Bachelor Level Students' Perceptions Towards Learning English through Virtual Learning Modes and Their Current Practices

A Thesis Submitted to the Department of English Education
In Partial Fulfillment for the Master of Education in English

Submitted by
Santosh Raj Tharu

Faculty of Education
Tribhuvan University,
Kirtipur, Kathmandu, Nepal
2023

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This is to certify that **Santosh Raj Tharu** has completed his M.Ed. thesis entitled **Bachelor Level Students' Perceptions Towards Learning English through Virtual Learning Modes and Their Current Practices**under my guidance and supervision.

I recommend the thesis for acceptance.

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Dedication

Dedicated

To

My parents for their boundless love, sacrifice and inspiration.

Declaration

I, hereby, declare that to the best of my knowledge this research is original; none of the parts of this was submitted earlier for the candidature of the research degree to any university.

Date: 25/06/2023 ……..

Santosh Raj Tharu

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Santosh Raj Tharu

Abstract

This is a study on**Bachelor Level Students' Perceptions Towards Learning English through Virtual Learning Modes and Their Current Practices**. It aimed toinvestigate the perceptions of Bachelor levelstudentstowards virtual learning modes and their current practices. The research employed a survey design. The data was collected from Bachelor-level students through questionnaires with Likert scales. A sample size of hundred students from Banke district was selected using simple random sampling.The participants were from five different campuses.The data were analyzed and interpreted statistically and descriptively using figures and percentile. The findings show that a good majority of the participants prioritized using Zoom for attending virtual classes. Similarly, a good majority of the participants acknowledged that Zoom offers numerous learning opportunities while learning through it. Similarly, majority of the participants preferred virtual learning modes because of its time saving nature. A good majority of the respondents stated that virtual learning modes are helpful for learning.In the same way, a good majority of the participants experienced difficulties because of lack of access of internet connection. The majority of the participants displayed preference for virtual learning modes during pandemic period. Participants favored specific features offered by virtual learning modes such as video call, chatbox, mute/unmute system and screen sharing. Though, they are effective tool for learning, they posed challenges for the students because of the lack of technical devices and internet connection.

This thesis is divided into five different chapters. The first chapter deals with introduction of the study which includes background of the study, statement of the problem, objectives of the study, research questions, significance of the study, delimitations of the study, operational definitions of the key terms respectively. The second chapter consists of literature review. This chapter includes theoretical and empirical literature review as well as conceptual framework. The third chapter deals with methods and procedures of the study including design of the study, population, sample and sampling strategy, research tools for data collection, sources of data, data collection procedures, data analysis procedures and ethical considerations. Chapter four consists of analysis and interpretation of results. Moreover, chapter fifth consists of findings, conclusions, recommendations and implications. It also includes references and appendices for the validation of the research.

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List of Symbols and Abbreviations

A	: Agree
APA	: American Psychological Association
Apps	: Applications
CAE	: Cambridge Academic English
D	: Disagree
DOI	: Digital Object Identifier
E-curriculum	: Electronic curriculum
E-learning	: Electronic Learning
GIFs	: Graphic Interchange Formats
GoN	: Government of Nepal
ICT	: Information and Communication Technology
M. Ed.	: Master of Education
MS	: Microsoft
N	: Neutral
N.D.	: No Date
%	: Percentage
SA	: Strongly Agree
SD	: Strongly Disagree
T.U.	: Tribhuvan University
TV	: Television
UNESCO	: United Nations Educational, Scientific and Cultural Organization
URL	: Uniform Resource Locator
VL	: Virtual Learning
VLE	: Virtual Learning Environment
VoIP	: Voice Over Internet Protocol

Chapter I

Introduction

The current study entitled **Bachelor Level Students' Perceptions Towards Learning English through Virtual Learning Modes and Their Current Practices** aimed to investigate the perceptions of Bachelor level students towards virtual learning modes and their current practices. This chapter encompasses several important components, including the background of the study, statement of the problem, objectives of the study, research questions, significance of the study, delimitations of the study and operational definitions of the key terms.

Background of the Study

The bachelor level students, also known as undergraduate level students, refers to the educational level of the students achieved after completing a bachelor's degree program. They are the individuals who are enrolled in bachelor's degree program at a college or university. They are at the initial stage of their higher education. A Bachelor's degree is awarded to the students who successfully complete a degree in particular course.

Perception is a fundamental aspect of human cognition. It refers to the process by which individuals make sense of the sensory information. It is subjective and can vary from person to person based on their individual differences. It is taken as a cognitive process which enables us to make sense of the world and construct our understanding.

Learning English refers to the process of acquiring knowledge to read, write, speak and understand the English. It involves developing proficiency in various aspects of English, including vocabulary, grammar, pronunciation, listening comprehension, speaking fluency, reading comprehension and writing skills.

The COVID-19 pandemic has affected on educational systems globally, leading to the closure of numerous educational institutions and temporary closures of libraries. This widespread measure was implemented in response to the rapid and alarming spread of the virus. Consequently, billions of children across many countries have been severely affected to their education. In an effort to mitigate the impact and ensure the continuity of education, innovative technologies have been adopted,

leading to the emergence of online and distance education. The shift to virtual learning has provided an alternative means for students to continue their education amidst the challenges posed by the pandemic. It has enabled educational institutions to bridge the physical gap created by the closure of schools and libraries and ensure that learning can persist despite the prevailing circumstances.

"The emergence of distance education has broken through the traditional teaching model of intensive teaching systems" (Liu, 2015) thereby establishing the existence of virtual learning in the present era. Virtual learning refers to an educational environment where virtual teachers and learners interact through electronic communication tools, eliminating the need for physical presence. Teachers deliver instruction and students engage in learning activities utilizing virtual learning applications such as Zoom, Microsoft Teams, and Google Classroom. This mode of education requires technological devices and internet connectivity to facilitate virtual classes. Virtual learning offers flexibility in terms of time and location, freeing teachers and students from the constraints of physical classrooms.

Virtual learning creates an educational space that transcends the barriers of time and space between teachers and students (Bigné, Badenes, Ruiz & Andreu, 2018), enabling educational activities to take place beyond traditional settings and in the absence of face-to-face interactions (Xenos, 2018). It serves as an alternative to face-to-face learning, particularly in situations where physical presence is not feasible. While some urban schools and colleges have successfully implemented online classes to mitigate the impact of the global pandemic, this transition remains challenging for many rural schools in Nepal (Dawadi, Giri & Simkhada, 2020). The sudden shift from face-to-face learning to e-learning poses significant difficulties. UNESCO (2020) highlights the challenges in achieving Sustainable Development Goal 4, which aims to ensure inclusive and equitable quality education and promote lifelong learning opportunities by 2030. Consequently, various television channels and radio stations have initiated educational programs for students. The Government of Nepal has also launched its first official e-learning portal, functioning as an accessible library for Nepalese students (GoN, 2020). Acharya et al. (n.d.) state that the higher education culture in Nepal is experiencing a notable transformation as it embraces innovative technologies. This shift is influenced by the expanding global e-learning market.

Statement of the Problem

The objectives of the study are to investigate the perceptions of Bachelor level students towards virtual learning modes and their current practices and to suggest some pedagogical implications on the basis of the findings of the study.It is essential to acknowledge that access to the internet and technological devices is necessary to participate in online education. Unfortunately, not all individuals have equal accessibility and affordability to these resources, leading to potential disparities in the learning process between privileged and marginalized students, as well as advantaged and disadvantaged groups.The reliance on internet access and technological devices for online learning creates a challenge in ensuring equitable access to education. Consequently, students from economically disadvantaged backgrounds or remote areas may face obstacles in accessing online learning platforms, leading to further educational inequalities.

Several educational institutions have adopted various virtual learning platforms such as Zoom, Microsoft Teams, Google Meet, GoTo Meeting/Webinar and Skype to facilitate online learning. However, the successful implementation of such virtual learning methods relies on the availability of sufficient and adequate technological devices both within educational institutions and among students' families at home. It is worth noting that the cost of internet services poses a significant challenge for individuals from low-income and even middle-class backgrounds. Despite efforts by telecom operators like Ntc and Ncell to introduce e-learning packages for students, these discounted packages may still be unaffordable for some students (Nepal Telecom, 2020). The high cost of internet connectivity presents a financial burden for many families.

Moreover, there are remote areas that lack access to the internet or reliable internet connections. Although Ntc, Ncell, and Smart Cell provide 4G services in various cities, most rural areas are still awaiting the availability of high-speed 3G, 4G and other broadband services. This lack of connectivity infrastructure further impedes equal access to online learning opportunities.Similarly, it requires technical knowledge and skills to run, hold, adjust and sustain such kinds of ICT devices but most of the teachers are unfamiliar with them (Dawadi, Giri & Simkhada, 2020). Furthermore, the infrastructure for virtual learning encompasses various aspects

(ibid.), such as appropriate buildings and rooms, reliable electricity and power backup which are necessary to facilitate seamless virtual classes.

However, despite the numerous educational opportunities offered by information and communication technologies (ICTs), Nepalese students are unable to fully benefit from them due to limited accessibility, adaptability, affordability, accountability and compatibility of digital devices and internet services. These challenges particularly affect financially and technologically disadvantaged and marginalized students and their families. They help to narrow the educational gap between rural and urban schools, as well as between private and public institutions and reached and unreached individuals.

As a researcher, I encountered numerous challenges while engaging in virtual learning through online platforms. Particularly, I faced difficulties during seminar sessions conducted via Zoom. The successful participation in virtual classes requires access to digital devices with reliable internet connectivity as well as a range of technical skills. To ensure the smooth operation of virtual classes, individuals need to possess certain technical competencies such as understanding the mute/unmute system and screen sharing capabilities.Additionally, I observed that some teachers were unfamiliar with virtual learning and lacked knowledge regarding the effective utilization of virtual learning platforms for educational purposes. Personally, I found it challenging to navigate certain functionalities such as screen sharing, muting and unmuting, posting questions in the chat box and utilizing hand-raising features for inquiries. Moreover, the learning experience was further hindered by poor internet connectivity, leading to inaudible audio and low-quality visuals.

Objectives of the Study

The objectives of this research were:

i. To investigate the perceptions of Bachelor level students regarding the use of virtual learning modes in learning English.
ii. To explore the current practices of virtual learning modes among Bachelor level students.
iii. To provide pedagogical implications based on the findings of the study.

Research Questions

The research questions of the study were:

i. What kind of perceptions do the students have while learning through the virtual learning modes?
ii. Which virtual learning modedoes offer many opportunities for better learning?
iii. What are the current practices of available virtual learning modes?

Significance of the Study

This study entitled **Bachelor Level Students' Perceptions Towards Learning English through Virtual Learning Modes and Their Current Practices** aims to investigate and understand the specific perceptions of Bachelor-level students regarding the use of virtual learning modes in English language learning. By exploring students' perspectives, this research provides valuable insights the effectiveness, benefits, challenges and current usage practices of virtual learning modes in the context of English language education at the Bachelor level. By examining their perspectives, this study provides valuable insights into the suitability and effectiveness of virtual learning modes in the context of Nepal. The findings shed light on whether virtual learning should be incorporated into the educational system or not.

Furthermore, the findings of this study willhave practical implications for educators. By understanding the perceptions of Bachelor-level students, educators are able to make informed decisions regarding the selection and implementation of suitable virtual learning modes in the teaching and learning processes. The insights gained from this study will guide educators in choosing the most appropriate virtual learning tools that align with the needs and preferences of the students.

This study will help to educators, policymakers, curriculum designers and teachers in developing curriculum, particularly e-curriculum, for the effective implementation of virtual education programs. The findings of this study will inform the inclusion of e-learning components within the National Curriculum Draft, aiming to create an enabling environment for students to engage in virtual learning.

Moreover, this studyhas great benefit toteachers and School Management Committees, as it emphasizes the importance of four key aspects: accountability, affordability, adaptability and accessibility while conducting virtual learning. By

considering these factors, teachers and School Management Committees can ensure that virtual learning is implemented in a manner that is accountable to students' educational needs, financially feasible, adaptable to diverse learning contexts and accessible to all students.

Delimitations the Study

The study had the following delimitations:

i. The study was limited to a survey design, employing closed and open-ended questionnaires, as well as a Likert scale to analyze the perception of virtual learning apps.
ii. The study was confined to students enrolled at the Bachelors level in campuses located in Nepalgunj, Banke.
iii. A sample size of one hundred students was selected for this study.
iv. The study specifically targeted students who had prior experiences with virtual learning apps.
v. The reliability of the study was limited to the honesty of the participants in providing accurate responses to the research instruments.

Operational Definitions of the Key Terms

The following definitions are provided to ensure understanding of these terms consistently throughout the study:

COVID-19:COVID-19 is an infectious disease caused by novel coronavirus whichwasrecently identified.

Perception: Perception refers to the attitudes and beliefs of students regarding their understanding and interpretation of a particular subject or phenomenon.

Students: Students, here means Bachelor level of students studying in Nepalgunj, Banke.

Virtual: Here, virtual refers to the simulated representation of an experience or environment through online platforms using computer or mobile devices.

Learning: Learning refers to acquiring knowledge and skills through virtual learning modes.

Modes: Here, modes refer to the virtual learning applications, namely Zoom, Microsoft Teams, Google Meet, GoTo Meeting/Webinar and Skype which are utilized for virtual classes.

Practices: Here, practices refer to a way of doing particular things.

Chapter II

Review ofRelated Literature and Conceptual Framework.

This chapter encompasses major components including a thorough review of theoretical and empirical literature, implications drawn from the literature review and a conceptual framework. Each of these elements contributes to establishing a comprehensive understanding of existing knowledge and theoretical foundations relevant to the research topic.

Review of Related Theoretical Literature

This sub-chapter critically examines and reviews the theoretical perspectives. I have explored, developed and expanded theoretical knowledge related to the research topic and study to make the study successful. of virtual learning modes, encompassing its diverse forms, features and significance. It also explores the different forms and features of virtual learning modes. Furthermore, the review emphasizes the importance of virtual learning modes in education.

Virtual Learning Modes."Virtual education is the educational environment and virtual space in which virtual teachers (subjects) and virtual learners (objects) of educational process interact by electronic communications tools" (Nurassyl, n.d.). Virtual learning modes play a pivotal role in enhancing learners' interaction within the classroom. The utilization of virtual classrooms serves as a fundamental tool for blended learning, as it effectively overcomes the limitations of time and space between teachers and students (Bigné, Badenes, Ruiz & Andreu, 2018). Consequently, it facilitates online distance learning, where educational activities are conducted remotely.

Virtual learning modes provide an opportunity to transcend traditional educational settings, enabling the conduction of virtual classes in the absence of physical face-to-face classrooms. According to Xenos (2018), virtual classrooms provide educators with a means to recreate long-standing pedagogical practices that have been utilized for centuries. This allows them to teach in a way that closely resembles traditional classroom instruction.

Types of E-Learning. Buzzetto-More (2008) argues that learning is facilitated by electronic technology which is known as e-learning. Electronic technology is

divided into fully online, mixed-mode or web-assisted. Negash & Wilcox (2008) suggest that there are six types of E-learning. They are presented below:
E-learning with Physical Presence and without E-communication (face-to-face)
E-learning without Presence and without E-communication (self-learning)
E-learning without Presence and with E-communication (asynchronous)
E-learning with virtual Presence and with E-communication (synchronous)
E-learning with occasional Presence and with E-communication (blended/hybrid-asynchronous)
E-learning with Presence and with E-communication (blended/hybrid-synchronous)

Among the various forms of online learning, E-learning that incorporates virtual presence and E-communication holds paramount significance in distance education. This mode of learning provides learners with experiences that are similar to those encountered in face-to-face instruction. While self-directed learning allows individuals to proceed at their own pace, virtual learning ensures that learners benefit from substantial interaction and receive valuable feedback from both peers and instructors.

Types of Virtual Learning Modes. Goodwin (2013) asserts that the availability of apps in app stores surpasses the binary classification of being either ‘paid’ or ‘free’. In consideration of their pedagogical dimensions, researchers have undertaken efforts to categorize apps developed for children into distinct categories based on factors such as their open-ended or close-ended nature, as well as the level of activity they promote among users.

Forms of Virtual Learning Modes. There are many kinds of virtual learning modes which can be described as follows:

Zoom.According to Guzacheva (2020), Zoom has emerged as the leading platform for modern enterprise video communications. It offers a user-friendly and dependable cloud-based solution for video and audio conferencing, collaboration, chat and webinars across various devices such as mobile devices, desktops, telephones and room systems. It provides a valuable opportunity for students to engage in rich interactions, enabling the exploration and assessment of the four skills. Through features like chat boxes and audio capabilities, students can actively communicate with both their peers and teachers. They have the ability to observe and listen to everyone in the virtual environment. Additionally, the breakout rooms feature facilitates group activities, allowing learners to collaborate in pairs or larger groups.

Furthermore, it is capable of functioning smoothly even with limited bandwidth, enabling teachers to instruct students from great distances.

In addition, Zoom provides the feature of screen sharing, allowing educators to share engaging materials with their students. Another valuable feature of Zoom is the ability to record lessons, enabling teachers to review them later and assess students' strengths and weaknesses. Likewise, learners can also benefit from this recording feature by self-assessing their skills and using the recorded lessons for further learning purposes. This functionality enhances the flexibility and effectiveness of the learning process in a virtual environment.

***Macromedia Breeze Meeting*.** According to Bower (2014), the Macromedia Breeze Meeting platform offers a comprehensive set of tools, making it a powerful resource for online collaboration. These tools include various features that enhance the functionality of the platform for effective online communication and collaboration. These features include general presentation delivery, screen sharing, webcam integration, Voice over Internet Protocol (VoIP) for audio communication, text chat functionality, interactive drawing and annotation through a whiteboard, file upload and download capabilities, polling for gathering participant feedback, attendee list management, a web launcher for easy access to web content and a notepad feature for taking notes during meetings. These diverse features provide users with a wide range of options to enhance the versatility and effectiveness of their online communication and collaboration.

Google Classroom.Google Classroom is an internet-based service offered by Google, designed to assist teachers in creating and distributing assignments to students in a digital format, eliminating the need for paper-based tasks (Alim, 2019). To access this service, users are required to have a Google account. Google Classroom serves as a platform for facilitating virtual interactions between teachers/professors and their students, allowing for seamless communication and collaboration in the online learning environment (Liu & Chuang, 2016). Additionally, educators can create online discussion spaces for students within Google Classroom.

Google Classroom is accessible through various platforms, including computers and mobile phones. It is one of the features offered by Google Apps for Education (GAFE), specifically designed for educational purposes. The platform enables teachers to distribute assignments, collect submissions and provide assessment feedback. The Google Classroom app is a valuable tool for online

teaching and learning and it is available free of charge.Utilizing Google Classroom offers several advantages, such as quick and convenient setup, time-saving benefits, enhanced cooperation and communication among students and teachers, centralized data storage and efficient sharing of educational resources. These advantages contribute to an effective and efficient online teaching and learning experience for both educators and students.

Microsoft Teams.According to Buchal and Songsore (2019), Microsoft (MS) Teams is a mobile application available for iOS and Android devices, as well as a browser and desktop application for Windows and Mac computers. MS Teams provides a range of features that allow teachers and students to engage in various activities such as initiating conversations, selecting teams and channels, conducting impromptu meetings, making video and audio calls, mentioning individuals, replying to posts, adding emojis, memes or GIFs (Graphic Interchange Format), staying organized, sharing files and collaborating on them (Microsoft Teams, 2021). MS Teams is included in the educational license of Office 365, which is widely available in many universities.Furthermore, it offers opportunities for collaborative tasks, self-assessment of collaborative abilities and comfort with giving, receiving and sharing comments and feedback among users. Users find it convenient to provide and receive feedback and readily share their contributions within the platform.

Features of Virtual Learning Modes. Virtual learning has its features. According to Xenos (2018), virtual learning modes encompass several distinct features. These features can be summarized as follows:

Video and sound.According to Xenos (2018), video and audio features in virtual learning apps play a significant role in fostering a sense of community and enhancing student engagement. The author argues that by utilizing video and audio capabilities, learners can introduce themselves using visual and auditory elements, which helps create a more personal and connected learning environment.

Video functionality enables students to see and be seen by their peers and instructors, promoting a stronger sense of community and social presence within the virtual classroom. By visually observing one another, students can establish visual connections and develop a greater sense of familiarity, which contributes to a more engaging and interactive learning experience.Xenos further emphasizes the importance of all students having their video turned on during online sessions. This requirement ensures that students actively participate and contribute to the sense of

community within the virtual learning environment. When all students have their video on, it enhances the visual communication and non-verbal cues, leading to better understanding and effective interaction.

Chat. According to Xenos (2018), the chat feature in virtual learning apps serves as a useful tool to address sound problems that may arise during the teaching-learning process. This feature proves particularly helpful in overcoming sound issues caused by network or connection difficulties. Students can utilize the chatbox to communicate their concerns or issues related to sound, enabling them to seek assistance and find solutions.

