

## Teachers' Perception of Using Tablets in Teaching and Learning Environments: A Qualitative Study

**Aishath Rifasa**

PhD candidate, College of Teacher Education

Southwest University, Chongqing, China

Correspondence concerning this article should be addressed to  
rifashaishath@gmail.com

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### Abstract

*New learning technologies are an important part of the 21st-century academic environment. Tablets are the newest mobile learning technology added to today's classrooms. This research concerns an island school's teachers' perception of using tablets in the classroom. Understanding the teachers' perceptions of using tablets in the teaching and learning environment is vital as this can provide information on future development and implementation. Four teachers were interviewed to gather the data. This study was qualitative and explored a constructivist approach. The findings are based on four themes identified from the participants' responses: utilisation of tablets in the present classrooms, benefits of using tablets in the classroom, challenges teachers face when using tablets in the classroom, and effective ways of utilising tablets to enhance teaching and learning. The study recommends different approaches to improve the use of tablets in such environments.*

Keywords: Tablet computers in education, Educational technology, Teachers' attitudes, teaching practice, Educational technology problems

## Introduction

Over the past twenty years, technology has progressed in the education sector. Integration of technology into the learning environment enhances the development of the process skills of students (Boholano et al., 2021). By using technology, teachers can effectively deliver their lessons to cater to the different learning styles of students. Teachers use different pedagogical approaches with educational technology to improve student learning. Student-centered learning has a higher priority today, and it is being carried out with the implementation of educational technology in the classroom. In a technology-integrated learning environment, students can explore themselves and take responsibility for their learning. According to Bitner and Bitner (2002), 'using technology as a teaching and learning tool in the classroom does so to an even greater extent since it involves both changes in classroom procedures and the use of often unfamiliar technologies' (Bitner and Bitner 2002).

However, the use of technology such as computers has expanded at all school levels, and a modern technological device, named a 'tablet computer,' has entered into the teaching and learning environment. Tablets are electronic mobile devices, smaller than laptops and bigger than smartphones, with a touchscreen display. Zhang and Nouri (2018) conducted a systematic review highlighting the role of tablets in learning and teaching. In this technologically focused world, the tablet plays a vital role in the education system. It provides learning opportunities for students with different learning styles through their many applications and inclusion of interactive media. The interaction of the graphic application of the tablet enables visual learners to create multimedia schemes and think visually and watch videos (Zhang & Nouri, 2018). Zhang and Nouri further described that tablets contribute to visual learners' learning opportunities and positively affect auditory learners, such as by delivering audio messages to students.

There has been a major change in the Maldivian education system in the last few years with the implementation of a new national curriculum. This curriculum emphasizes integrating technology in the learning environment under the key competency, 'Using technology and media' (National Institute of Education, 2015). This encourages schools to digitalize by integrating technology into the classrooms.

In 2017, the Minister of Finance announced that the government would digitalize all the schools and that school bags would be replaced with tablet computers by the following year. In addition, the minister revealed that approximately 9.97 million USD would be allocated for school digitalization projects in the proposed budget for 2018 (Corporate Maldives, 2017). The ministry tasked the Maxcom company with distributing the tablets to every school. Over 70,000 tablets have been imported into the Maldives throughout this process. The main objectives of this project are to offer possibilities for students to be engaged in a technology-enhanced environment that fosters learning, enhances teaching, and develops essential life skills.

The Ministry of Education conducted online training programs for teachers to prepare them to use tablets in the classrooms. Moreover, wireless internet connections were set up in all public schools with the help of a leading telecommunication company, Dhiraagu. The distribution of tablets to the students began at the start of the second semester in 2018, with most schools beginning to use tablets the same year (Ibrahim, 2018).

However, some schools have not implemented tablets due to various reasons. This research aims to understand teachers' views on using tablets in classrooms, as well as the benefits and challenges they face in the teaching and learning environment. Studies reveal that, in some instances, students use tablets for entertainment rather than using them for their learning. Fabian et al. (2018) showed that students who play games and use tablets to use social networking sites waste valuable time. As a result, students are often distracted during instruction due to the fun features of tablets (Meo and Martí-Ballester, 2020).

