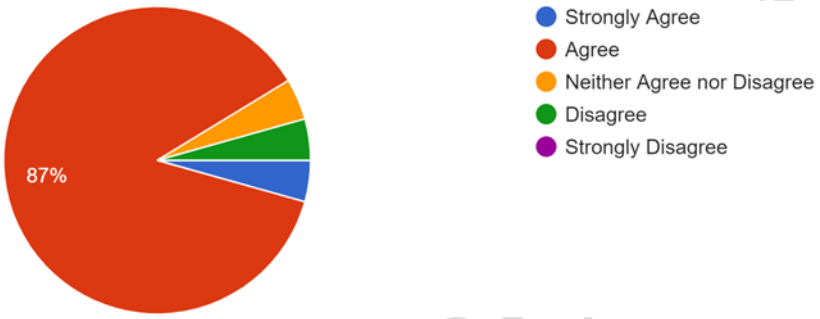

Figure 11: Graphical distribution based on the answer of the question no 11.

Question 12:I prefer a 'Desktop' to access e-learning materials and it is better than traditional teaching.

21.7% of the students strongly agreed with the statement, 'I prefer a 'Desktop' to access e-learning materials and it is better than traditional teaching.'

39.1% of the students agreedwith the statement, 'I prefer a 'Desktop' to access e-learning materials and it is better than traditional teaching.'

21.7% of the students neither agreed nor disagreedwith the statement, 'I prefer a 'Desktop' to access e-learning materials and it is better than traditional teaching.'

17.4% of the students disagreedwith the statement,'I prefer a 'Desktop' to access e-learning materials and it is better than traditional teaching.'

0% of the students strongly disagreedwith the statement, 'I prefer a 'Desktop' to access e-learning materials and it is better than traditional teaching.'

Table 12: chi-square value to the statement,'I prefer a 'Desktop' to access e-learning materials and it is better than traditional teaching.'

Row #	Category	Observed	Expected #	Expected
1	Strongly Agree	113	104.6	20.000%
2	Agree	205	104.6	20.000%
3	Neither agree	114	104.6	20.000%
4	disagree	91	104.6	20.000%
5	Strongly disagree	0	104.6	20.000%

$\chi^2(4,N=523)=204.256$, $p = 0.0001$. The two-tailed P value is less than 0.0001. According to standard criteria, this difference is deemed highly statistically significant.

The maximum number is 205 for the category 'Agree'. Therefore, a maximum number of students agreed to the statement, 'I prefer a 'Desktop' to access e-learning materials and it is better than traditional teaching.'

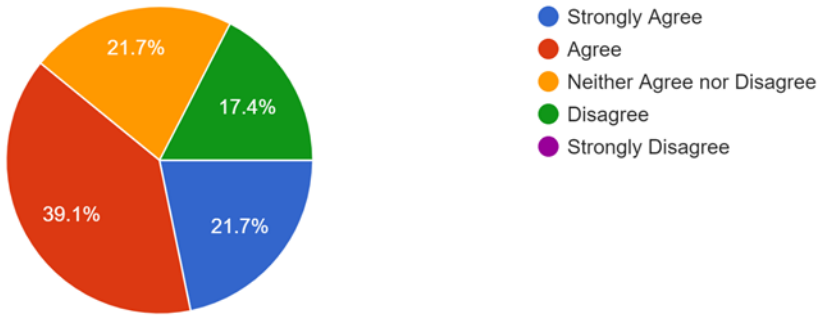

Figure 12: Graphical distribution based on the answer of the question no 13.

Question 13:I prefer a 'Laptop' to access e-learning materials and it is better than traditional teaching.

17.4% of the students strongly agreed with the statement, I prefer a 'Laptop' to access e-learning materials and it is better than traditional teaching.

43.5% of the students agreedwith the statement, I prefer a 'Laptop' to access e-learning materials and it is better than traditional teaching.

13% of the students Neither Agreed nor Disagreedwith the statement, I prefer a 'Laptop' to access e-learning materials and it is better than traditional teaching.

26.1% of the students disagreedwith the statement, I prefer a 'Laptop' to access e-learning materials and it is better than traditional teaching.

0% of the students strongly disagreedwith the statement, I prefer a 'Laptop' to access e-learning materials and it is better than traditional teaching.

Table 13: chi-square value to the statement,I prefer a 'Laptop' to access e-learning materials and it is better than traditional teaching.'

Row #	Category	Observed	Expected #	Expected
1	Strongly Agree	91	104.6	20.000%
2	Agree	228	104.6	20.000%
3	Neither agree	68	104.6	20.000%
4	disagree	136	104.6	20.000%
5	Strongly disagree	0	104.6	20.000%

$\chi^2(4,N=523)=274.180$, p = 0.0001. The two-tailed P value is less than 0.0001. According to standard criteria, this difference is deemed highly statistically significant.