The chat feature also facilitates direct communication between students and professors. Students can use it to ask questions for clarification, seek further explanation or provide feedback on the content being discussed. It allows for real-time interaction and engagement, enabling students to actively participate in the learning process.Furthermore, teachers can utilize the chat feature to assess students' comprehension and gather their responses. By monitoring the chat messages, instructors can assess whether students comprehend the material or require additional clarification. This immediate feedback loop helps instructors adjust their teaching approach and address any misconceptions or difficulties that students may be experiencing.

The students' feedback. According to Xenos (2018), virtual learning apps allow teachers to monitor students' participation effectively. Teachers can prompt each student to provide a response to simple questions such as "Is everything OK so far?" or "Can everyone hear me?" The expectation is for students to offer brief feedback using simple replies of "yes" or "no".This approach enables the teacher to quickly assess whether students are following the lesson and if there are any issues with audio or other aspects of the virtual learning environment. By requesting concise feedback from each student, the teacher can ensure that everyone is actively engaged and that any potential problems or difficulties are promptly addressed.

The whiteboard. According to Xenos (2018), it is recommended that teachers make use of whiteboards in virtual learning environments to enhance student engagement. By incorporating whiteboard features, students can actively participate in learning tasks by writing on the whiteboard or highlighting specific areas they wish to discuss further.The inclusion of whiteboard functionality provides a visual and interactive element to the virtual classroom, allowing students to actively contribute

and collaborate. It allows for dynamic discussions and encourages students to share their thoughts, ideas and insights directly on the virtual whiteboard. By utilizing whiteboards, teachers can create an interactive and engaging learning experience that promotes active participation and student-centered learning. It provides a platform for students to express their understanding, contribute to discussions and actively engage with the content being presented.

Slide presentations.According to Xenos (2018), a virtual classroom that relies solely on slide presentations can resemble a webcast where information is primarily delivered through pre-prepared slides. In such cases, teachers are encouraged to utilize various interactive features to engage students in discussions and promote active learning.

To enhance student engagement, teachers can employ tools such as a virtual laser pointer, allowing them to draw attention to specific areas of the slides. Additionally, teachers can add comments, ask students to point or highlight relevant content and employ any available means to actively involve students in the discussion.By incorporating these interactive elements, teachers can create a more engaging learning experience, encouraging students to actively participate and interact with the content being presented. Utilizing features like virtual laser pointers and interactive annotations helps to focus students' attention, promote discussion and deepen their understanding of the material.

Discussion administration.According to Xenos (2018), it is important for teachers to address the needs of shy students in virtual classrooms. Shy students may hesitate to actively participate or express their thoughts, often hesitating to raise their hand to contribute to the discussion. However, teachers should ensure that these students do not feel left out and find ways to engage them effectively.

To promote participation and engagement, teachers should take an active role in controlling the virtual classroom audience. This includes monitoring raised hands or any other indicators of students' desire to speak or contribute to the discussion. By actively observing and managing student participation, teachers can ensure that everyone gets a turn to speak and share their thoughts.Teachers should create a supportive and inclusive environment where all students feel encouraged to participate. By giving shy students opportunities to contribute, even if they initially cancel their raised hand, teachers can help them overcome their hesitation and gradually become more comfortable engaging in discussions.

Recording and viewing the virtual classroom sessions.Virtual learning apps offer a valuable feature of recording and reviewing teaching and learning sessions, as emphasized by Xenos (2018). This functionality allows students to revisit previous sessions and connect them to their assignments and tasks, facilitating a more comprehensive understanding of the material.The ability to review recorded sessions serves as a beneficial educational practice, enabling students to reinforce their learning and deepen their understanding of the subject matter. By accessing recorded sessions in the future, students can engage in effective review practices, enhancing their retention and comprehension of the content.

***Breakout rooms*.** Xenos (2018) states breakout room is very powerful for engaging students. The moderators start Breakout rooms during a video call on a computer. Moderators divide the participants into smaller groups during video calls by using breakout rooms. “The best practice is to engage students using breakout rooms are quite frequently during a virtual classroom session (at least once in every session) and to have students report back to the main room their discussion” (p.948). This feature is useful for varieties of team-working practices.

Anonymous polling.For Xenos (2018), anonymous polling is useful to teachers for engaging students and checking students' understanding levels. After doing this, the teacher could know whether he/she needs to “repeat a part of the session or to start a discussion” (p.948). The professor thinks that everything was understood by the students if“one student will reply correctly to these questions”(p.948).

***Shared whiteboard*.** According to Xenos (2018) virtual learning apps provide students with the opportunity to actively engage in activities involving the design of charts and graphs. In such tasks, a small group of students can collaborate and work together on a shared whiteboard within the virtual classroom environment.One notable feature offered by certain virtual classroom environments is the ability to share the results of each group's whiteboard activity back to the main room (ibid.). This feature allows for effective collaboration and knowledge sharing among students, as their contributions and creations can be shared with the larger class.

Shared documents and annotating.According to Xenos (2018), virtual learning apps offer the capability for teachers to collaborate with their students on shared documents. This collaborative feature enables students to actively participate in exercises such as reviewing code and providing annotations.In order to facilitate

collaborative exercises with larger audiences, teachers can utilize breakout rooms within the virtual learning app. Breakout rooms allow for smaller groups of students to work together on specific tasks or discussions, providing a more interactive and engaging learning experience. This functionality promotes student engagement, encourages peer collaboration and allows for meaningful interactions between the teacher and students.

Strengths of Virtual Learning Modes. Virtual learning apps create a motivating learning environment by fostering fruitful dialogues among students and between students and teachers. These dialogues facilitate deeper connections and provide a greater authenticity to spoken and written language. Additionally, virtual classrooms offer access to a wide range of information sources, allowing for the presentation and sharing of larger quantities of information compared to face-to-face classrooms. In traditional classrooms, the number of articles that can be projected or distributed at once is limited.

In a virtual classroom, the screen-sharing feature is available at all times, enhancing the learning experience by allowing for seamless sharing of educational resources. Furthermore, virtual learning offers benefits such as environmental mobility, interactivity, the ability to bridge geographical distances and the existence of a wealth of information resources. These factors contribute to the overall significance of virtual learning in the educational context.The authors Vaselina & Snejana (2020) assert that online learning brings numerous benefits, which are endorsed by many students who have to balance work and study commitments. One such advantage is the flexibility it offers in terms of study sessions, allowing students to progress at their own pace. This flexibility also saves time that would have otherwise been spent on commuting. Students can utilize this saved time for studying or engaging in other activities at home. Additionally, online learning eliminates transportation costs, particularly for students residing in distant locations.

Furthermore, online learning provides opportunities for students to develop self-motivation and self-discipline skills, as highlighted by Ocak (2020). It enables teachers to explore a variety of teaching methods, similar to face-to-face learning, as noted by Cambridge Academic English (CAE, 2020). CAE also emphasizes that virtual learning offers an abundance of content, interaction, reinforcement and real-time feedback.Moreover, Selvaraj, Vishnu, KA, Benson & Mathew (2021) point out that there is a level of comfort associated with teaching and learning from home.

Online classes offer flexibility and convenience to learners and universities often provide well-structured content, including recorded videos, uploaded on their websites, as highlighted by Muthuprasad, Aiswarya, Aditya&Jha (2021).

Schlusmans, Giesbertz, Rusman& Spoelstra (2009) contend that virtual learning platforms enable communication between students and tutors through various tools such as voice, video, chat and whiteboard functionalities. Additionally, these platforms offer additional features including application sharing, polling, breakout sessions and quizzes, replicating the functionalities available in a physical classroom. Virtual classrooms facilitate real-time interaction, allowing students to ask questions, collaborate on the whiteboard and engage in breakout sessions. Furthermore, recorded classroom sessions can be accessed by students at a later time. The use of virtual apps for learning reduces travel time, resulting in time savings for students. While virtual classrooms are efficient, it is important to note that they may not be more effective than face-to-face teaching. This highlights the need for further exploration and assessment of the comparative effectiveness of virtual and traditional teaching methods.

Xenos (2018) asserts that virtual learning apps offer a range of features including real-time voice and video capabilities, whiteboard functionality, slide presentations, text-based interaction and avenues for learners' feedback. While there may be occasional sound and video issues arising from network and equipment limitations, the primary objective of virtual learning is to provide experiences that are akin to face-to-face learning. Virtual classrooms are particularly valuable for distance learning and blended learning scenarios, serving as a complement to on-campus courses. They facilitate active student participation, foster motivation and contribute to the development of a robust learning community, thereby mitigating feelings of alienation and loneliness. Modern virtual classroom environments offer a diverse array of features that transcend the limitations typically associated with traditional classrooms, enabling more dynamic and interactive learning experiences.

According to Bower (2014), virtual learning apps offer the capability of assigning a host or co-host who can assume control over presenters and participants. This feature enables teachers to facilitate remote control presentations and utilize demonstration resources, thereby fostering more active student engagement. For instance, students can be encouraged to take charge of a programming demonstration and share their ideas with the class. By removing physical barriers, virtual learning

apps ensure that all students have equal access to resources, communication facilities and status in classroom tasks. This feature contributes to a more inclusive and collaborative learning environment.

Virtual classrooms serve as ideal spaces for facilitating “electronic collaborative learning groups” (Fåhræus, Bridgeman, Rugelj, Chamberlain & Fuller, 1999), as they provide a platform for rapid and synchronous exchanges of information, including text, diagrams and files. This enables learners to engage in real-time discussions, share resources and collaborate on tasks, regardless of their physical locations.Moreover, virtual classrooms offer valuable opportunities for educators to conduct pedagogical research and explore the effects of various instructional treatments. By utilizing different learning tasks, verbal cues and interface designs, researchers can investigate the impact of these variables on student engagement, learning outcomes and overall educational effectiveness.The recording feature available in virtual classrooms allows academics to capture and analyze online learning episodes retrospectively. This enables them to review instructional strategies, student interactions and overall classroom dynamics, leading to reflective analysis and informed pedagogical decisions.

According to Park & Baek (2010), virtual worlds built on Web 2.0 technology have the potential to offer valuable opportunities for teaching, learning and training. These virtual environments provide immersive and interactive experiences that enhance communication skills, problem-solving abilities and overall engagement. The rich communication and interaction features within virtual worlds create low-risk environments where learners can practice and develop these skills effectively (as cited in Yang, 2013, p. 436).According to Oz (2013), learning can take place “anywhere and anytime” (p. 1032) through the use of portable devices in both formal and non-formal settings. These devices, such as smartphones and tablets, offer numerous advantages in learning environments. They enhance learners’ motivation, promote interactivity, facilitate collaboration and empower learners by allowing them to have control over what, where, when and how they learn.

Similarly, Rahimia & Mirib (2019) argue that mobile devices are portable and palm-sized, enabling learners to access learning materials and resources at any location and at any time. Mobile learning fosters positive language learning attitudes and motivation, encourages learner autonomy and provides a portable and accessible platform for learning.Furthermore, Deris & Shukor (2019) highlight that mobile

learning is beneficial for facilitating communication and increasing its effectiveness. Mobile devices provide learners with instant access to communication tools, such as messaging apps, email and video conferencing, enabling them to engage in meaningful interactions with instructors and peers.

Weaknesses of Virtual Learning Modes. Vaselina & Snejana (2020) highlight several challenges associated with virtual learning. These include limited feedback and a lack of face-to-face communication, which can lead to social isolation, stress and anxiety among students. The authors also note that students may struggle with task completion due to a lack of motivation and self-discipline, as they may lack external motivation. Moreover, the absence of face-to-face communication hinders efficiency in work. Teachers may have more opportunities to focus on teaching theoretical skills rather than practical ones. Additionally, virtual exams present a higher risk of cheating.

Schlusmans et al. (2009) argue that virtual classrooms should be seen as a complement to face-to-face learning rather than a complete substitute. Both teachers and students express a preference for direct interactions and informal conversations that create an enjoyable learning experience in traditional classrooms. Initially, tutors may feel insecure when navigating the virtual classroom due to technical challenges and they often report feeling exhausted after conducting virtual sessions. Consequently, it is recommended to keep virtual class sessions relatively short to maintain engagement, with a maximum duration of one and a half hours. Prolonged virtual sessions run the risk of becoming monotonous and less effective in promoting active learning.

Dawadi, Simkhada & Giri (2020) highlight the adoption of e-learning platforms by technologically advanced countries to establish distance learning centers. However, this has resulted in a two-tier system of inequalities, creating disparities between students in urban and rural areas, as well as between the rich and poor who struggle to access the internet. Many teachers lack the necessary skills and training for online instruction, leading to limited communication and outreach among students. Students with special educational needs face additional challenges and there are restrictions on teaching methods and limited coverage of curriculum materials. Lack of technological devices, time-consuming processes, schedule conflicts, physical distance and high costs are also cited as disadvantages. Despite these drawbacks, online learning offers flexibility and accessibility for learners. However, there are

further issues such as access to appropriate devices, accommodating time zones, reliable internet access, effective feedback, opportunities for independent learning, and ensuring meaningful screen time and conferencing. (Dawadi, Simkhada & Giri, 2020, p. 2).

Sun & Chen (2016) discuss the challenges of schedule conflicts, physical distance and unaffordable costs in online learning. Despite these drawbacks, online learning offers flexibility and accessibility for learners. However, there are additional disadvantages such as limited access to devices suitable for online learning, the need for time zone-friendly schedules, reliable internet access, sufficient bandwidth (speed), effective feedback mechanisms, opportunities for independent learning, ensuring meaningful screen time and facilitating interactive conferencing. (Sun & Chen, 2016).

Online learning is associated with several disadvantages, as highlighted by various authors. These include challenges in communication, feelings of isolation, lack of motivation, insufficient funds, limited quality and poor accessibility in remote areas (Arora, 2019). Furthermore, issues such as expensive and unreliable internet connections, legibility problems on small screens causing eye strain, small screen sizes, limited battery power, high costs, connectivity problems, distractions and interruptions in the learning environment have been identified (Oz, 2013). Additionally, difficulties in reading and writing on small screens, engaging in non-educational activities, storing large files, managing battery power and encountering unfamiliar or complex vocabulary have been reported (Deris & Shukor, 2019). Participants may struggle with reading small letters, battery power limitations and the storage of large files on mobile devices (Ali & Ghazali, 2016). Furthermore, technical issues and the need for extra effort in conducting online classes have been observed by teachers and students (Selvaraj et al., 2021).

Skills Needed for the Virtual Learning Environment. Teachers should encourage student participation by allowing them to ask questions during lectures and incorporating exercises into the classroom. Additionally, teachers can promote active learning by requesting students to share their screens and explain any difficulties they encounter during the learning process. To address concerns of cheating in virtual exams, video surveillance using platforms like Google Meet, Zoom or other alternative assessment methods can be implemented (Veselina & Snejana, 2020).

According to Bigné, Badenes, Ruiz & Andreu (2018), teachers require three types of skills to effectively manage the Virtual Classroom (VC): technical skills, affective skills and communicative skills. Technical skills involve computer and new technologies literacy while affective skills focus on understanding and managing students' psychology. Communicative skills are essential for establishing verbal and non-verbal relationships with students before, during and after classes. The teacher plays a crucial role in engaging students in knowledge acquisition, setting objectives, organizing regular meetings and maintaining communication with each student to ensure motivation and engagement. Additionally, Kop (2011, as cited in Bigné, Badenes, Ruiz & Andreu, 2018) suggests that students prefer teachers who guide them in using resources and tasks, verify the accuracy of information and encourage their active participation. Understanding and controlling technical skills are also crucial for teachers to effectively operate in a technology-mediated environment, facilitating communication between students, materials and the teacher (Bigné, Badenes, Ruiz & Andreu, 2018).

Schlusmans et al. (2009) have mentioned the following skills while teaching through virtual learning apps:

Preparations to make.In order to address the insecurity and unfamiliarity felt by both students and tutors, comprehensive training and familiarization with the virtual classroom application are necessary. Tutors should have hands-on experience and be well-prepared before engaging with students. Adequate preparation involves learning how to effectively utilize new technologies and adapt them for educational purposes. Tutors should ensure that all required materials are uploaded to the virtual classroom prior to the students' arrival. Similarly, students participating in the virtual classroom should receive proper instructions and be well-prepared. Technical preparedness is important, but students should also be familiar with basic etiquette to be followed in a virtual classroom. They should know how to ask questions, inform the tutor about temporary absences and minimize interruptions from family members. Organizing informal sessions to discuss rules and regulations can be beneficial for new groups (Schlusmans et al., 2009).

***Training and support for tutors and students*.** To address the concerns of tutors who are still uncertain about conducting virtual classes independently, it is recommended to provide an introductory virtual workshop. This workshop should focus on teaching tutors how to set up and effectively use the virtual classroom,

specifically in their role as session moderators. Additionally, to ensure smooth functionality, students can be offered a 30-minute test session to familiarize themselves with the audio features and receive brief instructions (Schlusmans et al., 2009).

Interactions.To promote maximum interaction among students and teachers, it is recommended to maintain manageable group sizes of around 8 to 15 students. Teachers should proactively plan how they will engage with their students by selecting specific tools from the available range in the virtual classroom. Utilizing polls and quizzes and sharing the results can be a highly effective method of interaction and maintaining student attention. While the chat functionality may initially appear distracting, it actually provides valuable insights for the tutor as they can assess the overall mood of the class. Additionally, teachers should be aware that students may experience difficulty concentrating after approximately 30 to 40 minutes of attendance. To address this, regular coffee breaks should be incorporated, allowing students to use these breaks to engage in refreshing chats with one another (Schlusmans et al., 2009).

***Recordings*.** Students value the virtual classroom for its recording feature, which enables sessions to be accessed later for revision or to compensate for missed classes. It is important for teachers to obtain student consent and adhere to privacy laws when recording class sessions (Schlusmans et al., 2009).

Facing Difficulties while Selecting Virtual Learning Modes. As Goodwin (2013) states, Educators note that the app is in the ‘Education’ section of the app store or play store does not necessarily mean it is educational. Hirsch-Pasek et al. (2015) warn that many apps which are labeled as educational are not held to any science-based standards or subject to any certification. Murray &Olcese (2011) state current advances in tablet technology are underused and not aligned with developmental theories and are of little use to educators.

The educational value and appropriateness of the app content can be difficult to determine (Yusop & Razak, 2013). However, there are thousands of educational apps in the app store or play store but it would be difficult to conclude that all of the apps have been designed according to a current theoretical understanding of effective pedagogical practices (Walsh, Sproule, McGuinness, Trew and Ingram, 2010). “The little information on the quality of apps is available, beyond the star ratings published on retailers' web pages or digital stores” (Stoyanov et al., 2015).

Problems of Evaluating Virtual Learning Modes. Crescenzi-Lanna & Grané-Oró (2016) identified significant issues concerning visual and interaction design, adaptability, layout and navigation in educational apps due to a lack of quality and consideration for child development. These apps primarily rely on graphics, videos, animations and sounds, with minimal or no text, as noted by Nikiforidou & Pange (2010). Walker (2010) asserts that the evaluation of educational apps should consider multiple features, which may vary depending on the perspectives of parents, teachers and software developers. Therefore, app reliability and compatibility are crucial factors to consider. When assessing the educational value of such apps, the focus should be on their potential educational benefits.

According to the author, the majority of apps lack consideration for how children learn and fail to deliver on their promises of supporting purposeful, effective and enjoyable learning experiences. According to Hirsh-Pasek et al. (2015), it is argued that apps should surpass the replication of older media formats like books, worksheets, television or video games. Instead, they should strive to create digital experiences that are cognitively active, highly engaging, meaningful, and socially interactive, all while aligning with specific learning goals.Hsu & Ching (2013) assert that the emergence of mobile apps has sparked the interest of educators as it simplifies the process of teaching and learning. Nevertheless, there is a shortage of relevant and suitable apps, leaving teachers to rely on reviews and anecdotes rather than firsthand testing. Consequently, there is a growing need for and potential benefits in developing customized mobile apps for educational purposes.

Consideration while Selecting Virtual Learning Mode. Educators should prioritize selecting apps that offer seamless connectivity, eliminating the need for frequent troubleshooting. These apps should enable individual and collective student engagement, fostering collaboration and complementing mobile learning efforts.Beeland (2002) asserts that mobile devices and associated apps should enhance knowledge acquisition through three distinct learning styles: visual, acoustic and kinaesthetic (or physical, tactile) learning. Shing & Yuan (2013) highlight the challenge of evaluating the scientific impact of apps. To maximize educational benefits, it is essential to design truly educational apps with specific and high-quality subject matter content.

Schlusmans et al. (2009) argue that when selecting virtual classroom instruments, considerations should be given to educational use, user-friendliness,

features and administration, catering to the needs of tutors, students and educational experts. For educational use, the ability to support various teaching activities such as discussions, workshops, group work and assessments is crucial. User-friendliness entails assessing installation procedures, integration with Virtual Learning Environments (VLEs) and the availability of training materials for both students and teachers. Furthermore, the availability of Voice over Internet (VoIP), presentation tools, whiteboard tools, application sharing, public and private chat, feedback tools, document sharing, polling and quizzes should be considered. Administrators should possess knowledge of installation and administration processes. Additionally, teachers should evaluate other features like audio quality, a comprehensive feature set, support for multiple platforms, automatic reconnection capabilities and low bandwidth requirements.