### **Statement of the problem**

With educators constantly looking for new ways to improve pedagogical practices through technology, tablet integration into the classroom is becoming increasingly common (Kim et al., 2019). Although much research has been done on the effects of tablets on education, little is known about how teachers feel about using tablets in the classroom. Understanding how they view and adjust to using tablets is essential for developing successful implementation strategies and guaranteeing the devices' successful integration into educational settings as technology advances. Thus, a qualitative study that explores teachers' perspectives, attitudes, and experiences with tablet usage is required to give educational practitioners, policymakers, and researchers useful information.

In this technologically enhanced world, children are exposed to technological devices at home and are often vulnerable to the negative side of technology. Mobile tablets are considered used in education, and recently, this device has been implemented in Maldivian schools. Using tablets in the classroom is challenging for teachers in many ways. Teachers struggle to implement tablets properly in the classroom due to a lack of knowledge. In addition, they face difficulties in managing the classroom as students do not always use tablets properly. As students are vulnerable to the negative use of technology, they misuse tablets rather than use them for learning, creating a negative impact on student learning. This study is done to address the above issues and find solutions.

### **Objective of the study**

This study aims to acquire teachers' thoughts on implementing tablets in Maldivian classrooms. The core objectives of this study are to explore how tablets can be used efficiently to improve teaching and learning environments and to identify the benefits and challenges of using tablets in teaching and learning environments. The benefits and challenges included in the study are only from the teachers' perspective.

This study focuses on three areas: the teachers' perception of using tablets in the Maldivian classrooms, the benefits of implementing tablets according to their perception, and the challenges they encounter when implementing them. The three research questions that emerge to guide this study are as follows:

1. How can tablets be used efficiently to improve the teaching and learning environment?
2. What are the teachers' perceptions of the benefits of using tablets?
3. What are the teachers' perceptions of the challenges to implementing tablets?

The research is significant for both students and teachers, as it will guide students on effectively using tablets in the classroom. Teachers are crucial stakeholders who must clearly understand tablets and their uses to improve the teaching and learning

environment. A positive learning environment for students can be achieved if teachers are familiar with tablets and have a clear understanding of their uses. Conversely, if teachers lack knowledge and are not aware of how to implement tablets correctly, schools may not achieve the implementation objectives of tablets, leading to problems in the learning environment and negatively impacting student learning. Therefore, this study will enlighten teachers about the effective utilization of tablets in their teaching and ways to manage the challenges they encounter while implementing them in the classroom.

### **Scope and limitations**

Four teachers from the Maldivian School, who teach at key stage two, have been chosen to conduct this study. The participants for the study were selected based on a minimum of two years' experience in teaching and experience in using tablets in the classroom.

However, there are some limitations that came across in this study. Since it was conducted in one school, the samples might not be representative of the population at large. Relevant data might not be established because the researcher selected participants according to their teaching experience. Interviews were the only technique used to collect data for this study. Other qualitative data collection techniques, such as classroom observations, could have improved the dataset.

## **Literature Review**

This literature review related to the study is designed to provide a theoretical framework and analysis of previous and recent research about implementing tablets in the classroom. It is divided into four sections. First, a theoretical framework. Second, the section is based on the overview of tablets in teaching and learning environments. Third, advantages and drawbacks of using tablets in the classroom are discussed. Fourth, a discussion of teachers' perceptions of tablet implementation in the classroom.

### **Theoretical framework**

Constructivism is based on the belief that people learn by building their own knowledge and understanding from their own experiences and by reflecting on those experiences. According to Adams and Burns (1999), in a constructivist classroom, the role of the teacher is transformed from a knowledge provider to a facilitator who guides the students in building their own knowledge. When conducting online games and activities using tablets in the classroom, the teacher acts as a facilitator, guides the students, and helps them learn on their own. This results in a student-centered learning environment. Adams and Burns (1999) further describe that knowledge is built through different types of tools, resources, encounters, and settings. Therefore, by using tablets in the classroom, the students build their knowledge through relevant information from the internet and videos.