The maximum number is 228 for the category 'Agree'. Therefore, a maximum number of students agreed to the statement, 'I prefer a 'Laptop' to access e-learning materials and it is better than traditional teaching.

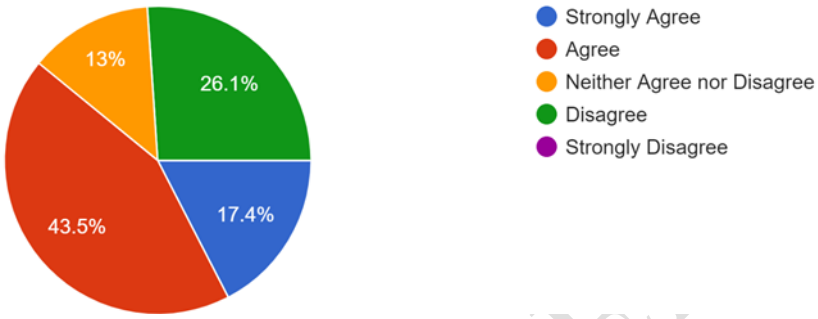

Figure 13: Graphical distribution based on the answer of the question no 14.

Question 14:I prefer a 'Tablet' to access e-learning materials and it is better than traditional teaching.

8.7% of the students strongly agreed with the statement, I prefer a 'Tablet' to access e-learning materials and it is better than traditional teaching.

34.8% of the students agreedwith the statement, I prefer a 'Tablet' to access e-learning materials and it is better than traditional teaching.

34.8% of the students Neither Agreed nor Disagreedwith the statement, I prefer a 'Tablet' to access e-learning materials and it is better than traditional teaching.

21.7% of the students disagreedwith the statement, I prefer a 'Tablet' to access e-learning materials and it is better than traditional teaching.

0% of the students strongly disagreedwith the statement, I prefer a 'Tablet' to access e-learning materials and it is better than traditional teaching.

Table 14: chi-square value to the statement,'I prefer a 'Tablet' to access e-learning materials and it is better than traditional teaching.'

Row #	Category	Observed	Expected #	Expected
1	Strongly Agree	46	104.6	20.000%
2	Agree	182	104.6	20.000%
3	Neither agree nor disagree	182	104.6	20.000%
4	disagree	113	104.6	20.000%
5	Strongly disagree	0	104.6	20.000%

$\chi^2(4,N=523)=252.650$, $p = 0.0001$. The two-tailed P value is less than 0.0001. According to standard criteria, this difference is deemed highly statistically significant.

The maximum number is 182 for the categories'Agree' and 'neither agree nor disagree'. Therefore, a maximum number(there was a tie) of students agreed as well as 'neither agreed nor disagreed'with the statement, 'I prefer a 'Tablet' to access e-learning materials and it is better than traditional teaching.'

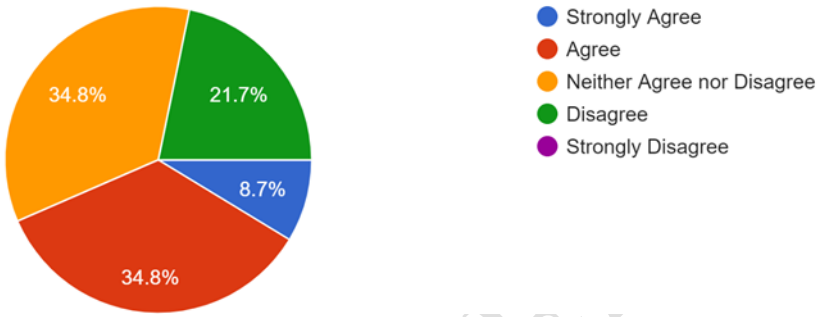

Figure 14: Graphical distribution based on the answer of the question no 14.

Question 15:I prefer a 'Mobile phone' to access e-learning materials and it is better than traditional teaching.

17.4% of the students strongly agreed with the statement, I prefer a 'Mobile phone' to access e-learning materials and it is better than traditional teaching.

73.9% of the students agreedwith the statement, I prefer a 'Mobile phone' to access e-learning materials and it is better than traditional teaching.

8.7% of the students Neither Agreed nor Disagreedwith the statement, I prefer a 'Mobile phone' to access e-learning materials and it is better than traditional teaching.

0% of the students Disagreedwith the statement, I prefer a 'Mobile phone' to access e-learning materials and it is better than traditional teaching.

0% of the students Strongly Disagreedwith the statement, I prefer a 'Mobile phone' to access e-learning materials and it is better than traditional teaching.

Table 15: chi-square value to the statement,'I prefer a 'Mobile phone' to access e-learning materials and it is better than traditional teaching.'