Parmar (2012; as cited in Papadakis & Kalogiannakis, 2017) argues that educational apps available in app stores may not always fulfill their claim of being truly educational and purposeful for teachers and students. Developmentally appropriate educational apps should engage students in collaborative and interactive tasks, providing significance for both teachers and students. However, some apps may create barriers as they require a Google Account and the students' and schools' email addresses, limiting accessibility. Additionally, to ensure smooth functionality, apps should be compatible with low-space coverage and low internet bandwidth. This is particularly important for maintaining uninterrupted learning experiences and preventing distractions caused by network problems, even on devices with lower Android versions.

Virtual Learning Environment. The term Virtual Learning Environment(VLE) refers to "he components in which learners and tutors participate in online interactions of several kinds comprising online learning" (Rijal, 2017). In a web-based learning environment, educators utilize the internet to transfer learning materials to students. This learning environment is characterized by a diverse set of teaching and learning tools that are specifically designed to enhance student learning through the use of computers and internet connectivity. This platform offers teachers to share educational materials with their students inside and outside of the classroom "24 hours a day, seven days a week" (Sneha & Nagaraja, 2013 as cited in Rijal, 2017, p. 16).

Virtual educational environments require the implementation of specific pedagogical, didactic and methodical technologies, as well as information resources such as databases, knowledge libraries and electronic training materials. Additionally, modern software is essential to facilitate virtual classes effectively. These virtual environments enable participants in the educational process to interact virtually using information and communication technologies. They encompass a range of complex computer tools and technologies that enable the control of educational environment maintenance and facilitate communication among participants in the learning process.Yang (2013) contends that a learning simulation is a structured activity that replicates essential aspects of a real environment, enabling learners to experience the workings of reality within a virtual setting. Bishop (2009) defines a virtual world as an online community typically presented as a computer-based simulated environment, facilitating user interaction, object utilization and creation.

A virtual classroom refers to live classroom-like sessions conducted over the Internet. Nurassyl (n.d.) describes the virtual educational environment as a comprehensive collection of information resources that provides methodological and technological support for managing and ensuring the quality of the educational process. It facilitates virtual interactions among participants in the educational process through the utilization of information and communication technologies. Liu (2015) argues “the virtual class has a better effect than the real classroom or the distance learning group”(p.40). The integration of virtual reality technology in virtual classrooms provides various advantages, including the creation of immersive learning environments, the presentation of information in multiple dimensions, the engagement of learners’ sensory organs and the replication of natural phenomena.

Barajas (2002) asserts that Virtual Learning Environments (VLEs) are online platforms that facilitate both synchronous and asynchronous collaborative interactions between teachers and learners. VLEs offer learning resources that can be accessed by students at any time. A VLE can encompass various combinations of distance and face-to-face interaction, as long as there is a presence of virtuality in terms of time and/or space. Furthermore, the emergence of virtual education methods poses significant challenges related to technological and organizational changes (Bates, 1999; Laurillard, 1993), decision-making (Collis, 1996) and costing (Basich, 1998; Collis, 1996) (as cited in Barajas, 2002).

Review of Related Empirical Literature

In their study titled‘Mobile App Design for Teaching and Learning: Educators’ Experiences in an Online Graduate Course,’ Hsu & Ching (2013) employed a survey method to gather data. The study required students to possess or have access to smartphones or tablets running Android OS version 1.6 or higher in order to fully engage in the app design and testing process. This was necessary as certain functions, such as shaking the device to activate an action, were only available on physical mobile devices. The results of the study indicated that the students had positive experiences with online learning and greatly appreciated the abundant peer support provided within the virtual learning community.

In the research study titled ‘Students Perception on the Use of Online Resources,’ conducted by Dahal (2015), a combination of open and closed-ended survey questionnaires was utilized. The study involved more than forty plus 2 level students and its aim was to explore students' perceptions of various online resources, including websites, Gmail, e-books, blogs and Facebook. The findings of the study indicated that online resources play a significant role in motivating students to learn. Additionally, students reported using online resources to access authentic and up-to-date information.

In the research study titled ‘Design and Application of a Virtual Classroom System in Major Courses in Industrial Arts,’ conducted by Liu (2015), the aim was to investigate the effectiveness of virtual learning compared to real classroom learning and distance learning. The study involved asking hundred questions to students. The findings revealed that students in both real classrooms and virtual classrooms achieved similar scores, indicating that virtual learning is as effective as learning in a physical classroom. However, the results also indicated that virtual learning has certain advantages over real classroom and distance learning. Virtual classrooms have the ability to visualize logical reasoning and abstract theories which allow students in virtual classroom groups to more easily grasp logical reasoning skills and abstract theoretical knowledge.

In the research study titled ‘ELTS Candidates' Perception on Asynchronous Mode of E-Learning for Developing Language Skills,’ conducted by Rijal (2017), the objective was to examine the usage of asynchronous e-tools for developing language skills among IELTS candidates. The study utilized Likert-scale, open-ended and

closed-ended questionnaires administered through survey questionnaires and focused group discussions. The findings indicated that IELTS candidates held a positive perception of the e-learning platform and believed it had a beneficial impact on their language skills development.

In the research study titled ‘The Future of Virtual Classroom: Using Existing Features to Move Beyond Traditional Classroom Limitations,’ conducted by Xenos (2018), the aim was to explore the utilization of advanced features in virtual classrooms beyond traditional classroom limitations. The study involved conducting informal interviews with 21 educators from 15 different countries. The participants were asked questions starting with ‘Have you...?’ to gather information about their experiences with virtual classroom usage and anecdotes of failures. The findings revealed that, in most cases, the features of virtual classrooms were tested but not fully utilized in practice. The results suggest that the exploitation of the advanced features of virtual classrooms has not yet reached its full potential.

In their article titled ‘Using Microsoft Teams to Support Collaborative Knowledge Building in the Context of Sustainability Assessment,’Buchal & Songsore (2019) conducted a study to assess the effectiveness of Microsoft Teams as a platform for collaborative knowledge building. The findings of the study revealed that MS Teams was found to be highly useful and superior to alternative platforms for various tasks such as messaging, file sharing and collaborative authoring. The research provided evidence that Microsoft Teams facilitated effective collaborative knowledge building among students. The students rated their collaborative abilities as good to excellent and perceived the project as effective in enhancing those abilities. Furthermore, students expressed comfort in giving and receiving constructive feedback. They also reported that MS Teams was easy to learn and use and more beneficial compared to other collaboration tools they had previously used.

Selvaraj, Vishnu, KA, Benson & Mathew (2021) conducted a study on the ‘Effect of pandemic-based online education on teaching and learning system.’ The findings revealed that most learners expressed a preference for regular classes, citing higher efficiency, increased interaction and better overall understanding compared to online education.

In their article titled ‘Student's perception and preference for online education in India during the COVID-19 pandemic,’ Muthuprasad, Aiswarya, Aditya & Jha (2021) discovered that a majority of the students had a positive attitude towards

online classes. They appreciated the flexibility and convenience it offered. Students indicated a preference for well-structured content including recorded videos uploaded on university websites.

Implications of the Review of the Study

I have conducted a comprehensive review of relevant literature, including theses, journal articles and research articles to establish a strong foundation for my research. This review has allowed me to compare and correlate information from various scholarly sources, ensuring that my study aligns with and contributes to the existing body of knowledge in the field.

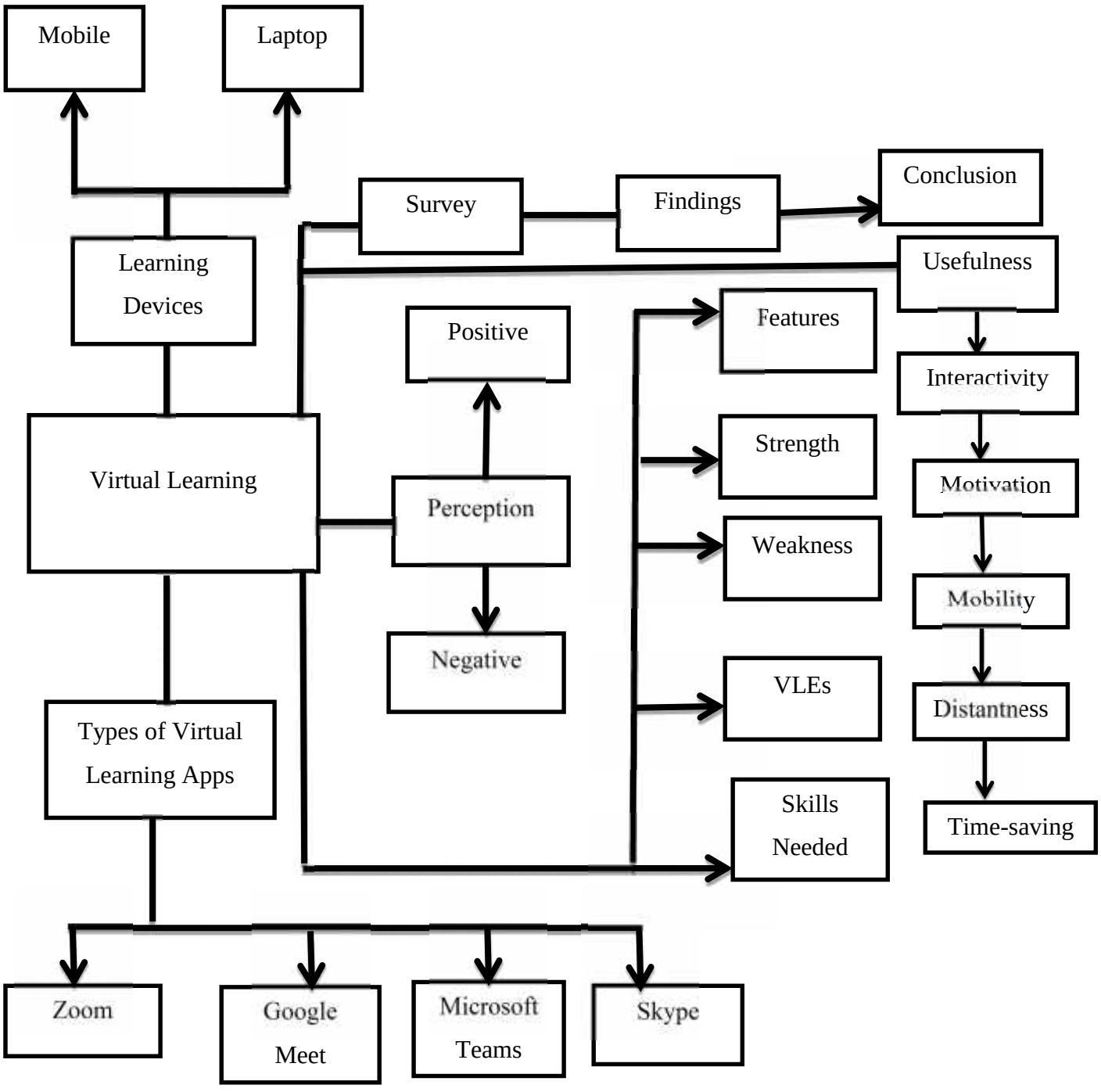
In my research, I have conducted a comprehensive review of both theoretical and empirical literature. The studies mentioned above have been instrumental in shaping my understanding of virtual learning apps, their features, strengths and weaknesses. Goodwin (2013) provided insights into the types of virtual learning modes while Xenos (2018) delved into their features. Schlusmans et al. (2009), Bower (2014) and Xenos (2018) shed light on the strengths of virtual learning modes, whereas Schlusmans et al. (2009), Arora (2019) and Dawadi, Simkhada & Giri (2020) explored their weaknesses.To further enhance my knowledge about virtual learning, I referred to Guzzacheva (2020) to gain insights specifically about Zoom. The studies of Bigne, Badenes, Ruiz & Andreu (2018) and Schlusmans et al. (2009) were particularly helpful in understanding the skills required in a virtual learning environment. Additionally, I gained valuable insights from Goodwin (2013), Pasek et al. (2015), Murray & Olcese (2011), and Yusop & Rizak (2013) regarding the challenges that educators face when selecting educational apps.

Furthermore, my understanding of virtual learning environments was enriched through the studies conducted by Rijal (2017), Yang (2013), Bishop (2009) and Liu (2015). By synthesizing information from these studies, I have been able to develop a comprehensive understanding of the topic and incorporate relevant insights into my own research.In my exploration of empirical literature, I encountered valuable guidelines for conducting survey research. Rijal’s (2017) study on the perception of the asynchronous mode of E-learning for developing language skills provided insights into survey research practices. Additionally, the study introduced me to the utilization of tools such as Likert-scale, open-ended and closed-ended

questionnaires.Furthermore, Hsu & Ching's (2013) study helped me understand the attitudes of students towards their learning experiences and the use of closed-ended questionnaires in capturing their perspectives. Similarly, Liu's (2015) study shed light on the effectiveness of virtual learning compared to traditional classroom learning, which offered valuable insights for my own research. Xenos' (2018) study not only provided guidance on constructing closed-ended questionnaire items but also offered insights into experiences derived from virtual classroom usage.

Conceptual Framework

The conceptual framework presents a visual representation or diagram that illustrates the relationships between key concepts, variables and constructs in the study. It helps to clarify the theoretical framework and guide the research design and data analysis. The conceptual framework serves as a roadmap for the study, outlining the key elements and their interconnections. The conceptual framework of this research study can be drawn as follows:


Mobile
Laptop
Learning Devices
Survey
Findings
Conclusion
Usefulness
Interactivity
Motivation
Mobility
Distantness
Time-saving
Virtual Learning
Positive
Perception
Negative
Features
Strength
Weakness
VLEs
Skills Needed
Types of Virtual Learning Apps
Zoom
Google Meet
Microsoft Teams
Skype

Chapter III

Methods and Procedures of the Study

This chapter involves research design and method, population, sample and sampling strategy, data collection tools, sources of data, data collection procedures, data analysis and interpretation and ethical consideration for accomplishing this study.

Design of the Study

Survey research is employed to gather factual information, as well as data on attitudes, preferences, beliefs, predictions, behavior and experiences, both in the present and the past, from the targeted population. The primary objective of conducting a survey is typically to obtain a snapshot of prevailing conditions, attitudes or events at a specific point in time. Data for surveys are collected using questionnaires, interviews or a combination of both methods.

The survey conducted in this research is quantitative in nature, aiming to gather information from a large number of individuals. The use of a larger number of participants is believed to enhance the validity of the data collected. To achieve this, a representative sample is selected from the overall population. By selecting a representative sample, the research aims to ensure that the characteristics and demographics of the sample closely mirror those of the population as a whole.

I applied the following procedures while carrying out survey researchsuggested by Nunan (1992, p.160):

Step 1: Define Objectives
Step 2: Identify target Population
Step 3: Literature review
Step 4: Determine sample
Step 5: Identify survey instruments
Step 6: Design survey procedures
Step 7: Identify the analytical procedure
Step 8: Determine reporting procedures

Population, Sample and Sampling Strategy

The population, sample and sampling strategy of this study can be described as follows:

Population.I specifically targeted Bachelor level students enrolled in various campuses located in Banke district. The selection of participants was not limited to any specific academic subject area, as students from diverse fields such as English, Nepali, Math, Health Education and other disciplines were included in the study. This approach aimed to capture a comprehensive representation of Bachelor level students across different academic subjects within the given geographical area.

Sample.I employed a sample size of hundred students for data collection using survey questionnaires. The survey questionnaires were designed to include Likert scale items, allowing participants to express their opinions and perceptions on the research topic using a rating scale. This approach provided a quantitative measure of the students' perspectives and allowed for the systematic collection of data for analysis and interpretation.

Sampling.I implemented a purposive sampling procedure to select the respondents for the study. This sampling method involved deliberately selecting participants who met specific criteria that aligned with the research objectives. By purposefully selecting the participants, I ensured that the sample represented the target population in a meaningful and relevant way. This approach allowed for a focused and targeted investigation of the research objectives, increasing the likelihood of obtaining valuable insights and meaningful data.

Research Tools for Data Collection

The primary research tools utilized in this study were survey questionnaires and Likert scales. These instruments were chosen to gather data on the attitudes and perceptions of the students. The survey questionnaires comprised a combination of open-ended and closed-ended questions, allowing for both qualitative and quantitative data collection. The closed-ended questions were designed to elicit responses on a Likert scale, enabling participants to express their level of agreement or disagreement with specific statements.

Sources of Data

The data collection tools in this study relied on both primary and secondary sources. They can be described as follows:

Primary Sources. Primary sources refer to data directly obtained from the participants through the survey questionnaires and Likert scales. These sources provided firsthand information about the students' attitudes and perceptions towards virtual learning.The primary sources of data in this study included survey questionnaires and Likert scales as data collection instruments. The survey questionnaires were designed specifically for this research study and were administered to Bachelor level students in the Banke district.

Secondary Sources. The secondary sources of data in this study included published thesis, journal articles, books and other relevant writings. These secondary sources were utilized to gather existing knowledge, theories and insights related to virtual learning and students' perceptions.The study incorporates a range of scholarly works to establish a strong theoretical foundation and situate the findings within the existing body of knowledge. Some of the specific secondary sources mentioned include the works of Shing & Yuan (2016), Hsu & Ching (2013), Guzacheva (2020), Xenos (2018) and Liu (2015) etc.

Data Collection Procedures

For survey questionnaires and the Likert scale, I adopted the following procedures:

i. Initially, survey questionnaires and a Likert scale were developed.
ii. Subsequently, five campuses in Nepalgunj, Banke, were purposively selected.
iii. Efforts were made to establish rapport with the students and explain the purpose of the visit, followed by obtaining their consent.
iv. The questionnaires were then distributed among the students.
v. Assistance was provided to the participants as required.
vi. Lastly, the respondents were sincerely appreciated for their responses, cooperation and patience.

Data Analysis Procedures

The collected data in this study were analyzed quantitatively. Initially, the data were described using quantitative measures such as frequencies and percentages. The data processing involved organizing the data and presenting it in figure to provide a clear overview of the responses.Descriptive statistical methods were employed to analyze the data. This involved calculating frequencies to determine the number of occurrences for each response option and percentages to express these frequencies relative to the total number of respondents. These statistical measures provided a quantitative summary of the participants' attitudes, perceptions, and preferences related to the study variables.

Ethical Considerations

The research study adhered to academic rules and ethical guidelines throughout its conduct. The confidentiality and privacy of the participants were ensured by using pseudonyms for students and schools and personal secrets were not disclosed. Participants were not forced to respond and their participation was entirely voluntary. Measures were taken to prevent any social, physical or psychological harm to the participants.Integrity in data collection and reporting was maintained, as there was no intentional falsification or misinterpretation of the data. Prior approval and consent was obtained from the supervisor and respected Guru Dr. Tara Datta Bhatta, before conducting the field survey. Proper acknowledgment of scholars’ ideas and contributions was made in the reference section following the APA style guidelines.

Chapter IV

Analysis and Interpretation of Results

This chapter focuses on the analysis and interpretation of quantitative data obtained from the survey questionnaires and Likert scale, aiming to present the results related to students' perceptions of virtual learning modes. Various statistical tools were employed to analyze and interpret the data. The data from closed ended questionnaires have been presented using statistical tools. The raw data obtained from the questionnaires were then presented in in the figures for analysis and interpretation. Similarly, close ended questionnaires have been analyzed critically.