Much of the research in educational technology indicated that using computers in educational settings improves student learning and plays a key role in delivering knowledge (Koç, 2005). According to Shah (2019), in a constructivist classroom, students are actively involved in sharing ideas, discussing concepts with their peers, and questioning one another, leading to an increased awareness and understanding of their own learning processes. Using mobile learning technology therefore enables

the creation of a constructivist learning environment where both social and cognitive constructivism occur. Tablets in an educational setting enable students to actively participate in the learning process. As a result, more appropriate and meaningful learning can be obtained.

These research findings match the constructivist approach to learning, where students actively participate in the learning process by collaborating with their teachers and peers. Adopting tablets in the classroom creates a student-centered learning environment where the teacher is the facilitator and all collaborate to construct knowledge.

### **Tablets in the teaching and learning environment**

Tablets have become a key issue of interest in education to boost learning. They are easy to use and have the capacity to store huge amounts of data that can be used in the classroom. According to Samuel (2021), because of their versatility, low cost, and interaction features, tablets have the potential to have a massive effect on reading. Teachers use tablets in the classroom to deliver their lessons and carry out different pedagogical activities. Using innovative pedagogical methods, teachers use tablets to change and reshape students' learning (Major et al., 2017).

Research has been done on the use of tablets in the teaching and learning environment. They are used in the instructional process to provide a positive learning environment where students show their interest and engage in the lesson. Major et al. (2017) demonstrate that tablets in the classroom setting increase students' participation and engagement in the lesson. Tablets are used in the instructional process to provide a positive learning environment where students show their interest and engage in the lesson. Studies reviewed that tablets in the classroom setting increase student participation and engagement in the lesson (Haßler, Major, & Hennessy, 2016). According to Ulas et al. (2019), using tablets in the learning environment can improve students' learning. While talking about the different instructional uses of tablets in the classroom, Cummings and Hill (2015) state that tablets can be used for different instructional tasks, but it may not be effective to use them in every aspect of the classroom.

Students are one of the most important stakeholders who utilize tablets in a tablet-implemented classroom. Recent research done by Ditzler, Hong, and Strudler (2016) on the utilization of tablets in the classroom showed all students who took part in the study used the tablets for their classroom learning and homework. In addition to this, while observing the classroom, Ditzler, Hong, and Strudler (2016) found that students used their tablets during the whole class session to work on their projects, and they were interacting with each other by sharing ideas. Moreover, their study found that students were very satisfied to use tablets for their learning.

### **Advantages and drawbacks of using tablets in the classroom**

Using tablets in the classroom has numerous benefits for students and teachers. Teachers carry out different collaborative learning activities using tablets, such as online collaborative games and activities for students. According to Fabian et al. (2018), teachers can use tablets to conduct activities with the students by carrying out short surveys and quizzes on mathematical simulations, which students can enjoy and easily understand. According to Enriquez (2010), tablets improve students' engagement with the lesson and positively affect students' learning and performance.

According to Li et al. (2022), the main benefits of using tablets are improving creativity and metacognition by using software applications, saving costs for students by using digital content, and improving interaction between students and teachers and peers within the school environment.

Integration of tablets in the learning environment, on the other hand, has various drawbacks. The most common difficulty teachers face when implementing tablets in the classroom is their lack of knowledge about the tablet. This was addressed in the research problem of this study. Some teachers do not know how to use it in their teaching. This was addressed in the research problem of this study. According to Ditzler et al. (2016), the teacher's level of knowledge and comfort has a major effect on how tablets are utilized in the classroom, and the lack of familiarity of the teacher with tablets has been seen as complicated.