Row #	Category	Observed	Expected #	Expected
1	Strongly Agree	91	104.6	20.000%
2	Agree	386	104.6	20.000%
3	Neither agree nor disagree	46	104.6	20.000%
4	disagree	0	104.6	20.000%
5	Strongly disagree	0	104.6	20.000%

$\chi^2(4,N=523)=1000.834$, $p = 0.0001$. The two-tailed P value is less than 0.0001. According to standard criteria, this difference is deemed highly statistically significant.

The maximum number is 386 for the category'Agree'. Therefore, a maximum number of students agreedwith the statement, 'I prefer a 'Mobile phone' to access e-learning materials and it is better than traditional teaching.'

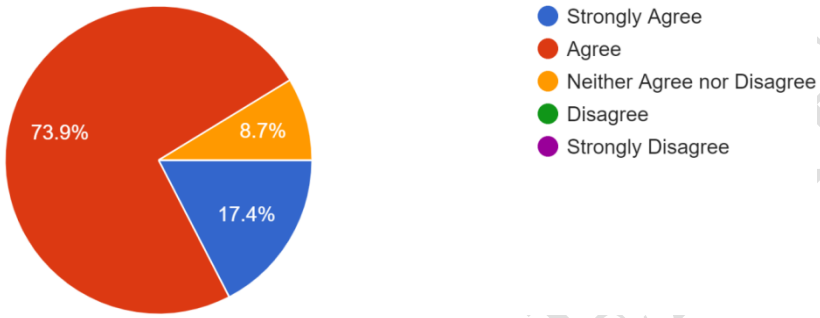

Figure 15: Graphical distribution based on the answer of the question no 15.

Question 16:I prefer the university's learning management system (LMS) using the Mobile apps.

17.4% of the students strongly agreed with the statement, I prefer the university's learning management system (LMS) using the Mobile apps.

73.9% of the students agreedwith the statement, I prefer the university's learning management system (LMS) using the Mobile apps.

0% of the students Neither Agreed nor Disagreedwith the statement, I prefer the university's learning management system (LMS) using the Mobile apps.

8.7% of the students Disagreedwith the statement, I prefer the university's learning management system (LMS) using the Mobile apps.

0% of the students strongly Disagreedwith the statement, I prefer the university's learning management system (LMS) using the Mobile apps.

Table 16: chi-square value to the statement,'I prefer the university's learning management system (LMS) using the Mobile apps.'

Row #	Category	Observed	Expected #	Expected
1	Strongly Agree	91	104.6	20.000%
2	Agree	386	104.6	20.000%
3	Neither agree nor disagree	0	104.6	20.000%
4	disagree	46	104.6	20.000%
5	Strongly disagree	0	104.6	20.000%

$\chi^2(4,N=523)=1000.834$, $p = 0.0001$. The two-tailed P value is less than 0.0001. According to standard criteria, this difference is deemed highly statistically significant.

The maximum number is 386 for the category 'Agree'. Therefore, a maximum number of students agreedwith the statement, 'I prefer the university's learning management system (LMS) using the Mobile apps.'

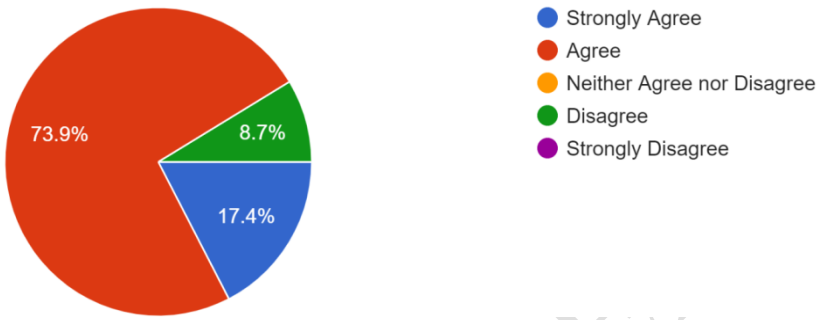

Figure 16: Graphical distribution based on the answer of the question no 17.

Question17:I prefer the university's learning management system (LMS) using the Websites and it is better than traditional teaching.

17.4% of the students strongly agreed with the statement, I prefer the university's learning management system (LMS) using Websites and it is better than traditional teaching.

56.5% of the students agreedwith the statement, I prefer the university's learning management system (LMS) using Websites and it is better than traditional teaching.

13% of the students Neither Agreed nor Disagreedwith the statement, I prefer the university's learning management system (LMS) using Websites and it is better than traditional teaching.

8.7% of the students disagreedwith the statement, I prefer the university's learning management system (LMS) using Websites and it is better than traditional teaching.