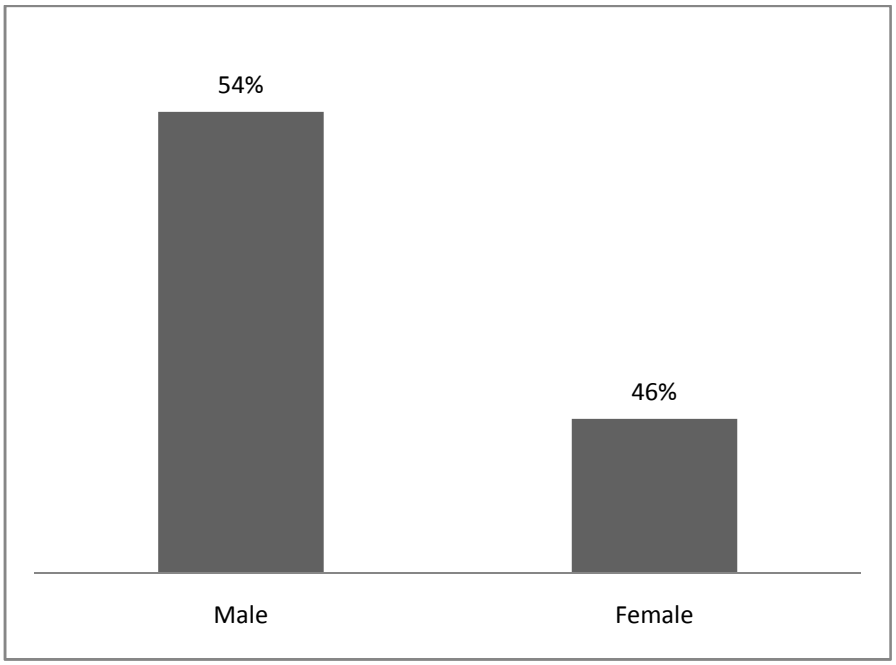
Analysis of the Students' Perception

This sub heading deals with the analysis and interpretation of the students' perceptions of virtual learning modes while learning English. The responses from the participants have been analyzed and interpreted qualitatively and quantitatively. The data are analyzed and interpreted as follows:

Demographic Profiles of the Respondents. This research included a total of hundred participants who had experience using virtual learning modes. The participants were selected from four different campuses located in Nepalgunj, Banke. They represented various academic disciplines, including English, Nepali, Math and Health Education. The diverse backgrounds of the participants provided a comprehensive perspective on the use of virtual learning modes. The demographic profiles of the respondents can be presented in the figure below:

Figure 1

Demographic Profiles of the Respondents

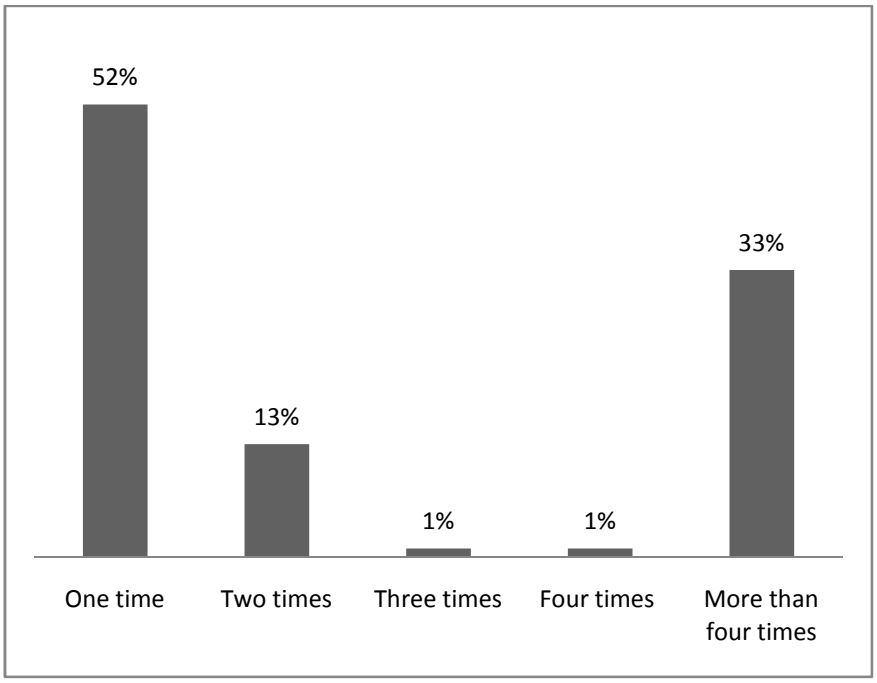


The data analysis reveals that 54% of the respondents were male, while 46% were female. The percentage of male respondents was higher compared to female respondents in this research.

Frequency of Using Virtual Learning Modes. The respondents had prior experience using virtual learning modes, particularly during the pandemic situation when physical learning was not feasible. They relied on virtual learning modes as a means of continuing their education.The data obtained from the participants are given in the figure below:

Figure 2

Frequency of Using Virtual Learning Modes

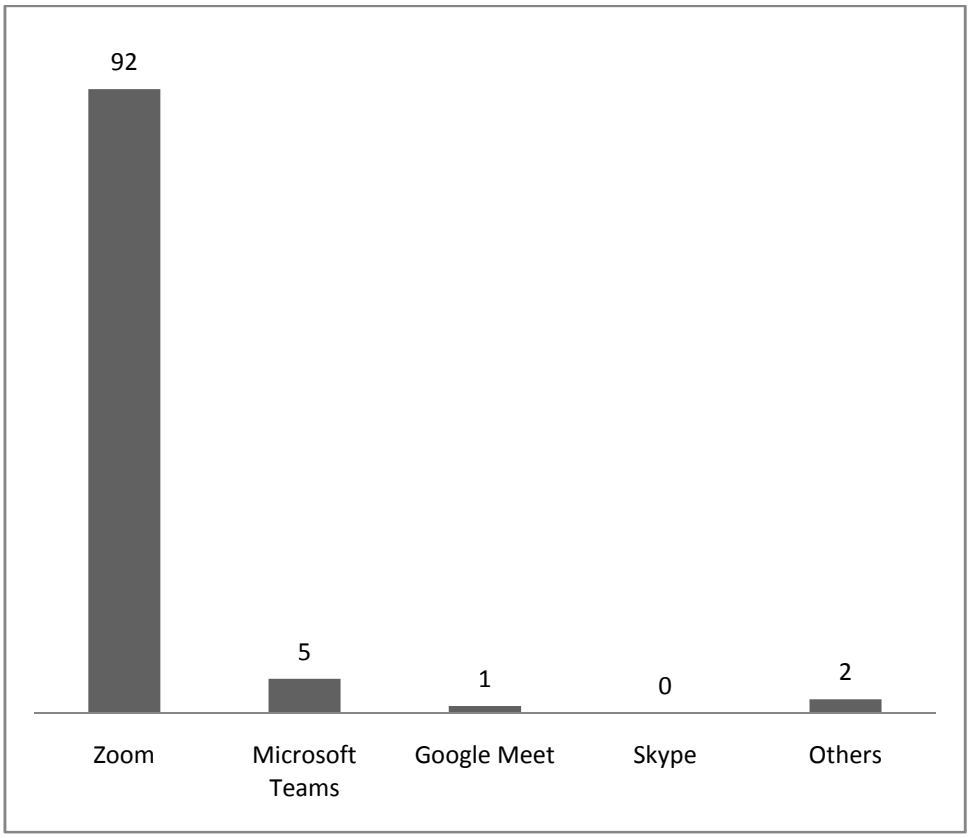


The data reveals that 52% of the respondents reported using virtual learning modes once while 13% used them twice. Additionally, 1% of the participants used virtual learning modes three times and another 1% used them four times. Remarkably, 33% of the respondents reported using virtual learning modes more than four times. This data indicates that a significant majority of the participants had experience using virtual learning modes at least once. It is noteworthy that an equal percentage of participants (1%) reported using virtual learning modes three times and four times.

Types of Virtual Learning Modes theyUsed. During the pandemic situation and the resulting lockdown, many schools and colleges turned to virtual learning as a means to continue education. The participants in this study also utilized virtual learning modes for their learning purposes. These modes include popular platforms such as Zoom, Microsoft Teams, Google Classroom, Google Meet, Skype and others. The results obtained from the respondents are presented in the figure below:

Figure 3

Types of Virtual Learning Modes they Used



According to Figure 3, the data reveals that the majority of respondents (92%) prioritized using Zoom as their preferred virtual learning mode. In contrast, 5% of respondents preferred Microsoft Teams, 1% preferred Google Meet and no respondents preferred Skype. Additionally, 2% of respondents indicated a preference for other types of virtual learning modes. It is notable that none of the participants reported having experience with Skype while learning through virtual modes. These findings highlighted that Zoom was the most widely used and preferred virtual learning mode among the participants in this study.

AmpleLearning OpportunitiesOffering Virtual Learning Modes. Virtual learning modes offer a wide range of learning opportunities and serve as a comprehensive platform for educational purposes. These modes provide participants with various interactive featuresincluding screen sharing, chat box and hand raise. The obtained results from the respondents are presented in the figure below:

Figure 4

Ample Learning Opportunities Offering Virtual Learning Modes

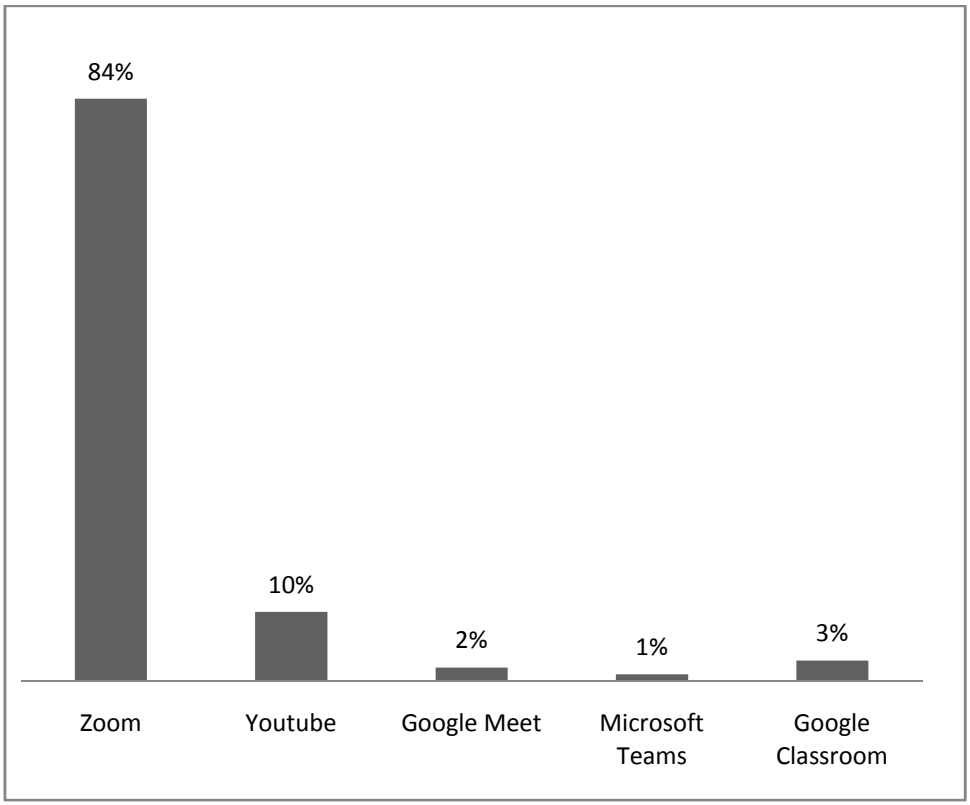
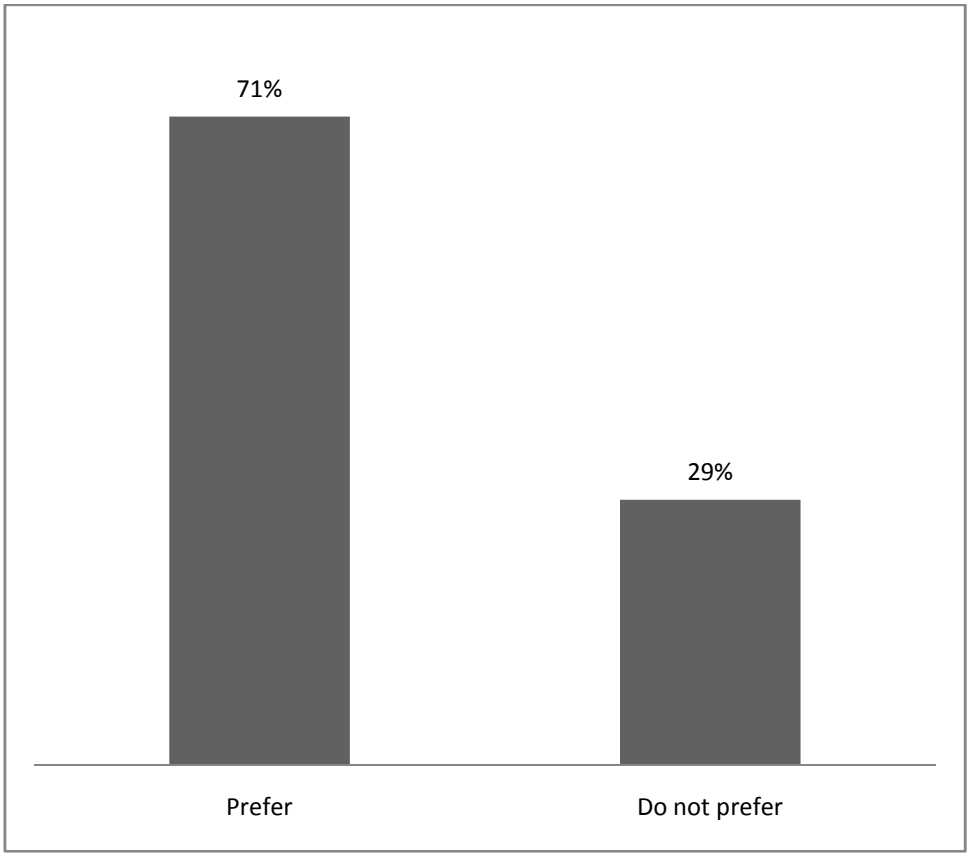


Figure 4 presents the respondents' perceptions regarding the learning opportunities offered by different virtual learning modes. The majority of respondents in the study expressed a positive perception of Zoom in terms of the learning opportunities it offers. According to the data, 84% of the participants believed that Zoom provides numerous learning opportunities.YouTube was mentioned by 10% of the respondents, Google Meet by 2%, Microsoft by 1%, and Google Classroom by 3%. These percentages suggest that Zoom offers many learning opportunities.

Preference of Using Virtual Learning Modes. Virtual learning mode has become popular due to COVID 19. It is helpful for learning from anywhere and anytime. It is also useful in pandemic situation. Not only that, the participants prefer using it because of its time-saving nature.The results obtained the participants are presented in the figure below:

Figure 5

Preference of Using Virtual Learning Modes

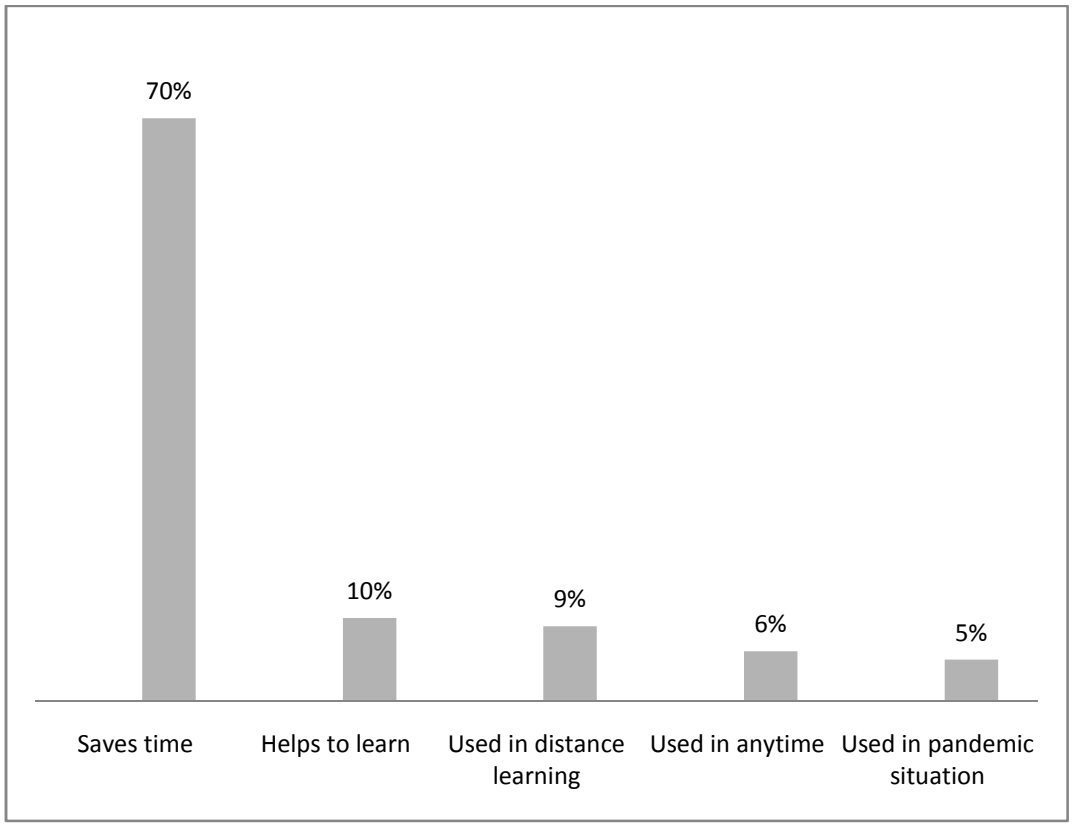


According to the data, 71% of the respondents expressed a preference for using virtual learning modes while 29% of the respondents did not prefer using virtual learning modes. The participants preference virtual learning modes it offers many features and facilities such as hand raise, chat box, mute/unmute and others. These features enhance the learning experience and facilitate interaction in virtual classrooms. However, some participants did not prefer virtual learning modes because of lack of technical devices and internet connection. They faced challenges in operating the virtual modes. Overall, the data highlights that a significant portion of the respondents favored using virtual learning modes despite some drawbacks.

Reasons Behind Preferring Virtual Learning Modes. The respondents expressed a preference for using virtual learning modes due to the various facilities they provide. The respondents preferred virtual learning modes for their various facilities, time-saving benefits, suitability for distance learning, flexibility for anytime and anywhere usage and value during pandemic situations when physical learning is limited. The results obtained from the participants are presented in the figure below:

Figure 6

Reasons Behind Preferring Virtual Learning Modes



According to the data, 70% of respondents expressed a preference for virtual learning modes due to the time-saving benefits they offer. Additionally, 10% of respondents mentioned that they preferred these modes because they facilitate the learning process. Another 9% of respondents preferred virtual learning modes because of their suitability for distance learning. Furthermore, 2% of respondents cited the advantage of being able to use these modes anytime and anywhere. Additionally, 5% of respondents mentioned that the ability to use virtual learning modes during pandemic situations was a factor in their preference. These findings highlight the various reasons thereforeparticipants favored virtual learning modes for their educational needs.

Timesaving.The use of virtual learning modes is perceived by the participants as a time-saving nature due to the elimination of the need to physically attend to school.They attend in virtual classes therefore they no longer have to walk to school and could conveniently learn from the comfort of their own home. They can do other works in free time.Regarding this, the participants were asked, “Do you prefer

virtual learning modes? If yes, Why? If no, Why?" Some of the selected responses from the participants regarding this question are presented as follows:

Participant- A said,"*I don't need to walk to school. I can learn by staying at home. I can do my other work."*

Participant- Bsaid,"*Virtual learning apps are helpful for learning. The learners are learning by staying home."*

Participant- C said, *"The participants learn virtually without attending virtual class. This can free up some of your time to work."*

From the above responses, we can conclude that virtual learning modes are helpful for learning, allowing the learners to continue their education from their homes. Similarly, this enables them to allocate more time to other tasks. Without attending in physical classes, they could learn even from their homes.

Helpful to learn.The virtual learning modes are helpful for learning. This enables participants to learn conveniently from their homes. The helps the students learn even in Pandemic period of COVID-19. This creates the alternative way to physical class to continue education. This also ensures to continuity of their education.Regarding this, the participants were asked, "Do you prefer virtual learning modes? If yes, Why? If no, Why?" Some of the selected responses from the participants regarding this question are given below:

Participant- D said, "*Due to virtual learning apps, we can learn even in pandemic situations. We learn even at the time of Covid-19."*

Participant- E said, "*Virtual apps help to learn virtually. You can learn wherever you are and whenever you are.*"

Participant- F said, *"We can learn many things as like physical classes."*

From the above responses, it can be concluded that virtual learning modes are facilitating continuous learning, even during challenging times such as the Covid-19 pandemic. Theyprovide the opportunity to learn despite the restrictions imposed by the pandemic. They ensure regularity in learning as participants have the flexibility to learn from anywhere and at any time.

Useful for distance learning.The virtual learning mode serves as a platform for distance learning. The participants are not required to attend in physical class. They attend in virtual classes by using technical devices as well as internet. They get opportunity to learn even from their homes.This kind of learning is also helpful for job holders. Regarding this, the participants were asked, "Do you prefer virtual

learning modes? If yes, Why? If no, Why?" Some of the selected responses from the participants regarding this question are given below:

Participant- G said, "*We should not be present in the school. We are learning using ICTs."*

Participant- H said, *"I can attend in virtual classes by using Zoom without going in my school."*

Based on the participants' responses, it can be concluded that learners no longer need to be present in school to access education because of importance of ICTs.This allows participants to attend virtual classes and engage in distance learning. They can engage in learning activities from their own homes.

Usefulat anytime.The virtual learning mode offers flexibility in terms of time. They can choose a suitable time according to their own wishes. This flexibility allows learners to attend virtual classes at their convenience. They can join and engage in learning activities in the morning, day or evening, whenever they desire. Thisflexibility empowers learners to engage in their studies whenever they desire. This unrestricted access enables participants to learn anytime they need. This also ensures continuous learning from anywhere and at any time. Regarding this, the participants were asked, "Do you prefer virtual learning modes? If yes, Why? If no, Why?" Some of the selected responses from the participants regarding this question are given below:

Participant- I said, "*We set our fixed time for learning. We decide suitable time according to our wish."*

Participant- J said, "*The learners learn his subject 24/7 from anywhere and anytime."*

From the above responses, it can be concluded that the participants set a fixed time for learning that suits their individual preferences.Virtual learning modes enables learners to access their subject matter 24/7, regardless of the time or location.