### **Teachers' perception of using tablets in the classroom**

Research on tablets found that teachers have both positive and negative perspectives on using tablets in the classroom. Although the integration of tablets in classrooms has increased in recent years, research on teachers' perceptions of their use remains limited. While few studies have examined this topic, Gökmen et al. (2018) provide some insight into teachers' attitudes and experiences with tablet use in education. Their study highlights that teachers believe tablets save time by enabling them to finish the lesson within a short period, have positive learning outcomes, and allow subjects to be examined, all helping to increase student success.

The same study (Gökmen et al., 2018) further indicates that teachers are not interested in using tablets in the classroom. According to the teachers who participated in their study, the reasons for not using tablets in the classroom were that they lacked the knowledge to use the tablets in the classroom, and according to their viewpoint, tablets have negative effects on classroom management as students misuse them by playing games in the classroom. These findings suggest that, although some information exists, further research is needed to fully understand the factors influencing teachers' adoption and effective use of tablets in teaching and learning environments.

## **Methodology**

### **Research design**

This study uses a qualitative model, a case study approach, to investigate a specific event or entity in its real-world setting. This method involves in-depth research using interviews, observations, and document analysis. Case studies are crucial for understanding unique events, investigating relationships of cause and effect, and formulating hypotheses. They provide a comprehensive perspective, allowing researchers to analyze multiple factors within a defined framework. Through careful data analysis and interpretation, case study research is essential for theory creation, practical applications, and decision-making in various fields like psychology, sociology, business, and education. From the different approaches to qualitative research described by Creswell (2013), the case study is closely oriented with the aims and objectives of this research and focuses on the benefits and challenges teachers face when implementing tablets in their classrooms.

## **Population and sampling**

The study's target population is all the teachers of a Maldivian school. The school's easy access made it an ideal choice for the study. Since this is small-scale qualitative research, the study's participants were narrowed down to four teachers teaching key stage two. The selection of teachers was based on their qualifications and number of years' experience. They needed at least a diploma certificate in primary teaching with a minimum of two years' experience. As tablets were introduced in the Maldivian schools in 2018, the participants needed to have experience teaching with tablets as well.

## **Data collection**

Qualitative research studies often include several data sources such as interviews, participant observations, field notes, documents, conversations, accounts, memos, life histories, artifacts, and diaries (Creswell, 2012). For this study, interviews are used as a primary data source.

In-depth interviews were used to gather data for this study since they allow the participants to share their views, attitudes, and behaviors. The research questions were answered in face-to-face interviews with the participants. The interviews for this study were conducted at places of the participants' choosing. They were informed of the structure of the interview and how it would be carried out. The purpose of the study was clearly explained to the participants before data collection began, and they were given the opportunity to ask questions to avoid misconceptions. In line with general ethical guidelines for research involving human participants, including informed consent and voluntary participation, written consent was obtained from all participants prior to their involvement in the study.

The interviews were semi-structured, using open-ended questions allowing respondents to freely express their views and ideas. Core questions were asked according to the interview guide created in advance. In addition, probing questions were used in the interview to better understand the participants' viewpoints. The interviews ranged from 30 to 45 minutes. Additional notes were taken while carrying out the interview. With the permission of the participants, audio-recorded interviews were carried out. Each interview was transcribed, and the data were arranged by giving a reference code to each participant. This was done to secure the anonymity of the participants.

## **Data analysis**

The data mainly include the teachers' perception of the benefits and challenges of using tablets in the classroom. Interviews with participants were conducted and transcribed. The transcribed data were sorted for analysis, and the participants' responses were coded manually. According to Creswell (2012), the coding process is the starting point for data analysis. Coding can be defined as using descriptive words to mark data segments (Creswell & Creswell, 2017).

The research questions were answered, and themes were generated through categories that were established according to the similar codes discovered from the participants' responses. After that, themes were identified by categorizing the codes. A total of four themes were discovered from these categories: utilization of tablets in current classrooms, benefits of tablets, challenges for teachers, and effective ways of utilizing tablets to enhance the teaching and learning environment.