4.3% of the students strongly disagreedwith the statement, I prefer the university's learning management system (LMS) using Websites and it is better than traditional teaching.

Table 17: chi-square value to the statement,I prefer the university's learning management system (LMS) using the Websites and it is better than traditional teaching.'

Row #	Category	Observed	Expected #	Expected
1	Strongly Agree	91	104.6	20.000%
2	Agree	296	104.6	20.000%
3	Neither agree nor disagree	68	104.6	20.000%
4	disagree	46	104.6	20.000%
5	Strongly disagree	22	104.6	20.000%

$\chi^2(4,N=523)=462.860$, p = 0.0001. The two-tailed P value is less than 0.0001. According to standard criteria, this difference is deemed highly statistically significant.

The maximum number is 296 for the category 'Agree'. Therefore, a maximum number of students agreedwith the statement, 'I prefer the university's learning management system (LMS) using the Websites and it is better than traditional teaching.'

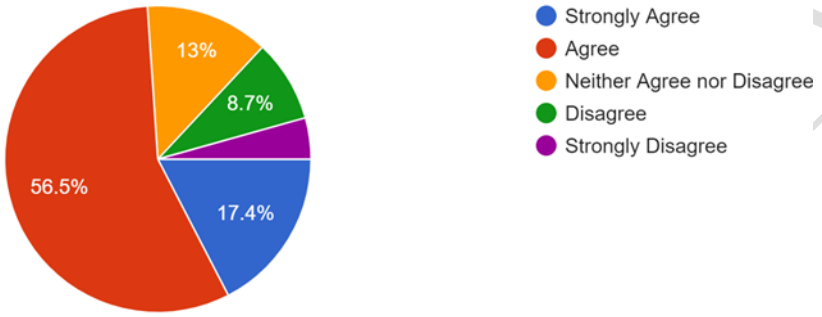

Figure 17: Graphical distribution based on the answer of the question no 17.

10.

11. Findings of the Study

The category 'yes' has a maximum value. Hence, a significant proportion of students responded affirmatively to the inquiry regarding their prior experience with e-learning.

The upper limit is for the 'yes' category. Hence, many students responded affirmatively to the inquiry regarding their prior utilisation of e-learning resources in their B.Ed programme.

The highest value was recorded in the 'Agree' category. Hence, most students agreed with the statement, 'I am comfortable using technology for learning purposes and find it superior to traditional teaching.'

The upper limit for the 'Agree' category. Hence, most students preferred 'Video lectures' as e-learning resources for studying 'Understanding Disciplines and School Subjects' over traditional teaching methods.

The upper limit for the 'Agree' category. Most students preferred 'Interactive simulations' as e-learning resources for learning the subject of 'Understanding Disciplines and School Subjects' over traditional teaching methods.

The upper limit for the 'Agree' category. Most students preferred using online discussion forums as e-learning resources for studying the subject of 'Understanding Disciplines and School Subjects' over traditional teaching methods.

The upper limit for the 'Agree' category. Hence, most students preferred 'Quizzes and assessments as e-learning resources for studying and understanding Disciplines and School Subjects over traditional teaching methods.

The upper limit for the 'Agree' category. Most students preferred using e-books or digital textbooks as e-learning resources for studying the subject of 'Understanding Disciplines and School Subjects' over traditional teaching methods.

The upper limit for the 'Agree' category. Most students preferred 'Live virtual classes' as e-learning resources for studying 'Understanding Disciplines and School Subjects' over traditional teaching methods.

The upper limit for the 'Agree' category. Most students preferred using case studies and real-life examples as e-learning resources for learning the subject of 'Understanding Disciplines and School Subjects' over traditional teaching methods.

The category 'Agree' has a maximum value. Most students preferred 'Live virtual classes with guest speakers' as e-learning resources for learning 'Understanding Disciplines and School Subjects' over traditional teaching methods.

12. Discussion

The study examined perceptions regarding e-learning materials, including content quality, accessibility, usability, and overall satisfaction with the e-learning experience. This study's findings offer valuable insights into the perceptions and experiences of e-learners, informing the development and enhancement of e-learning programmes. The study participants had diverse views on the quality of e-learning materials and content. Accessibility is an essential determinant of e-learners' overall satisfaction. Several participants emphasised the significance of ensuring materials are readily accessible across various devices and platforms. Usability significantly influenced the satisfaction of e-learners. Overall satisfaction: Despite

challenges and diverse opinions on various aspects of e-learning, many participants reported being satisfied with their e-learning experience.

13. Conclusion

In summary, this study has provided insights into the diverse perspectives and experiences related to e-learning. The interrelationship between e-learning materials and content quality, accessibility, usability, and overall satisfaction is significant. E-learning providers must allocate resources towards enhancing content quality, prioritising accessibility, and consistently enhancing usability for optimising the experience.

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