Preference of using in pandemic situation.According to the data, 5% of respondents expressed a preference for virtual learning modes because of their usefulness during pandemic situations. Virtual learning modesare valuable during crises like the Coronavirus pandemic as they allow for online classes and virtual meetings to take place from the safety of one's home.This enables learners to continue their education from the comfort and safety of their homes. Thus, virtual learning modes plays a significant role in facilitating learning during the pandemic period to continue education.Regarding this, the participants were asked, "Do you prefer virtual

learning modes? If yes, Why? If no, Why?" Some of the selected responses from the participants regarding this question are given below:

Participant- K said, "*t is useful in the pandemic situation like Coronavirus as we can take classes and meet from indoors."*

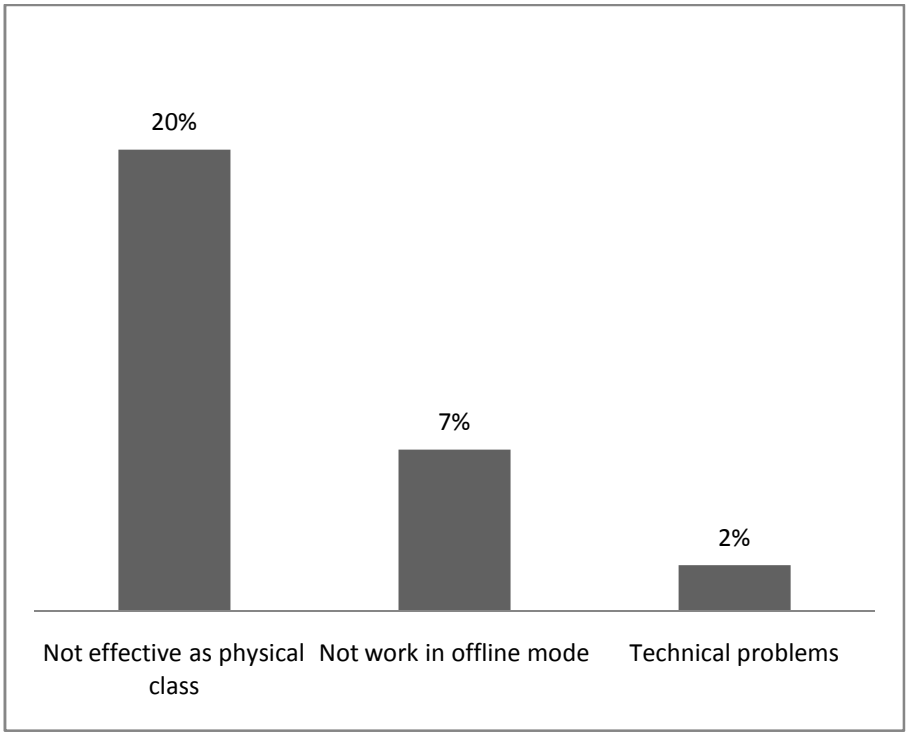
Participant- L said, "*Due to the Covid-19 crisis, the schools and colleges were closed therefore our colleges started conducting virtual classes. So, I get learning opportunities from my home."*

Based on the participants' responses, it can be concluded that virtual learning modes are facilitating learning during the pandemic, ensuring continuity of education despite the challenging circumstances.

Reasons Behind not Preferring Virtual Learning Modes. The Among the respondents, 29% expressed a lack of preference for using virtual learning modes. Some common reasons include discomfort, lack of familiarity with technology and perceived limitations of virtual learning modes.The obtained results from the participants are presented in the figure below:

Figure 7

Reasons Behind not Preferring Virtual Learning Modes



The data reveals that 20% of respondents did not prefer virtual learning modes due to their perception that it is not as effective as a physical class. They believed that face-to-face interaction and hands-on learning experiences are essential for effective

learning. Additionally, 7% of respondents expressed a lack of preference for virtual learning modes because they do not work in offline mode. This limitation restricted access to learning materials and activities when internet connectivity is not available. Furthermore, 2% of respondents cited technical problems as a reason for not preferring virtual learning modes. These technical issues involved connectivity issues or difficulties in navigating the virtual learning platforms. These concerns highlighted the need to address the perceived effectiveness and technical challenges associated with virtual learning to enhance its acceptance among learners.

Not as effective as physical class.The learners often choose to disable their videos and engage in other tasks such as chatting or completing household choresinstead of actively participating in the learning process. This lack of active engagement hinders the effectiveness of virtual classes. Small screen size leads to feelings of stress and fatigue. The strain of constantly focusing on a small screen and reading text can be mentally and physically tiring for learners. This further contributes to their dissatisfaction with virtual learning. The absence of direct meetings in virtual classrooms results in reduced attention from learners. Some participants also feel insecure and unmotivated due to technical difficulties, as they lack the necessary knowledge. Consequently, this lack of technical competence and resulting insecurity hinder active participation in virtual classes.Regarding this, the participants were asked, “Do you prefer virtual learning modes? If yes, Why? If no, Why?” Some of the selected responses from the participants regarding this question are given below:
Participant- M said, *“The learners set their videos off and do other tasks. Some are chatting instead of learning. Some are learning by sleeping. Someone is learning by doing household work.”*
Participant-N said, *“Small screen size makes me stressed. Looking and reading letters on a small screen make me tired.”*
Participant- O said, *“There is no direct meeting therefore the learners don't pay attention in learning. Some learners don't know technical matters so they feel insecure and feel lazy.”*

From the above responses, it can be concluded that learners often choose to disable their videos and engage in other tasks instead of actively participating in the learning process. Similarly, due to small screen size, it leads to feelings of stress and fatigue.Some participants also feel insecure and unmotivated due to technical difficulties.

Difficult to use in offline mode.7% of respondents did not prefer virtual learning modes because it does not work in offline mode. The participants are required to internet connection to attend virtual classes. They need an internet connection to run the class effectively and smoothly. To run the virtual class, the participants require an internet facility. Regarding this, the participants were asked, "Do you prefer virtual learning modes? If yes, Why? If no, Why?" Some of the selected responses from the participants regarding this question are given below:
Participant- P said, "*I don't like virtual learning apps. It requires an internet connection. Without the internet, the learners could not attend virtual classes."*
Participant- Q said, ""*....Internet is necessary for learning. No internet, no classes."*

Based on the participants' responses, it can be concluded that the virtual learning modes need an internet connection to run the class effectively and smoothly.Without internet access, it becomes impossible to attend virtual classes.

Technical problems.During virtual learning sessions, participants often encounter various technical difficulties that hinder their learning experience. Because of lack of technical skills, they feel demotivated and insecure while using. Similarly, the class is disturbed because of lack of knowledge about mute/unmute system. Issues such as the mute/unmute system, screen sharing, video on/off controls and raising hands functionality can pose challenges to the participants. Regarding this, the participants were asked, "Do you prefer virtual learning modes? If yes, Why? If no, Why?" Some of the selected responses from the participants regarding this question are given below:
Participant- R said, "*Most of the students don't have some technical skills like video on/off, mute/unmute etc. Some teachers also don't know how to share their screen."*
Participant- S said, "*Many learners don't know when to mute and when to unmute therefore there is background sound. There is a disturbance in learning."*

From the above responses, it can be concluded that students lack essential technical skills such as controlling video and audio settings and sharing their screens.This lack of understanding about the mute/unmute system created insecurity and hampers the smooth progression of the virtual class.

Features ofVirtual Learning Modes. Virtual learning modes offer a variety of features that contribute to their popularity among participants. These features enhance the learning experience and provide benefits that attract learners. They offer a range of features that make them appealing to participants. They offer a range of

features including a mute/unmute system, screen sharing, hand raise, video call, whiteboard and chat. The reasons behind preferring virtual learningmodes are presented in the figure below:

Figure 8

Features of Virtual Learning Modes

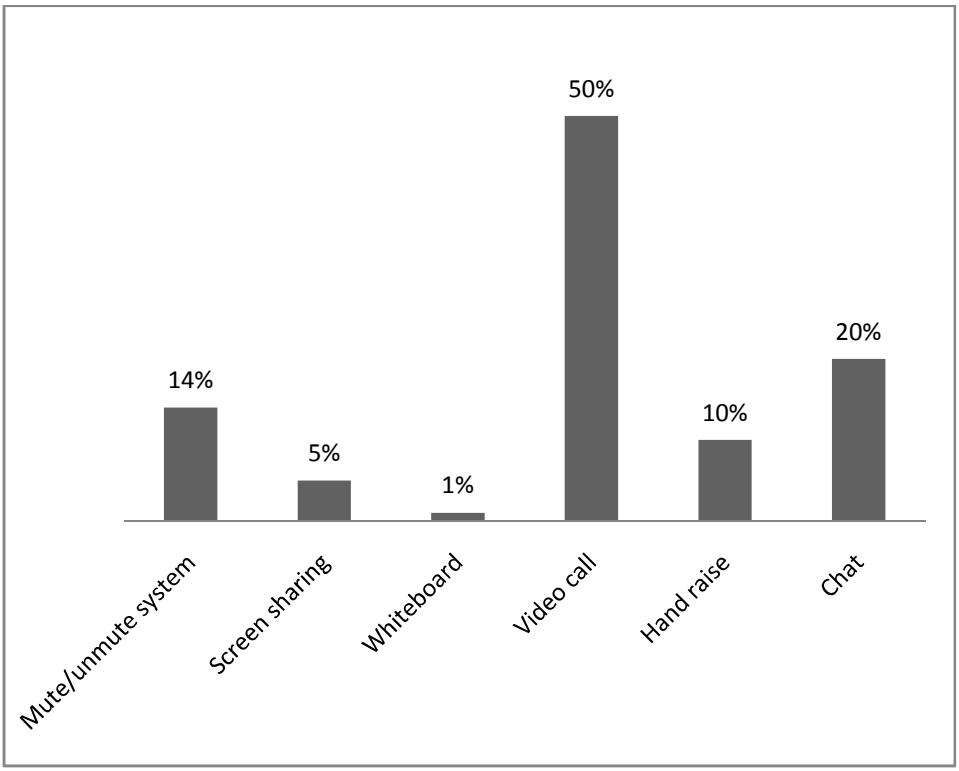


Figure 8 reveals that 14% preferred the mute/unmute system, 5% favored screen sharing, 1% appreciated the whiteboard platform while 50% stated a preference for video calls. Additionally, 10% mentioned the importance of the hand raise feature and 20% highlighted the significance of the chat system. The majority of participants expressed a strong preference for video calls as it simulates a physical classroom environment. This particular feature was favored due to its ability to replicate the dynamics of a physical classroom, providing real-time communication, interaction and visual engagement.

Useful to provide mute/unmute system.According to the survey, 14% of respondents expressed a preference for the mute/unmute system in virtual learning modes. The mute/unmute system plays a crucial role in maintaining a peaceful learning environment during virtual classes. It allows participants to control their audio presence and contribute to the class when necessary. The ability to ask

questions and actively engage with instructors enhances the overall learning experience in virtual classrooms.This allows the participants to mute or unmute themselves based on the situation. When they need to ask questions or actively participate, they can easily unmute themselves.Regarding this, the participants were asked, “Which features do you like most of virtual learning apps?” Some of the selected responses from the participants regarding this question are presented as follows:

Participant- A said, “*There is a silent environment while learning because there is a mute/unmute system.”*

Participant- B said, “*There is a peaceful environment for learning. Due to mute/unmute features, I can unmute or ask to unmute for asking questions.”*

Participant- C said, “*We can mute/unmute according to the situation. If we want to ask questions, we can unmute.”*

From the above responses, it can be concluded thatthat learners can unmute themselves or request others to unmute when they have questions or need clarification. This feature promoted effective communication and interaction between learners and instructors.This mute/unmute feature creates a silent environment conducive to focused learning.

Screen sharing.Virtual learning modes provide the valuable feature of screen sharing, allowing both learners and teachers to present their slides and share visual content. Screen sharing plays a significant role in facilitating effective teaching and learning in virtual classrooms. It allows teachers to share slides, documents, pictures and videos, enabling them to deliver presentations and provide visual aids. It also enables interactive discussions and collaborations by allowing students to share their screens and present their work. Regarding this, the participants were asked, “Which features do you like most of virtual learning apps?” Some of the selected responses from the participants regarding this question are presented as follows:

Participant- C said, “*Screen sharing enhances the effective teaching because the learners are attracted towards it.”*

Participant- D said, “*Due to screen sharing, teachers could share their screen and present their slides therefore we understand clearly.”*

Based on the above responses, it can be concluded that screen sharing enhances the teaching learning process.By utilizing screen sharing, they could share documents, slides,pictures and videos. Therefore, instructors could clarify the content

and make it more engaging for learners. The ability to choose to share screens adds to the attractiveness of this feature.

Whiteboard screen.These features offer a dynamic and interactive way for teachers and students to engage with the material. Teachers can highlight key points, use pointers to emphasize specific words or sentences and utilize pens to add additional explanations or annotations. Similarly, students can actively participate by adding their own notes, comments or drawings to the virtual whiteboard.The teachers and students could use of different tools, such as pens, pointers and highlighters, to enhance the presentation and description of the content.Regarding this, the participants were asked, "Which features do you like most of virtual learning apps?" Some of the selected responses from the participants regarding this question are presented as follows:

Participant- E said, "*The teachers and students can use the pen to add texts, the pointer to describe the word and sentences and highlighter to attract on particular word and sentence."*

Participant- F said, "*It provides many such as pen, highlighter etc. which help to clarify the particular content by pointing and writing."*

From the above responses, it can be concluded that teachers could highlight key points, use pointers to emphasize specific words or sentences and utilize pens to add additional explanations or annotations. Similarly, students could actively participate by adding their own notes, comments or drawings to the virtual whiteboard. This kind of features enhance in presentation and description of the content.

Video call.As indicated by the data, 50% of respondents expressed a preference for the video call feature in virtual learning modes. There is active participation of the students in learning process. the video call feature creates a virtual classroom environment that closely resembles a physical classroom. It allows teachers to observe students' behaviors. Moreover, the visual component of video calls enables non-verbal communication and fosters a sense of connection and presence among participants.Regarding this, the participants were asked, "Which features do you like most of virtual learning apps?" Some of the selected responses from the participants regarding this question are presented as follows:

Participant- G said, "*I like video calling features therefore teachers and students can meet as like physical class and learn about the things from our home."*

Participant- H said, *"Due to the video call feature, I feel virtual classroom as like physical of the classroom. I meet my teachers and friends physically. All the students are active in learning."*

From the above responses, it can be concluded that it allows teachers and students to meet virtually and learn from the comfort of their homes. Teachers can assess participation, monitor progress and address concerns promptly. The ability to see teachers and friends physically through video calls enhanced the overall learning experience and promotes active participation.

Handraise.Virtual learning modes often include a "Raise Hand" feature, allowing participants to indicate their desire to ask a question or seek clarification. By clicking on the "Reaction" menu, participants can access the "Raise Hand" option and notify the teacher of their intention to ask a question. When they don't understand, they raise their hand virtually. Once the hand is raised, the teacher receives a notification and grants permission for the student to ask their question. After receiving an answer from the teacher, participants can lower their hand.Regarding this, the participants were asked, "Which features do you like most of virtual learning apps?" Some of the selected responses from the participants regarding this question are presented as follows:

Participant- I said, "*When we don't understand anything, we raise our hand."*

Participant- J said, "*After raising the hand, the teacher gets the notification and permits to raise questions then he answers our queries."*

To conclude, it can be said that it provides participants with a clear and organized way to seek clarification or ask questions during the virtual class. By raising their hands, learners could actively participate in the learning process and receive the necessary support from teachers.Moreover, the feature allowed teachers to address students' questions or concerns, ensuring that everyone has an opportunity to be heard and receive assistance when needed.

Chat. Another significant feature provided by virtual learning modes is the chat functionwhich allows participants to post their queries and communicate through the chat box. When they don't understand, they can ask questions by posting them in the chat box. The teachers can then see the questions and provide answers or clarification.Regarding this, the participants were asked, "Which features do you like most of virtual learning apps?" Some of the selected responses from the participants regarding this question are presented as follows:

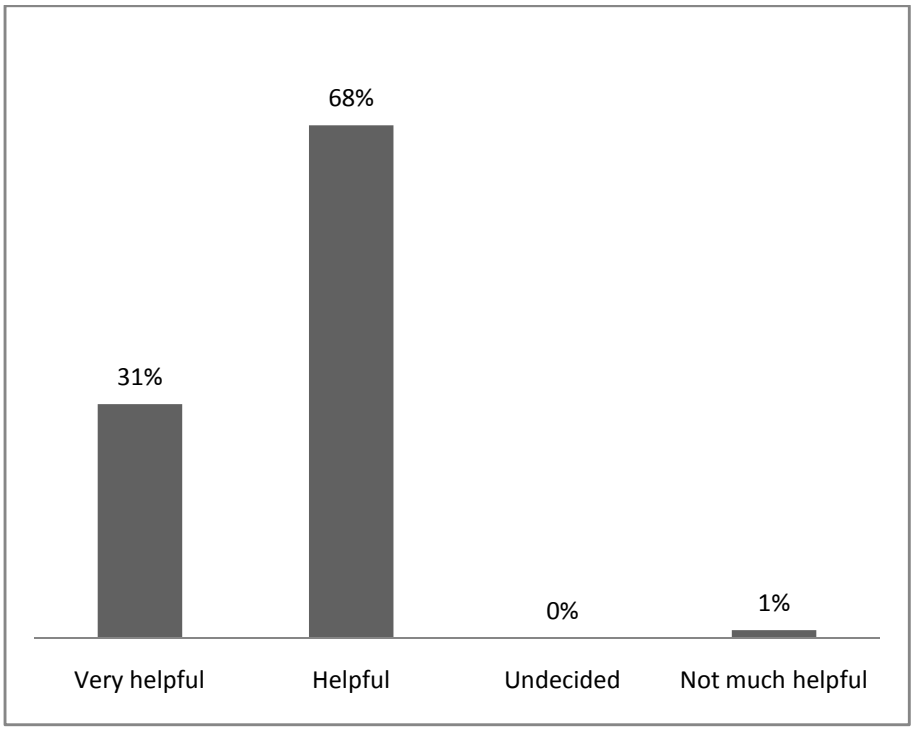
Participant- K said, *"If I don't understand anything, I ask questions by chatting. I can post my questions in the chat-box and our teachers see and answer them."*
Participant- L said, *"I write questions in the chatbox which I don't understand. After his presentation, he solves our questions by reading our questions in chatbox."*

To conclude, it can be said that the chat feature served as a valuable tool for facilitating communication and discussion between teachers and learners. It enables participants to express their thoughts, seek clarification and engage in real-time interactions. Learners could post their queries and teachers can respond promptly, ensuring that students receive the necessary explanations or additional support.

Helpful in Learningof Virtual Learning Modes. The respondents were asked about their perception of whether virtual learning modes are helpful or not in their learning.Virtual learning modes are helpful in facilitating their learning process, appreciating their convenience, flexibility and time-saving aspects. The results obtained from the participants are presented in the figure below:

Figure 9

Helpful in Learning of Virtual Learning Modes



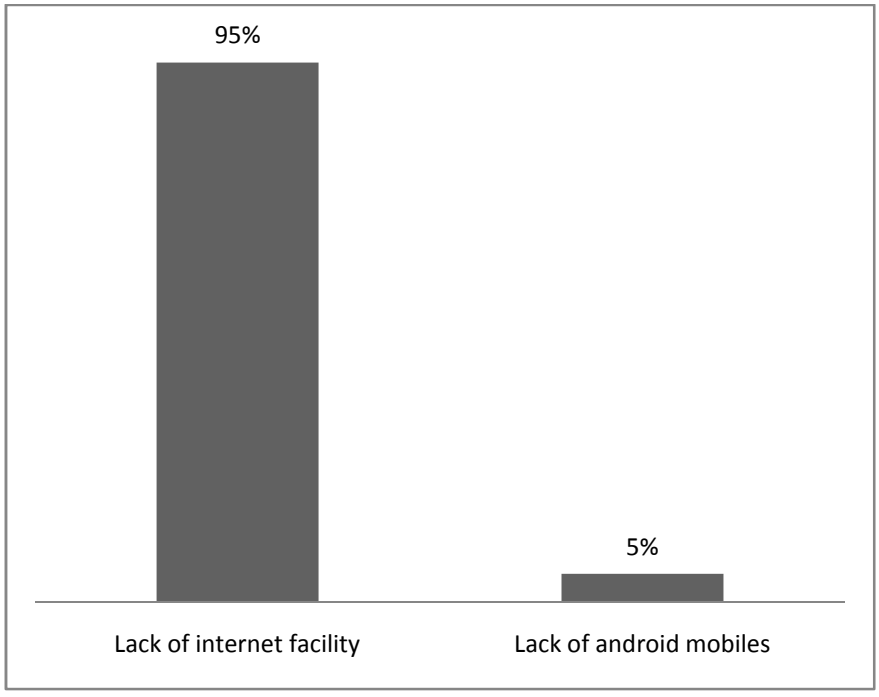
According to the data, it appears that a substantial portion of the respondents found virtual learning modes to be helpful for their learning. Specifically, 31% of the participants considered virtual learning modes to be "very helpful," indicating a high level of usefulness. Moreover, the majority of respondents, 68%, expressed that

virtual learning modes are generally helpful. It is notable that none of the respondents remained undecided about the usefulness of virtual learning modes. A small percentage of only 1% of respondents believed that virtual learning modes are not much helpful. This indicates that the majority of participants held a positive perception of the usefulness of virtual learning modes for their learning needs. Overall, the data suggests that virtual learning modes were perceived as highly beneficial for learning by a significant proportion of the respondents, with a majority expressing their positive views on their helpfulness.