## **Ethical considerations**

Ethical issues are involved in every study, irrespective of the type of research. A relevant ethical structure for the study was established before the data collection. It contains documentation such as information letters and consent forms.

Ethical approval for this study was granted by the Maldives National University Research Ethics Committee, under a general (blanket) approval for educational research involving minimal risk to participants. An approval letter for collecting information from schools was received from the Ministry of Education. Before collecting data, a letter was sent to the school requesting permission to conduct the research using the teachers of that school. The approval letter from the Ministry of Education and an information sheet and consent forms were also attached. The data collection was carried out only after receiving the approval letter from the school.

Participants were provided with necessary information about the study before each interview to minimize any potential psychological or emotional discomfort. Consent was obtained through a consent form, and participants could withdraw at the beginning of the interview if they didn't want to participate. Personal information was kept confidential, and permission was obtained orally and on consent forms before recording. Recordings were secured with a password and saved in a separate folder. Participants were given a corresponding alphabetical letter code, ensuring their identity was not revealed.

## **Results and Discussion**

This study aimed to understand teachers' perceptions of using tablets in the classroom. Interviews with four teachers were conducted to answer research questions. Four main themes emerged from the data: utilization of tablets in current classrooms, benefits of tablets, challenges for teachers, and effective ways of utilizing tablets to enhance the teaching and learning environment. I will deal with each in turn. Sub-themes were developed under each main theme, focusing on the teachers' perceptions of the benefits and challenges of using tablets, their methods of utilizing them, and their recommendations for the future. The findings provide valuable insights into the use of tablets in the classroom.

### **Utilisation of tablets in the present classroom**

As mentioned in the introduction, tablets have been implemented in Maldivian classrooms since 2018. This theme includes the participants' perceptions about using tablets in the classroom and how they use them in their present classrooms. The sub-themes here are collaborative tasks, ICT integration, and inquiry-based learning.

#### *Collaborative tasks*

When technology is integrated into the classroom, teachers are obviously responsible for facilitating innovation. Supported by the literature given in this paper about tablets in the teaching and learning environment, this study found that teachers use tablets in their instructional process to carry out different collaborative activities. These include online games, quizzes, and other interesting activities that are used to carry out an engaging lesson. While answering the researcher's question, the participants explained how tablets are used in the classroom.

Participant B said,

Normally I use it to conduct online games like Kahoot!, group activities [...].

Participant C,

Normally for science, social studies, and math, these subjects carry out the quizzes [...].

Participant D,

Tablets allow students to work together more effectively. For example, I assign them research projects where they must use tablets to gather information and then present it as a group activity. This enhances teamwork and engagement.

### *ICT integration*

The data collected by the study reveals that teachers have positive thoughts about using tablets in the classroom and use them to carry out different collaborative activities. While expressing thoughts about implementing tablets in the classroom, participant B stated,

What I believe is, tablets are a great device, a helpful tool for teaching and learning, if it is used appropriately. As we all know, there are two sides to everything, and so are the tablets. The ways of using it measure the effectiveness.

Participant D said,

With tablets, I can integrate more digital tools into my lessons, such as educational videos and interactive learning apps. This allows me to cater to different learning styles.

### *Inquiry-based learning*

Inquiry-based learning encourages students to explore the topics themselves by sharing their ideas and questioning about the topic. Using tablets in the classroom encourages students to explore and find information independently. Findings from the study indicate that teachers use tablets in the classroom to carry out inquiry-based lessons. While answering the question about the utilisation of tablets in the classroom, participant C said,

They can search on their own and they can get the information on their own [...].

In addition to this, participant C also explained how they carried out the lesson. While discussing this, they explained,

Once I did an inquiry based learning project in a social study subject, about a country. So, what I found is that the information that I have collected is different from the students. So, if I give them, they can collect more information. So, like that about that country, they have collected as much information as they want. Like, their culture, their values, how they treat the people, and their behavior—everything they collected. So, what I found is, in a teaching and learning environment, this is the best way that we can use tablets in the classroom.