Challenges while Using Virtual Learning Modes. The challenges faced by the respondents while using virtual learning modes for their learning included a lack of internet access and a lack of Android mobile devices.The lack of internet access refers to the absence of a reliable and consistent internet connection, which is crucial for accessing and participating in online classes. Lack of Android mobile devices refer to the absence or limited availability of smartphones or tablets running the Android operating system. The results obtained from the participants are presented in the figure below:

Figure 10

Challenges while Using Virtual Learning Modes



The data shows that a large majority of respondents, 95%, experienced difficulties because they didn't have access to reliable internet while using virtual

learning modes. This means that many participants faced challenges in attending online classes, accessing educational materials and participating in interactive activities. The lack of internet facilities creates a significant barrier for them, resulting slow connections or even being unable to join virtual classrooms altogether.Additionally, a smaller number of respondents, 5%, mentioned that they didn't have Android mobile devices. This means that some participants didn't have the necessary smartphones to effectively use virtual learning modes which are often designed for Android platforms. Not having an Android device limits their ability to fully utilize these modes which can be a challenge because Android devices are commonly used for education due to their affordability and widespread availability.

Lack of internet facility. The data reveals that a significant majority, 95% of the respondents lack internet facilities while engaging with virtual learning modes. This indicates that a large portion of the participants face challenges accessing the internet which in turn hinders their ability to fully utilize virtual learning platforms. The high cost of internet services poses a barrier for families with limited financial resources, making it challenging for them to access virtual learning modes and participate fully in virtual education. This discrepancy in internet access contributes to educational inequalities, creating disadvantages for students from disadvantaged backgrounds.Regarding this, the participants were asked, “Have you encountered any challenges while using virtual learning apps in learning?” Some of the selected responses from the participants regarding this question are given below:

Participant- M said, “*I can not join in virtual classes because it does not work in my village.”*

Participant- N said, “*Nepal telecom is providing e-learning packs but it is not sufficient for virtual class. The internet does not work smoothly in remote areas because of poor internet service.”*

Participant- O said, “*Internet connection is the major challenge while learning through virtual learning apps. I take a data pack for a month which is also insufficient. It is very expensive.”*

From the above responses, it can be concluded that the lack of internet facilities creates inequalities particularly for students in rural areas.Inadequate internet service in remote areas affects the students learning. Students from low-income and middle-class backgrounds struggles to afford internet services even if some telecom companies offer e-learning packs.

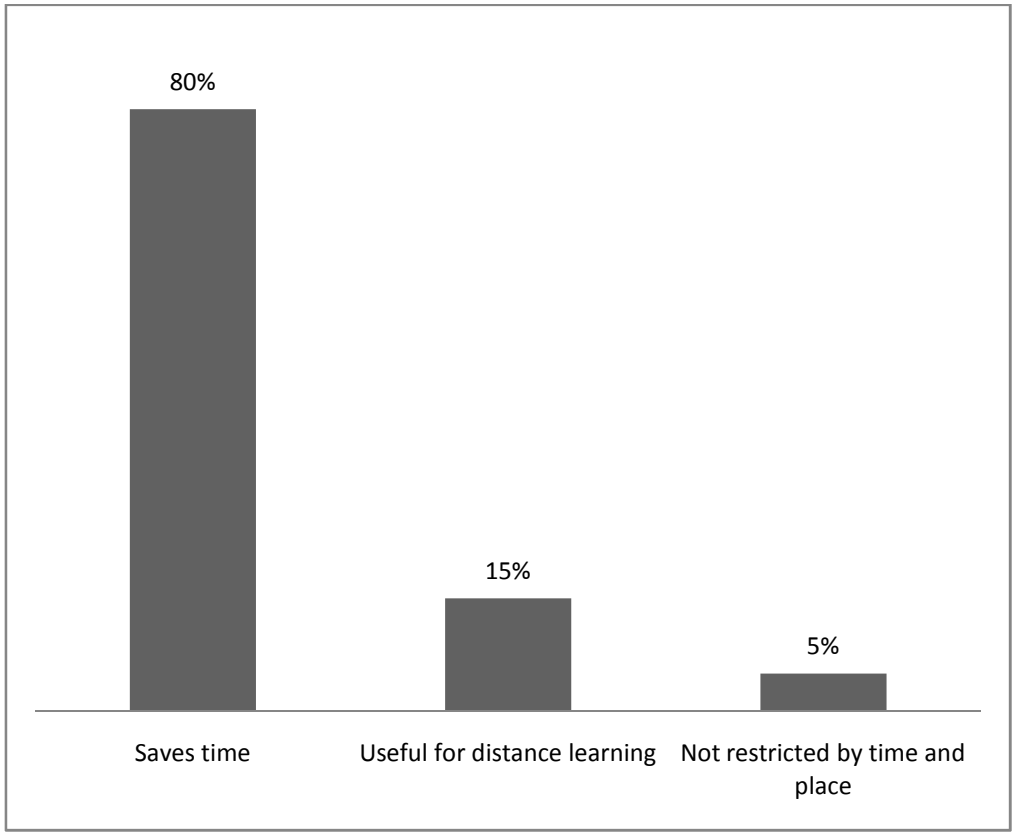
Lack of android mobiles. The data indicates that a portion of the respondents, 5%, faced challenges in learning through virtual learning apps due to a lack of Android mobile devices. This suggests that without having access to an Android mobile device, participants encountered difficulties in effectively utilizing virtual learning modes for their educational purposes. The participants are required to install virtual learning modes in their android mobile to attend in virtual class.Regarding this, the participants were asked, "Have you encountered any challenges while using virtual learning apps in learning?" Some of the selected responses from the participants regarding this question are given below:
Participant P said, "*I don't have an Android mobile. Virtual apps need to install on Android mobile from the play store. Without installing a virtual app, virtual class could not be presented."*
Participant- Q said, "*Due to lack of android mobile phone, I have to go to my friend's home to take online classes."*

To conclude, it can be said that the participantsare unable to fully engage in virtual classes and access the learning materials. The lack of Android mobile devices poses a challenge to those who do not have access to such devices. It limits their ability to participate in virtual classes, interact with course content, collaborate with peers and benefit from the interactive features of virtual learning modes.

Advantages of Virtual Learning Modes. Virtual learning modes offer numerous advantages that contribute to their popularity and effectiveness in modern education. Some of the key advantages include time-saving, facilitation of distance learning and the removal of restrictions on time and place. The results obtained from the participants are presented in the figure below:

Figure 11

Advantages of Virtual Learning Modes



According to the data, a significant majority of respondents (80%) acknowledged that virtual learning modes saved time. This aligned with the convenience and flexibility offered by virtual learningwhere learners could access educational materials and engage in learning activities at their own pace and convenience. Additionally, 15% of respondents recognized the advantage of virtual learning modes in facilitating distance learning. This feature enables individuals who are physically distant from educational institutions to access quality education, breaking down geographical barriers and expanding educational opportunities.Furthermore, 5% of respondents highlighted that virtual learning modes are not restricted by time and place. This emphasizes the flexibility of virtual learning, allowing learners to study whenever and wherever they choose. This freedom from time and location constraints enables individuals to balance their educational pursuits with other commitments and responsibilities. Overall, the majority of participants favored virtual learning modes due to the time-saving aspect, indicating that learners appreciate the ability to engage in education without the need for physical travel or adherence to fixed schedules.

Time saving.The participants recognized the time-saving benefits of virtual learning modes. The students attend in virtual class without involving in physical class. They are not required to walk for school therefore it saves time for reading and doing other tasks.Regarding this, the participants were asked, "Are there any advantages of virtual learning apps?" Some of the selected responses from the participants regarding this question are given below:

Participant- T said, "*Virtual learning saves time because the learners don't have to go to school."*

Participant- U said, "*We don't have to walk for school early in the morning. We can study staying in our homes."*

Based on the above responses, it can be said that virtual learning modes eliminates the need for students to travel to physical classrooms. They could access course materials, engage in learning activities and participate in virtual classes from the comfort of their own homes. This not only saves time but also reduces the expenses associated with commuting and traveling to educational institutions.

Useful for distance learning.Virtual learning modes are indeed considered highly useful for distance learning. These modes provide learners with the ability to access course materials, participate in virtual classes and engage in educational activities from anywhere, regardless of geographical location.These modes have become essential tools for learners who are engaged in distance education as they offer the opportunity to learn from anywhere in the world at any time. They remove the requirement for learners to physically attend classes which is particularly advantageous for individuals who may be geographically distant from educational institutions. Regarding this, the participants were asked, "Are there any advantages of virtual learning apps?" Some of the selected responses from the participants regarding this question are given below:

Participant- V said, "*The virtual learning app allows learners to access course materials from anywhere."*

Participant- W said, "*The learners are not required to attend in physical class."*

Participant- X said, "*The virtual learning app has become an essential tool for distance learning. This app helps students to learn from anywhere in the world at any time."*

Based on the above responses, it can be said that these modes providelearners with the ability to access course materials and resources from any location,

eliminating the requirement to physically attend a traditional classroom setting. By utilizing virtual learning modes, learners are not bounded by geographical constraints or the need to be physically present in a specific location.

No restriction in time and place.Participants belief that virtual learning modes offer the advantage of being unrestricted by time and place. These modes provide learners with the flexibility to access educational resources and engage in learning activities from anywhere and at any time.The absence of these restrictions allows learners to structure their learning according to their own schedules and preferences, optimizing their learning experience to suit their individual needs and circumstances.Regarding this, the participants were asked, "Are there any advantages of virtual learning apps?" Some of the selected responses from the participants regarding this question are given below:

Participant- Y said, "*This is the best kind of learning apps I have ever used because it is not restricted by time and place."*

Participant- Z said, "*The students learn from anywhere and anytime. This is possible because of virtual learning app."*

From the above responses, it can be concluded that virtual learning modes enables students to learn from anywhere, emphasizing the ability to access educational materials and participate in learning experiences regardless of their physical location. This flexibility eliminates the limitations imposed by traditional classroom settings and allows learners to study at their own convenience whether they are at home.

Learning through Virtual Learning Modes Save Time. Virtual learning modes can save time in several ways. Firstly, they provide the convenience of accessing educational materials and resources from anywhere, eliminating the need for physical travel to a specific location like a classroom. The data obtained from the participants are presented in the figure below:

Figure 12

Learning through Virtual Learning Modes Save Time

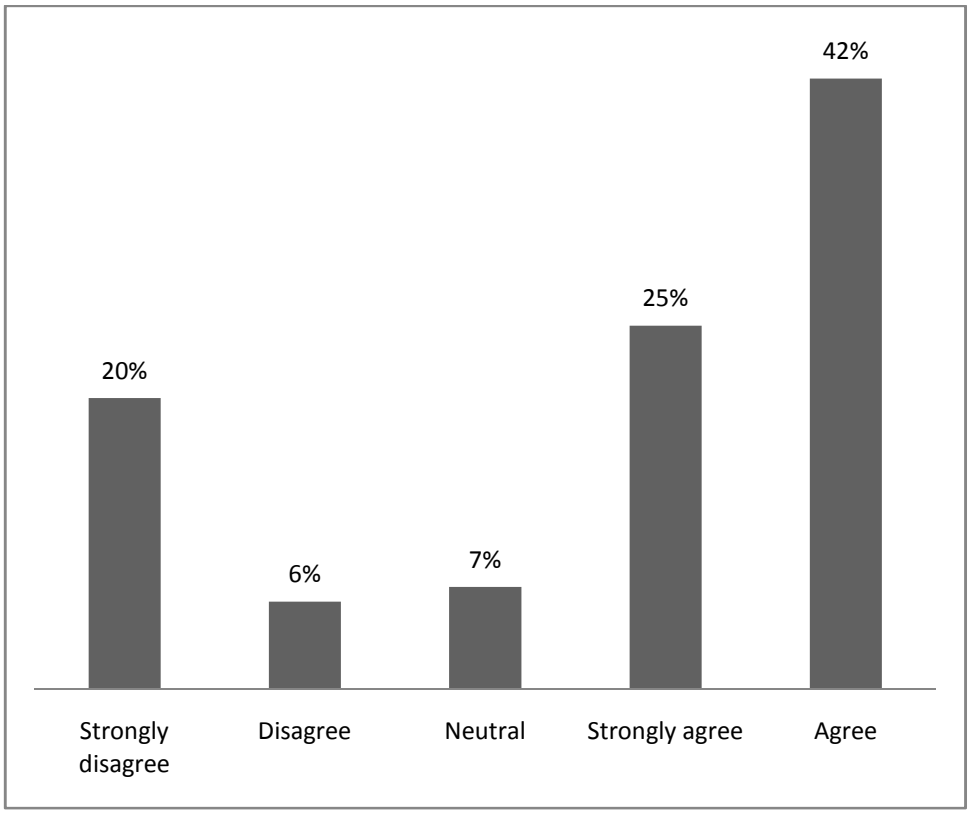
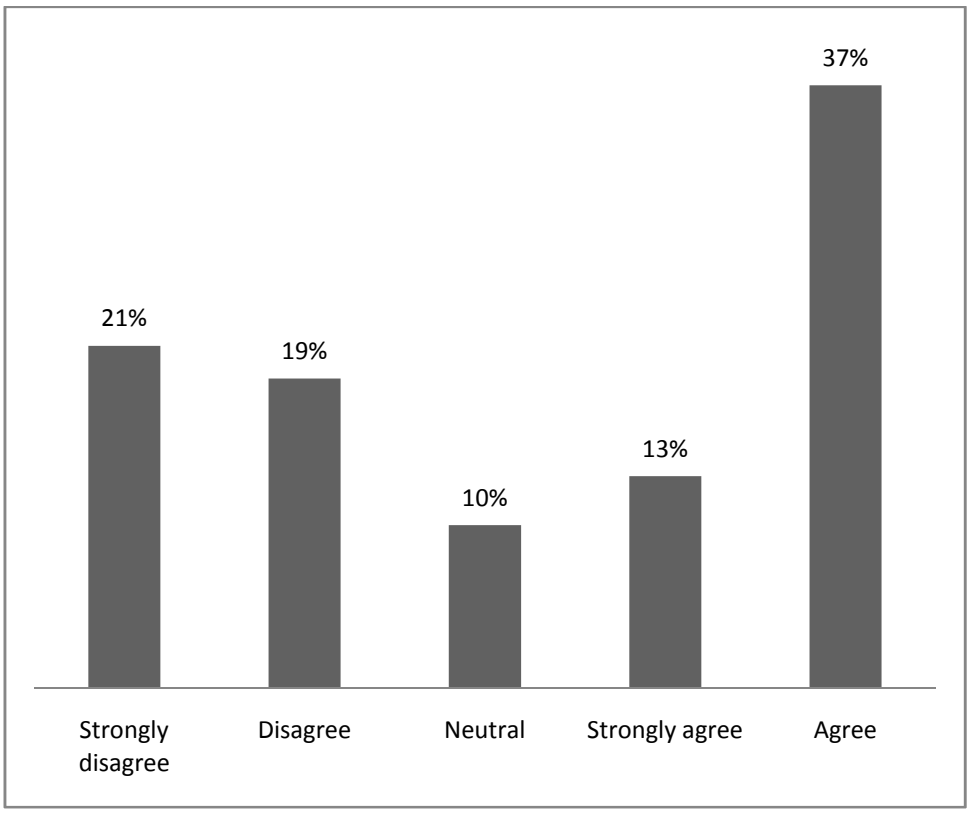


Figure 12 shows that most participants agreed that virtual learning modes save time. 25% strongly agreed and 42% agreed, making a total agreement rate of 67%. This suggested that many respondents believed virtual learning modes help with time management in learning. However, a minority of participants disagreed with 20% strongly disagreeing and 6% simply disagreeing, totaling 26% expressing disagreement. Additionally, a small proportion of participants, 7%, remained neutral, indicating they neither strongly agreed nor disagreed about the time-saving benefits of virtual learning modes. Overall, the majority of respondents believed virtual learning modes contributed to time savings but there were differing opinions among the participants.

Learning through Virtual Modes Isnot Restricted by Time and Place. One of the key advantages of virtual classes is that they are not restricted by time and place. Unlike traditional in-person classes, virtual classes provide the flexibility for participants to engage in learning activities regardless of their geographical location or time constraints. The data obtained from the participants are presented in the figure below:

Figure 13

Learning through Virtual Modes Is not Restricted by Time and Place



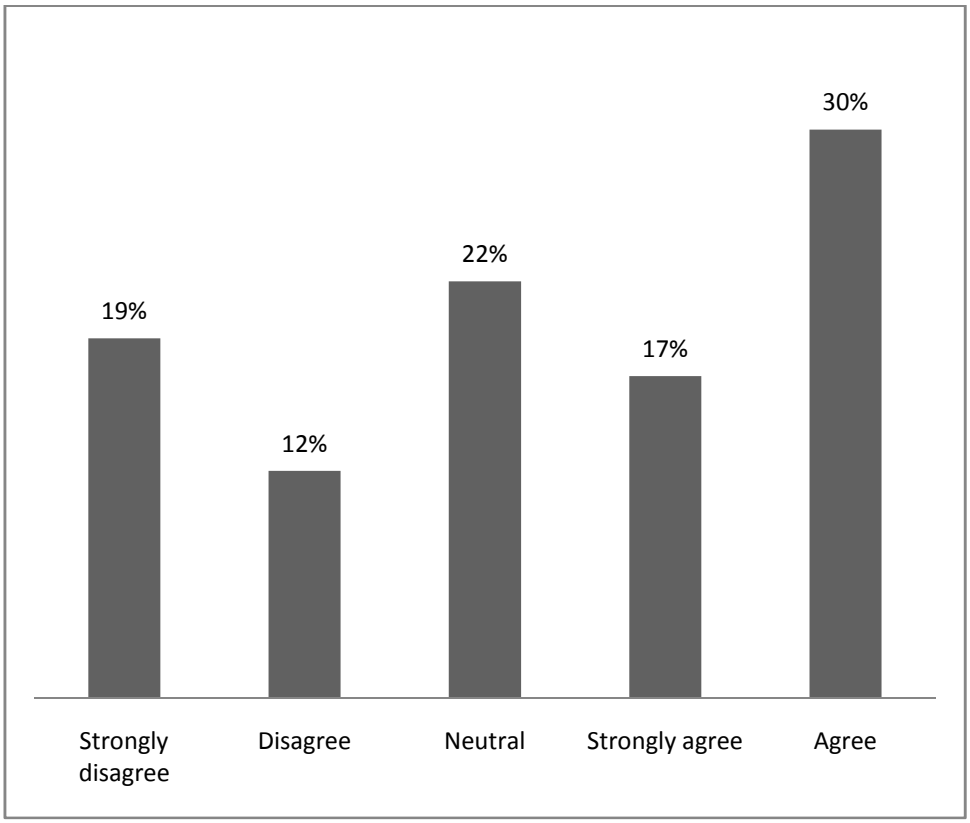
The data indicates that the majority of the participants expressed agreement that learning through virtual learning modes are not restricted by time and place.50% of participants (13% strongly agreed and 37% agreed) agreed that learning through mobile modes is not restricted by time and place. This showed that half of the participants in my study agreed that learning through virtual learning modes is not restricted by time and place. Adding the percentages of respondents who strongly disagreed and disagreed (21% + 19% = 40%). This indicates that 40% of the participants disagreed that learning through virtual learning modes is unrestricted. The 10% of participants who chose the neutral option reflect a relatively smaller proportion. It can be concluded that a majority of participants believe that learning through virtual learning modes is not restricted by time and place. This suggeststhat virtual learning modes offers flexibility and convenience for learning anytime and anywhere.

Teaching Learning Becomes Interactive and Interesting while Using it. In an interactive virtual classroom, real-time communication plays a vital role. Participants can engage in live discussions, ask questions and receive immediate

feedback from instructors and peers. This synchronous interaction creates an active and engaging learning environment that resembles a traditional classroom setting. The data obtained from the participants are presented in the figure below:

Figure 14

Teaching Learning Becomes Interactive and Interesting while Using it



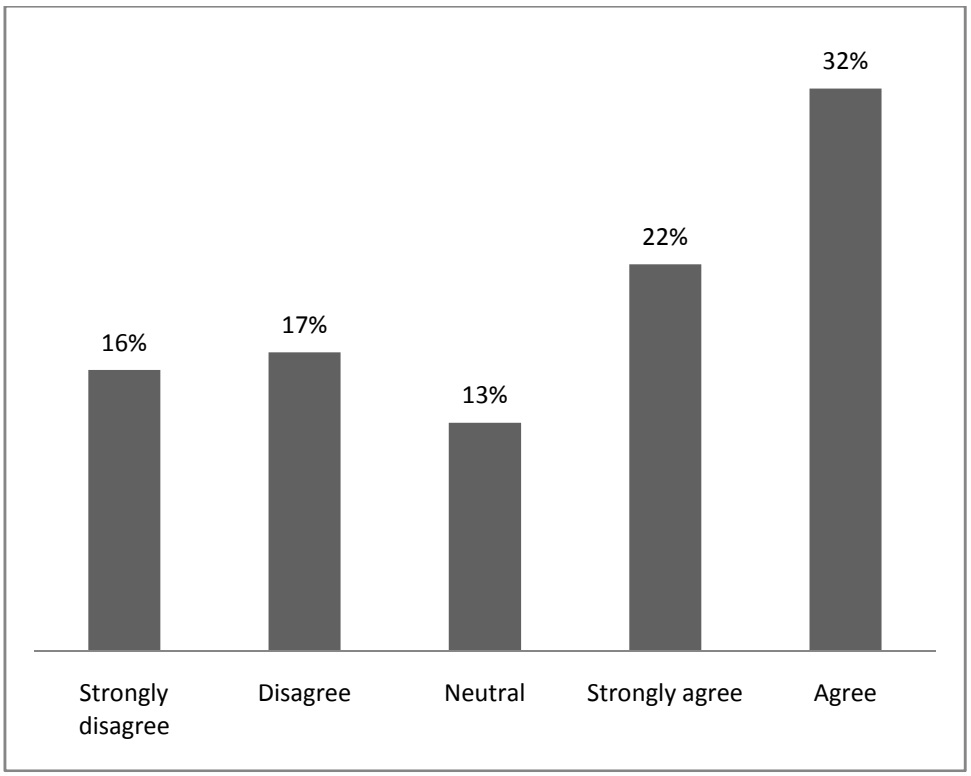
Based on the analysis of participant responses, it is found that a majority expressed agreement with the statement that teaching and learning became more interactive and interesting while using it. Specifically, 47% of the respondents (17% strongly agree and 30% agree) agreed with this notion. This indicates a significant proportion of participants holding a positive perception regarding the interactive and interesting nature of teaching and learning using the mentioned method.Conversely, 31% of participants (19% strongly disagree and 12% disagree) expressed disagreement with the statement, suggesting a notable proportion of respondents who did not share the belief that teaching and learning became more interactive and interesting using this approach. Additionally, 22% of participants provided neutral responses, indicating a lack of strong agreement or disagreement. Consequently, it can be concluded that a majority of the respondents held a positive perception regarding

the interactive and interesting nature of teaching and learning while learning through it.

The Virtual Learning Modes Are Easy to Use. The participants feel a sense of ease and comfort in using virtual learning modes. This means that it convenient and straightforward to navigate and utilize these modes for their learning purposes. The participants feel easy in using the virtual learning modes.The data obtained from the participants are presented in the given below:

Figure 15

The Virtual Learning Modes Are Easy to Use



The majority of the participants agreed that virtual learning modes are easy to use. 54% of participants (22% strongly agreed and 32% agreed) agreed that virtual learning modes are easy to use. This showsthat more than half of the participants agreed that virtual learning modes were easy to use.Adding the percentages of respondents who strongly disagreed and disagreed (16% + 17% = 33%). This suggeststhat about one-third of the participants disagreed with the notion that virtual learning modes are easy to use. The 13% of participants who selected the neutral option reflect a smaller proportion. It can be concluded that a majority of participants

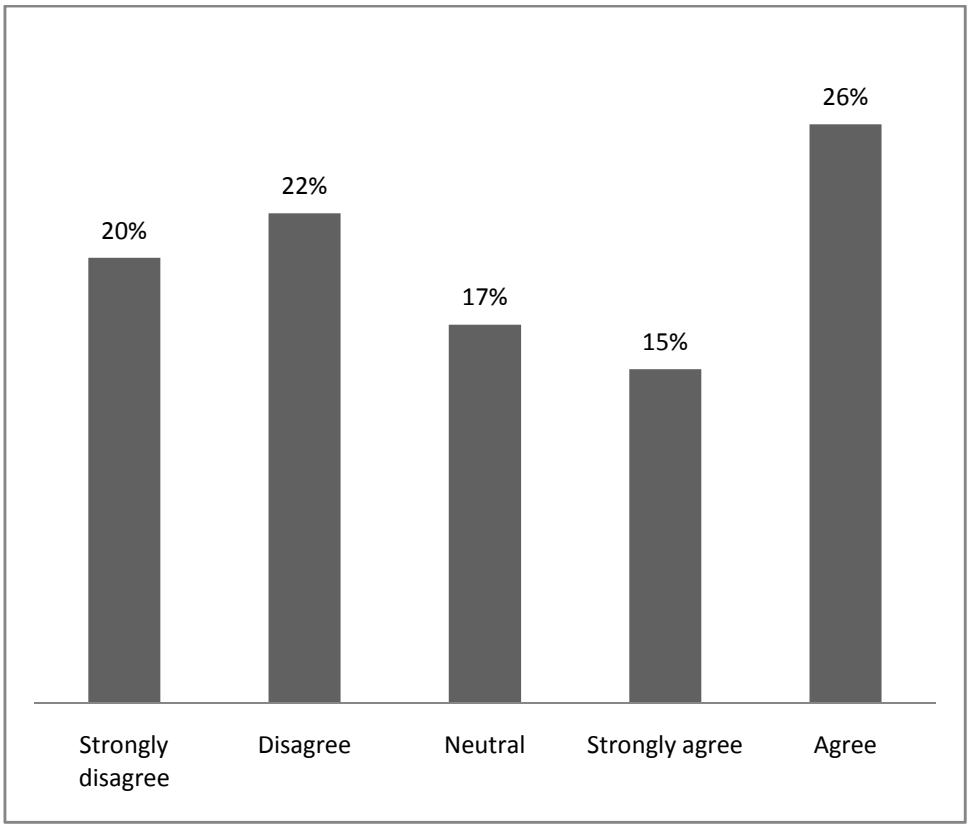
believed that virtual learning modes are easy to use. This suggests that virtual learning modes provide a user-friendly experience.

I Encounter Difficulties when I Use Virtual Learning Modes to Learn.

The participants sometimes feel difficulty when using virtual learning modes. During the study, participants reported facing occasional difficulties when using virtual learning modes. These challenges can vary from person to person. The data obtained from participants are given in the figure below:

Figure 16

I Encounter Difficulties when I Use Virtual Learning Modes to Learn



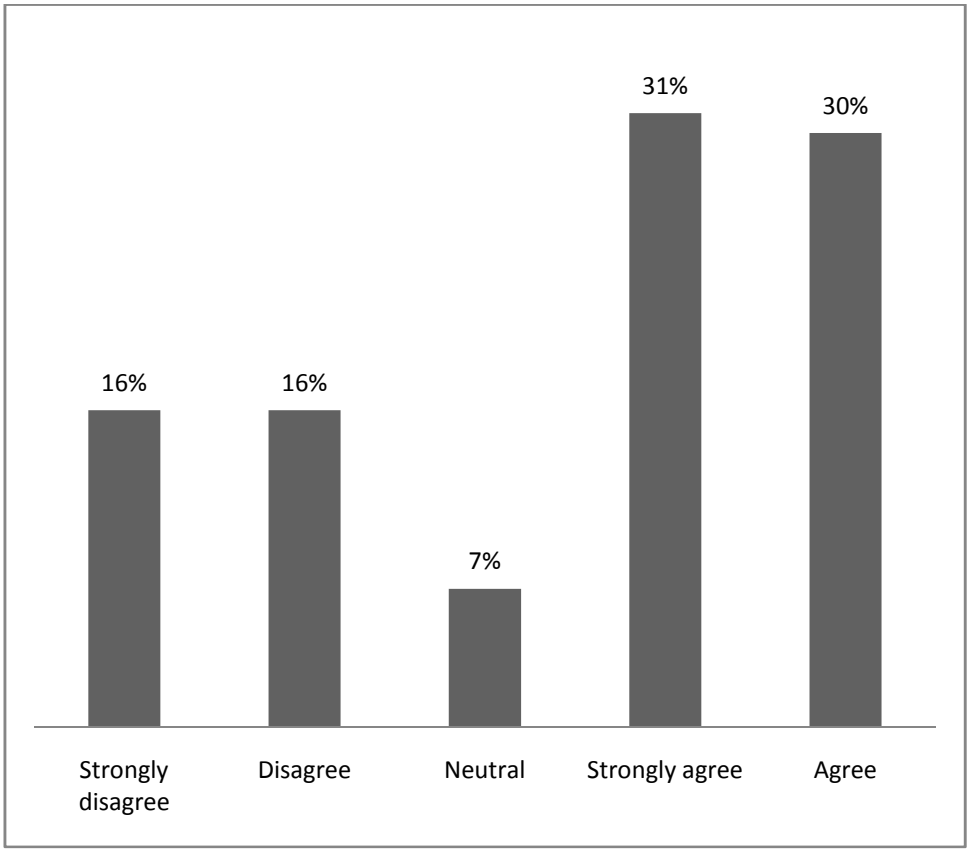
According to the data, most participants disagreed with encountering difficulties when using virtual learning modes. A significant proportion (20% strongly disagreed and 22% disagreed) found the virtual learning modes to be smooth and user-friendly, indicating a positive experience. However, some participants (15% strongly agreed and 26% agreed) faced challenges while using the modes. A smaller number of participants (17%) chose the neutral option, indicating a lack of strong agreement or disagreement. Overall, the majority of participants disagreed with

encountering difficulties. It can be concluded that a majority of participants disagreed with encountering difficulties.

Virtual Learning Modes Provide Many Kinds of Learning Styles. The virtual learning modes provide many kinds of learning styles.They offer a variety of learning styles to cater to different preferences and needs. These modes provide various tools, resources and activities that accommodate diverse learning methods. For example, some modes offer visual materials like videos and infographics for learners who prefer visual learning. The data obtained from participants are given in the figure below:

Figure 17

Virtual Learning Modes ProvideMany Kinds of Learning Styles



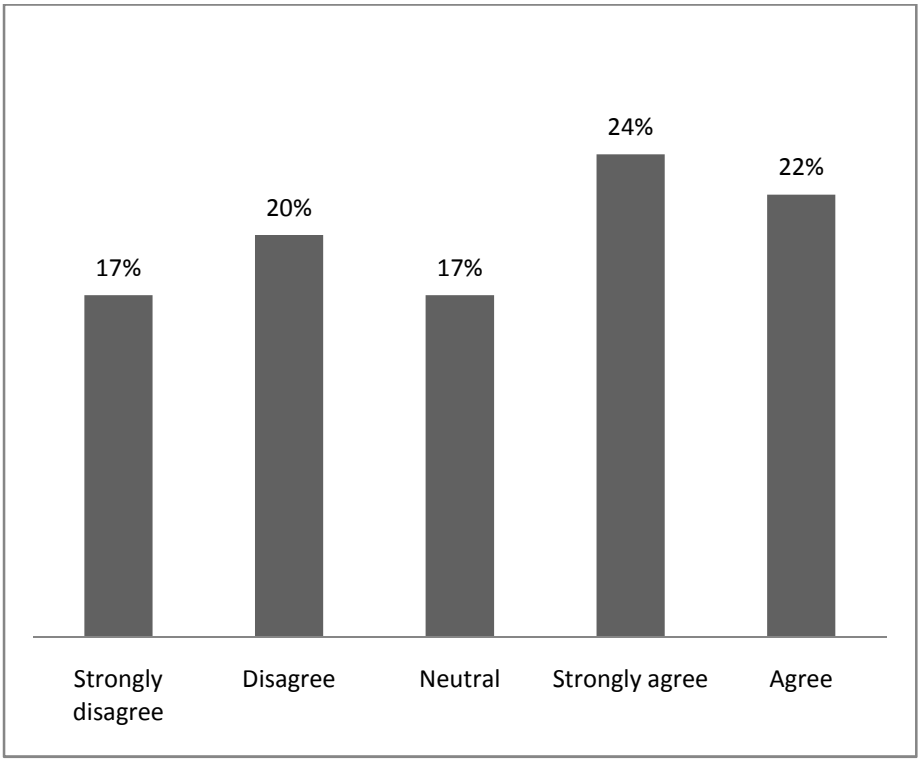
The data analysis revealsthat a majority of the participants strongly agreed that virtual learning modes provided many kinds of learning styles. Specifically, 31% of participants stated a strong agreement while an additional 30% stated agreement. This indicates that a significant proportion of participants perceived virtual learning modes to be versatile in accommodating various learning styles. In contrast, 16% of

participants stated a strong disagreement and an equal percentage of 16% stated disagreement regarding the notion that virtual learning modes provides many kinds of learning styles. This suggests that there was a minority of participants who did not perceive virtual learning modes to offer a diverse range of learning styles. Additionally, 7% of participants expressed a neutral stance, indicating a lack of strong agreement or disagreement on the matter.Considering these responses, it can be concluded that the majority of participants hold a positive perception regarding the ability of virtual learning modes to provide to different learning styles.

Virtual Learning Modes Have Positive Impact in my Learning. The virtual learning modes have either positive or negative impact in learning.The impact of virtual learning modes on learning depends on various factors including the individual's learning style, motivation and access to resources. The data obtained from participants are given in the figure below:

Figure 18

Virtual Learning Modes Have Positive Impact in my Learning



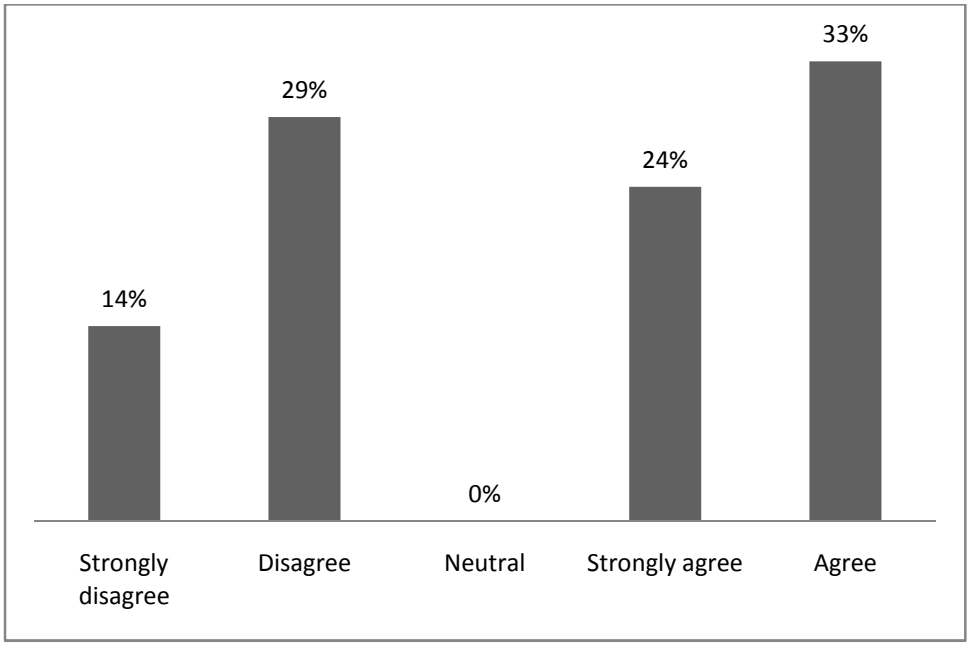
The data analysis indicates that a majority of the participants strongly agreed that virtual learning modes had a positive impact on their learning. Specifically, 24% of participants stated a strong agreement and an additional 22% stated agreement.

Collectively, these percentages signifies that a significant proportion of participants held a positive perception regarding the positive impact of virtual learning modes on their learning experiences.In contrast, 17% of participants stated a strong disagreement and 20% stated disagreement regarding the positive impact of virtual learning modes. Additionally, 17% of participants chose the neutral option. Considering these responses, it can be concluded that the majority of participants strongly agreed with the statement, indicating their belief that virtual learning modes indeed had a positive impact on their learning. This suggests that virtual learning modes are regarded as valuable tools that enhance the learning process and contribute to positive learning outcomes.

I Feel Being Given Ample Learning Opportunities to Learn. Virtual learning modes offer learners ample learning opportunities through a variety of features and functionalities. These modes provide a platform for interactive communication, such as video calls, which enable real-time engagement with instructors and peers. Learners can participate in discussions, ask questionsand receive immediate feedback, replicating the interactive nature of a physical classroom. The data obtained from participants are given in the figure below:

Figure 19

I Feel Being Given Ample Learning Opportunities to Learn

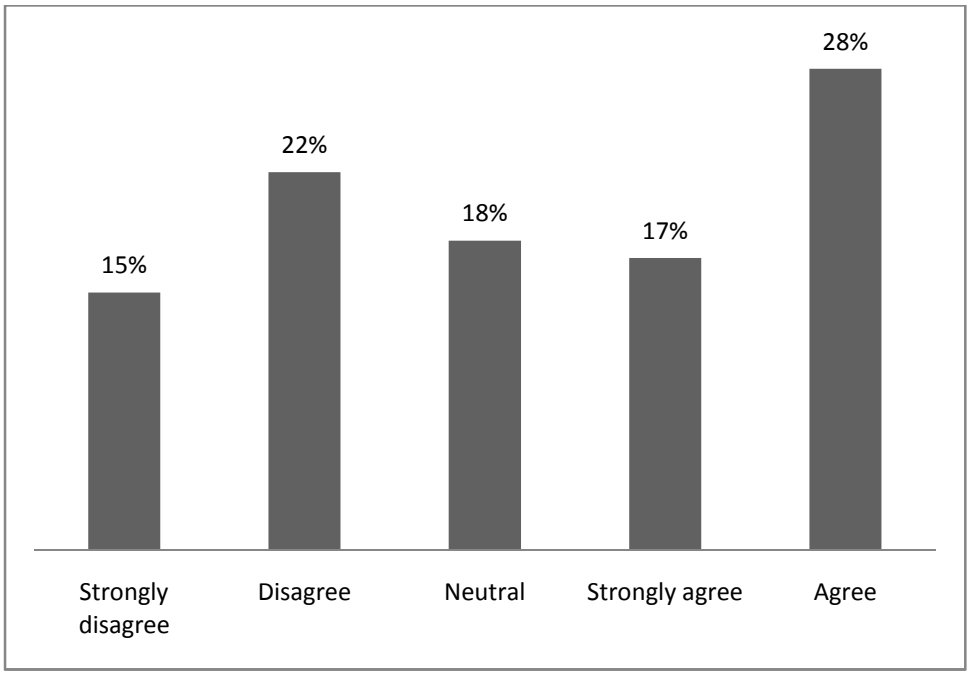


The data reveals that 24% of participants stated a strong agreement and an additional 33% stated agreement. Collectively, these percentages indicated that a significant proportion of participants held a positive perception regarding the availability of learning opportunities through virtual learning modes.The majority of participants agreed that virtual learning modes provide ample learning opportunities to learn.In contrast, 14% of participants stated a strong disagreement and 29% stated disagreement regarding the notion that virtual learning modes provide ample learning opportunities. There were no participants who chose the neutral option.Considering these responses, it can be concluded that the majority of participants agreed with the statement, signifying their belief that virtual learning modes indeed provide abundant learning opportunities.

I Don't Feel Isolated while Learning through it. The learners do not feel isolated while learning.Virtual learning modes offer various features that promote interaction and connectivity among learners. For instance, these modes provide discussion boards, chat functions, and video conferencing tools that enable learners to engage with instructors and peers in real-time. They can ask questions, participate in group discussions and collaborate on projects together.The data obtained from participants are given in the figure below:

Figure 20

I Don't Feel Isolated while Learning through it

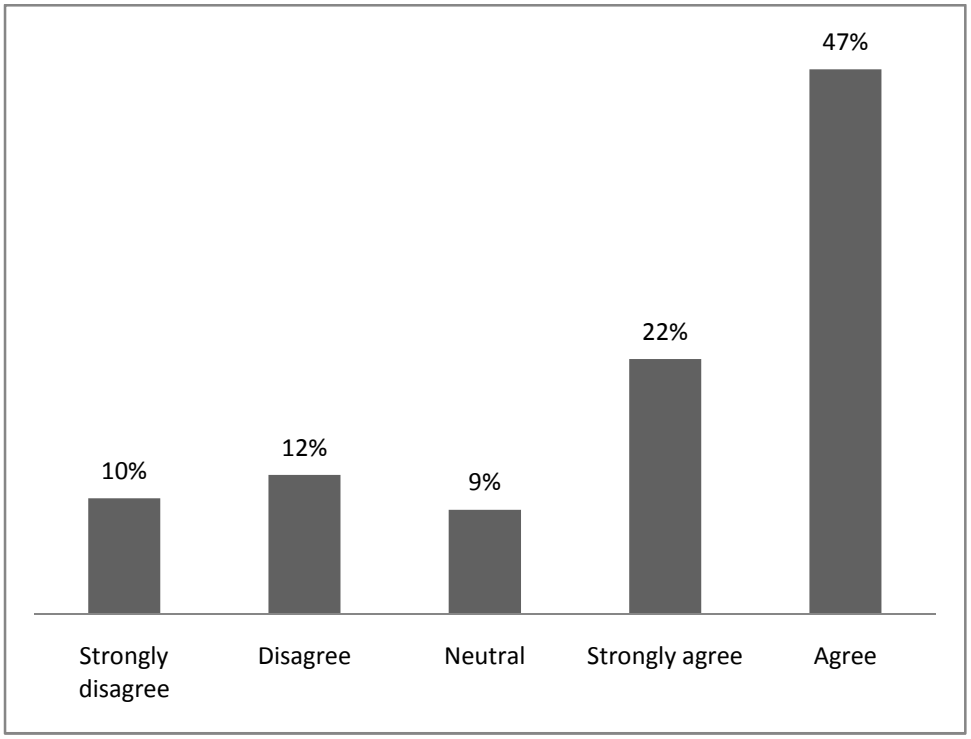


The data shows that 17% of participants stated a strong agreement and an additional 28% stated agreement. Collectively, these percentages indicates that a significant proportion of participants held a positive perception regarding the sense of connection and reduced isolation while using virtual learning modes for learning.In contrast, 15% of participants stated a strong disagreement and 22% stated disagreement regarding the notion that they did not feel isolated while learning through virtual learning modes. Additionally, 18% of participants chose the neutral option. Considering these responses, it can be concluded that the majority of participants agreed with the statement, signifying their belief that virtual learning modes providean environment that fosters connectivity and minimizes feelings of isolation during the learning process.

I Am Encouragedto Ask Questions if I Don't Understand. Virtual learning modes play a crucial role in encouraging participants to ask questions. These modes often provide various platforms and tools that facilitate communication and interaction between learners and instructors. Participants can ask questions directly to their instructors through chat functions, discussion boards or dedicated question and answer sessions.The data obtained from participants are given in the figure below:

Figure21

I Am Encouraged to Ask Questions if I Don't Understand



Based on the data presented in the figure, the majority of participants agreed that they are encouraged to ask questions if they do not understand while using virtual learning modes. Specifically, 22% of participants stated a strong agreement and an additional 47% stated agreement. Together, these percentages indicate a significant proportion of participants held a positive perception that they are encouraged to seek clarification by asking questions when they encountered difficulties or lack understanding.In contrast, 10% of participants stated a strong disagreement and 12% stated disagreement regarding the encouragement to ask questions if they do not understand. Additionally, 9% of participants chose the neutral option. Considering these responses, it can be concluded that the majority of participants agreed with the statement, indicating their belief that virtual learning modes providean environment where they feel supported and encouraged to seek clarification through questioning when needed.

Chapter V

Findings, Conclusions and Implications

This chapter includes findings, conclusions and recommendations. The data collected was analyzed, leading to several noteworthy findings, conclusions and recommendations. The findings have been deduced from the overall analysis of collected data. The conclusions have been derived from the major findings. Appropriate suggestions have been presented in recommendations section.

Findings

I have come up with the following findings on the based on the analysis and interpretation of quantitative data:

i. The majority of participants (92%) prioritized using Zoom rather than other modes for attending virtual classes.
ii. The data reveals that 84% of participants acknowledged that Zoom offers numerous learning opportunities during virtual classes.
iii. Seventy-one percent of participants preferred virtual learning modesfor learning.
iv. The majority of participants (70%) favored virtual learning modes because of its time saving nature.
v. A notable 29% of participants did not favor virtual learning modes because they cited the lack of internet access and technical issues.
vi. The majority of participants (50%) favored video call feature offered by virtual learning modes.
vii. The majority of participants believed that virtual learning modes are helpful for learning.
viii. Majority of participants (95%) experienced difficulties because lack of reliable internet connection.
ix. The majority of participants (80%) acknowledged that virtual learning modes save time.
x. The majority of participants held a positive perception regarding the time-saving aspect of virtual learning modes with 67% expressing agreement.
xi. The majority of participants (50%) agreed that virtual learning modes are not restricted by time and place.

xii. Forty-seven percent of participants agreed that teaching and learning becomes interactive and interesting through the use of virtual learning modes.

xiii. Fifty-four percent of participants believed that virtual learning modes are easy to useindicating that these modes provided a user-friendly experience.

xiv. The majority of participants (61%) agreed that virtual learning modes provides many learning styles.

xv. The majority of participants (64%) believed that virtual learning modes have positive impact on students' learning.

xvi. The majority of participants (69%) believed that virtual learning modes encourage to ask questions if they do not understand.

xvii. Zoom is widely regarded as the most effective virtual learning mode, offering abundant learning opportunities for participants.

xviii. Participants displayed a preference for virtual learning modes, particularly during the pandemic period. These modes enable learning anytime and anywhere, making them well-suited for distance education.

xix. Some participants considered virtual learning modesto be inferior to physical classes. They faced access of internet connections and technical issues.

xx. Participants favored specific features offered by virtual learning modes such as video calls, chat functionality, muting/unmuting options, screen sharing capabilities and whiteboard features.

xxi. Virtual learning modes have proven to be effective tools for learners, primarily due to their non-restrictive nature concerning time and location.

xxii. Virtual learning modes posed challenges for certain participants, particularly those from economically disadvantaged backgrounds. Limited access to Android devices and internet facilities can hinder their ability to fully engage with virtual learning platforms.

Conclusions

This thesis was carried out to find out the Bachelor level students' perceptions of learning English through virtual learning modes. Similarly, this thesis was conducted to identify the most suitable virtual learning modes for better learning. The research elicited quantitative data from the survey questionnaire and the qualitative data from the open-ended questionnaire.

Due to time saving nature of virtual learning modes, the participants preferred it. It could be conducted anytime and anywhere. It could be also used in pandemic situations as like COVID-19. Majority of the participants preferred Zoom while learning through virtual learning modes. It offers numerous learning opportunities to the students. Not only that, it is easy to use while conducting virtual classes. It also provides many features such as mute/unmute, screen sharing, video on/off and whiteboard therefore it has become the most suitable virtual learning modes for virtual classes. However, they are helpful for learning, the studentsfaced access of internet connections and technical issues while involving in virtual classes.Zoom is widely regarded as the most effective virtual learning mode, offering abundant learning opportunities for participants.Participants displayed a preference for virtual learning modes, particularly during the pandemic period. These modes enable learning anytime and anywhere, making them well-suited for distance education.

Implications

The recommendations of this study are categorized into three sections: policy-related, practice-related and further research-related. These sections provide a comprehensive approach to applying the findings of the study and offer guidance for various stakeholders involved in the field. They are presented as follows:

Policy Related.I have come up with the following recommendations to the concerned authorities:

i. The research findings provide valuable insights for educationists and curriculum designers in Nepal, assisting them in designing E-curriculum. By incorporating the findings into the curriculum development process, educationists could ensure that virtual learning apps are effectively integrated into the educational system.

ii. The research findings serve as a valuable resource for the government in formulating clear policies regarding the integration of Information and Communication Technology (ICT) in the education sector. By understanding the effectiveness and benefits of virtual learning apps, the government should develop comprehensive strategies that promote the use of technology in education.

iii. The research findings would be instrumental for the Education, Science and Technology Ministry in providing affordable E-Siksha Packs for students. The

ministry should identify suitable virtual learning apps and technologies that can be packaged and made accessible to students at an affordable cost, ensuring equitable access to quality education.

iv. While implementing virtual learning apps, it is crucial for the school management committee to consider various factors such as affordability, accountability, adaptability and accessibility.

Practice Related. By implementing the recommendations derived from the study, language teachers can enhance their instructional practices and optimize the use of virtual learning apps in their classrooms. These recommendations can provide valuable guidance on effective strategies, approaches and techniques to integrate virtual learning apps into language teaching.Some of the important practice-driven recommendations are as follows:

i. Virtual learning modes provide flexibility in terms of time and place, allowing students and teachers to engage in the teaching-learning process without restrictions.

ii. These modes facilitate collaborative learning, enabling interaction and collaboration among learners and teachers.

iii. Virtual learning modes offer learning opportunities comparable to face-to-face classroom settings, providing a similar quality of educational experience.

iv. Learners often experience increased motivation when using virtual learning apps as a tool for their education.

v. It is crucial to address the physical and mental discomforts faced by students and teachers during virtual classes, taking into consideration the sensitive nature of these issues.

vi. Investment in infrastructure and technology is necessary to ensure equitable access to virtual classes for both teachers and students.

Further Research Related. Every study has inherent limitations that arise from various factors such as the scope of the research, the methodology employed and characteristics of the population under investigation. It is widely recognized that no works can be considered comprehensive enough to encompass all aspects. Some of the important further research related recommendations are as follows:

i. This research was limited to Bachelor level students' perception towards learning English through virtual learning modes. Therefore, the researcher could conduct similar kind of research in basic and secondary level.

ii. This research was limited to Nepalgunj, Banke district. The researcher could investigate the perception of students in local areas.

iii. Additionally, the research was conducted using survey design therefore the researchers could conduct research using other kinds of research design.

iv. This research was based on perception of virtual learning modes so the researchers could study on particular virtual learning mode.

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Appendix I

Consent Form

You are cordially invited to participate in a brief questionnaire for the research study titled **Bachelor Level Students' Perceptions in Learning English through Virtual Learning Apps and Their Current Practices."** This study is being conducted as a requirement for the partial fulfillment of a Masters in English Education from Tribhuvan University, Kirtipur. The questionnaire aims to gather valuable insights regarding your perception of virtual learning apps as a means of language learning. Please be assured that this research is purely academic in nature.Rest assured that all responses provided will be treated with utmost confidentiality and will be used solely for research purposes. Your personal information will remain anonymous, and pseudonyms will be utilized to refer to students and campuses, ensuring the preservation of privacy. Furthermore, it is guaranteed that the research findings will not be published or disclosed without your explicit permission.

Researcher

Santosh Raj Tharu

M. Ed. Fourth Semester

University Campus, Kirtipur, Kathmandu, Nepal

Appendix II

Research Questionnaires

Demographic Information

Student's Name (optional):

Campus' Name:

Qualification:

1. Do you have experience of using virtual learning apps?

a. Yes b. No

2. If yes, how many times have you used virtual learning apps?

a. One time b. Two times c. Three times d. Four times e. More than four times

3. What type of virtual learning apps have you used?

a. Zoom b. Microsoft Teams c. Google Meet d. Skype e. Others

4. If you have used others, mention its name.

.....

5. Among these, which virtual appdo offer many learning purposes? Why?

.....

6. How many times have you used these kinds of virtual learning apps?

.....

7. Do you prefer using virtual learning apps? If yes, Why? If no, Why?

.....

8. Which features do you like most of virtual learning apps?

.....

9. Do you think virtual learning apps are helpful for learning?

a. Very helpful b. Helpful c. Undecided d. Not much helpful

10. Have you encountered any challenges while using virtual learning apps in learning?

a. .....

b. .....

c. .....

d. .....

e. .....

11. Are there any advantages of Virtual Learning Apps? If yes, mention.

a. .....

b. .....

c. .....

d. .....

e. .....

12. The respondents are kindly requested to answer these questions. There are five likert scales: SD (Strongly Disagree), D (Disagree), N (Neutral), A (Agree), and SA (Strongly Agree). Among them, you should select one response.

Statements	Likert scale					Mean
	SD	D	N	A	SA	
Learning through virtual learning apps save time.						
Learning through mobile apps is not restricted by time and place.						
Teaching learning becomes interactive and interesting while using it.						
The virtual learning apps are easy to use.						
I encounter difficulties when I use virtual learning apps to learn.						
Virtual Learning Apps provide many kinds of learning style.						
Virtual Learning Apps have positive impact in my learning.						
I feel being given ample opportunities to learn						
I do not feel isolated while learning through it.						
I am encouraged to ask questions if I do not understand.						

Appendix III

Research Questionnaires

RESEARCH QUESTIONNAIRE

You are kindly requested to participate in a short questionnaire for research study "Bachelor Level Students' Perceptions in Learning English through Virtual Learning Apps and Their Current Practices" for the partial fulfillment of Masters in English Education from Tribhuvan University, Kirtipur. It is completely based on academic research. This questionnaire is designed to identify your perception on virtual learning apps while learning through it. Your responses will be kept confidential and be used only for research purpose. I ensure that the results will not be published anywhere and anytime without your permission. Similarly, I ensure that the privacy will not be revealed by using pseudonym with name of student and campus.

Student's Name (optional):

Campus' Name: Madhyapaschim Multiple Campus, Nepalgunj

Qualification: B. Ed

1. Do you have experience of using virtual learning apps?

a. Yes b. No

2. If yes, how many times have you used virtual learning apps?

a. One time b. Two times c. Three times d. Four times e. More than four times

3. What type of virtual learning apps have you used?

a. Zoom b. Microsoft Teams c. Google Meet d. Skype e. Others

4. If you have used others, mention its name.

NO

5. Among these, which virtual learning app offers many learning opportunities? Why?

Zoom offers many learning opportunities because there are many features like video on\off, mute\unmute system, screen sharing etc.

6. How many times have you used these kinds of virtual learning apps?

More than four times

7. Do you prefer using virtual learning apps? If yes, Why?If no, Why?

No, most of the students don't have technical skills like video on/off and mute/unmute. Some of the teachers don't know how to share screen.

8. Which features do you like about the virtual learning apps?

There is silent environment while learning because there is mute/unmute system. If we want to ask questions, we can unmut

9. Do you think virtual learning apps are helpful for learning?

a. Very helpful b. Helpful c. Undecided d. Not much helpful

10. Have you encountered any challenges while using virtual learning apps in learning?

a. It creates inequalities between students who
b. study in village area. The poor class students
c. even middle class students could not afford
d. the internet.
e.

11. Are there any advantages of Virtual Learning Apps? If yes, mention.

a. The virtual learning apps allows learners to
b. access course materials from anywhere.
c. This eliminates the need to participate
d. in a physical class.
e.

12. The respondents are kindly requested to answer these questions. There are five likert scales: SD (Strongly Disagree), D (Disagree), N (Neutral), A (Agree), and SA (Strongly Agree). Among them, you have to select one response.

Statements	Likert scale					Mean
	SD	D	N	A	SA	
Learning through virtual learning apps save time.					✓	
Learning through mobile apps is not restricted by time and place.					✓	
Teaching learning becomes interactive and interesting while using it.				✓		
The virtual learning apps are easy to use.				✓		
I encounter difficulties when I use virtual learning apps to learn.				✓		
Virtual Learning Apps provide many kinds of learning style.				✓		
Virtual Learning Apps have positive impact in my learning.				✓		
I feel being given ample opportunities to learn.					✓	
I do not feel isolated while learning through it.				✓		
I am encouraged to ask questions if I do not understand.				✓		

Thank you for your valuable time and response.

Appendix IV

Research Questionnaires

RESEARCH QUESTIONNAIRE

You are kindly requested to participate in a short questionnaire for research study "Bachelor Level Students' Perceptions in Learning English through Virtual Learning Apps and Their Current Practices" for the partial fulfillment of Masters in English Education from Tribhuvan University, Kirtipur. It is completely based on academic research. This questionnaire is designed to identify your perception on virtual learning apps while learning through it. Your responses will be kept confidential and be used only for research purpose. I ensure that the results will not be published anywhere and anytime without your permission. Similarly, I ensure that the privacy will not be revealed by using pseudonym with name of student and campus.

Student's Name (optional):

Campus' Name: Mahendra multiple campus

Qualification: B. Ed

1. Do you have experience of using virtual learning apps?

a. Yes b. No

2. If yes, how many times have you used virtual learning apps?

a. One time b. Two times c. Three times d. Four times e. More than four times

3. What type of virtual learning apps have you used?

a. Zoom b. Microsoft Teams c. Google Meet d. Skype e. Others

4. If you have used others, mention its name.

N.A.

5. Among these, which virtual learning app offers many learning opportunities? Why?

Zoom. It offers many features.

6. How many times have you used these kinds of virtual learning apps?

More than four times.

7. Do you prefer using virtual learning apps? If yes, Why?If no, Why?

Due to virtual learning apps, we can learn te even at the time of covid-19.

8. Which features do you like about the virtual learning apps?

I like video calling features therefore teachers and students can meet at like physical class and learn about thing from our home.

9. Do you think virtual learning apps are helpful for learning?

a. Very helpful b. Helpful c. Undecided d. Not much helpful

10. Have you encountered any challenges while using virtual learning apps in learning?

a. Some telecom companies are providing e-
b. learning but it is not sufficient for
c. virtual. The internet doeshot work
d. smothly in remote areas becas because
e. of poor internet.

11. Are there any advantages of Virtual Learning Apps? If yes, mention.

a. There is time and money saves
b. be cause the Students can access.
c. course materials from the comfort
d. of their homes.
e.

12. The respondents are kindly requested to answer these questions. There are five likert scales: SD (Strongly Disagree), D (Disagree), N (Neutral), A (Agree), and SA (Strongly Agree). Among them, you have to select one response.

Statements	Likert scale					Mean
	SD	D	N	A	SA	
Learning through virtual learning apps save time.					✓	
Learning through mobile apps is not restricted by time and place.					✓	
Teaching learning becomes interactive and interesting while using it.				✓		
The virtual learning apps are easy to use.				✓		
I encounter difficulties when I use virtual learning apps to learn.				✓		
Virtual Learning Apps provide many kinds of learning style.				✓		
Virtual Learning Apps have positive impact in my learning.				✓		
I feel being given ample opportunities to learn.					✓	
I do not feel isolated while learning through it.				✓		
I am encouraged to ask questions if I do not understand.				✓		

Thank you for your valuable time and response.

Appendix V

Research Questionnaires

RESEARCH QUESTIONNAIRE

You are kindly requested to participate in a short questionnaire for research study "**Bachelor Level Students' Perceptions in Learning English through Virtual Learning Apps and Their Current Practices**" for the partial fulfillment of Masters in English Education from Tribhuvan University, Kirtipur. It is completely based on academic research. This questionnaire is designed to identify your perception about virtual learning apps while learning through it. Your responses will be kept confidential and be used only for research purposes. I ensure that the results will not publish anywhere and anytime without your permission. Similarly, I ensure that the privacy will not be revealed and pseudonym will be used with name of student and campus.

Student's Name (optional): Ridam Choudhary

Campus' Name: Mahendra Multiple Campus, Nepalgunj

Qualification: B.Ed.

1. Do you have experience of using virtual learning apps?

a. Yes ✓ b. No

2. If yes, how many times have you used virtual learning apps?

a. One time b. Two times c. Three times d. Four times e. More than four times ✓

3. What type of virtual learning apps have you used?

a. Zoom ✓ b. Microsoft Teams ✓ c. Google Meet d. Skype e. Others

4. If you have used others, mention its name.

No

5. Among these, which virtual appdo offer many learning purposes? Why?

Zoom, time saving

6. How many times have you used these kinds of virtual learning apps?

more than four

7. Do you prefer using virtual learning apps? If yes, Why?If no, Why?

Yes, time saving

8. Which features do you like most of virtual learning apps?

video on-off

9. Do you think virtual learning apps are helpful for learning?

a. Very helpful b. Helpful c. Undecided d. Not much helpful

10. Have you encountered any challenges while using virtual learning apps in learning?

a. network issue

b. technical problems

c. .....

d. .....

e. .....

11. Are there any advantages of Virtual Learning Apps? If yes, mention.

a. easy to use

b. accessible to all location

c. .....

d. .....

e. .....

12. The respondents are kindly requested to answer these questions. There are five likert scales: SD (Strongly Disagree), D (Disagree), N (Neutral), A (Agree), and SA (Strongly Agree). Among them, you should select one response.

Statements	Likert scale					Mean
	SD	D	N	A	SA	
Learning through virtual learning apps save time.	✓					
Learning through mobile apps is not restricted by time and place.		✓				
Teaching learning becomes interactive and interesting while using it.		✓				
The virtual learning apps are easy to use.					✓	
I encounter difficulties when I use virtual learning apps to learn.				✓		
Virtual Learning Apps provide many kinds of learning style.				✓		
Virtual Learning Apps have positive impact in my learning.			✓			
I feel being given ample opportunities to learn					✓	
I do not feel isolated while learning through it.			✓			
I am encouraged to ask questions if I do not understand.				✓		