While answering this question, other participants also supported this by mentioning that they allow students to use tablets to find information independently. Therefore, it can be concluded that teachers carry out inquiry-based learning in their lessons. According to Harwood et al. (2015), learners can be motivated by their willingness to use tablets, enhancing their sense of agency as they seek their choice of study.

The study's findings indicate that in some schools in the Maldives, teachers use tablets in the classroom to conduct collaborative activities, integrate ICT during the lesson, and carry out inquiry-based learning activities.

## Benefits of using tablets in the classroom

Implementing tablets in the classroom has several benefits as mentioned in the literature review. This theme includes the participants' perception of the benefits of using tablets in the classroom. The sub-themes that emerged from this theme are a positive learning environment, a constructivist classroom, and a convenient method.

### *Positive learning environment*

According to three participants, tablets in the classroom enable them to carry out interesting lessons by using different online and collaborative activities. Using various teaching strategies and pedagogical activities in the classroom, students will find lessons more interesting, improving their motivation and engagement throughout the lesson. The findings indicate that using tablets in the classroom enhances students' interest, engagement, and motivation towards the lesson by participating in online games and other collaborative activities. Therefore, this creates a positive learning environment where students can actively engage in the lesson. Participant B stated that,

students are motivated when we use tablets in the lesson, like playing online games and doing collaborative work. They show a lot of interest in these activities, and they create a very positive and fun learning environment where students enjoy their learning. Students show their interest in the lesson, and it helps the teacher to gain their attention as well.

Participant C said,

one quiz I conducted in science. So, it was really interesting; you know, the students were also very interested.

Furthermore, while talking about the benefits of using tablets in the classroom, participant A said,

We have a lot of benefits, like they have more interest, they are more engaged in the lesson [...].

Research on tablets in education has found several benefits for students learning. According to Fabian et al. (2018), tablets can enhance students' engagement and support interactive learning experiences. In classroom settings, using tablets helps learners focus on lessons and actively participate in activities, thereby improving attention and interest in the subject matter. The most obvious advantage of using advanced technology in the classroom is the opportunity to inspire students and provide an extremely customized educational experience (Li et al., 2022). Enhancing student motivation, gaining the attention of the students, and students actively participating in the learning process are some of the features of a positive learning environment. Therefore, this study reflects some aspects of previous literature, that using tablets in the classroom creates a positive learning environment.

### *Constructivist Classroom*

Supporting the study's theoretical framework, the findings indicate that using tablets in the classroom creates a constructivist learning environment where students construct knowledge on their own by using tablets. This study found that using tablets in the classroom enables students to find information independently to use in their projects. While discussing this, participant B said,

students take the responsibility of their learning when they use these tablets. That means that the students search for information, collect information, and use that in their projects and posters [...].

It has been noticed that teachers provide names and links of websites that the students can use to search for information. While discussing this, participant B stated that,

In my lesson, before giving the task to students, I give them all the URLs and names of the websites that they can use to search for information. I usually share the URLs through Google Classroom. So, they can search only using those links or websites. And I always monitor them, watch them closely while they are using the tablet.

Furthermore, participant B explained,

they read those and find the required information on their own. And I believe this is very beneficial for students as they will gain new knowledge through this.

Participant C said,

students get involved with that, and I found it very interesting and very good for the lessons even [...].

From these findings, it can be concluded that using tablets in the classroom supports the constructivist approach by enabling a constructivist learning environment for students to build their knowledge.

### *Convenient method*

Tablets are handy, and they can be used anywhere and anytime. In this technologically enhanced world, tablets play a vital role in the education sector, from reading books to finding information. Using tablets in the classroom enables teachers to save time while conducting different activities in the classroom. As mentioned earlier, tablets enable teachers to create and conduct different online activities in the classroom, saving time spent manually creating those activities and games.

The results of this study indicate that using tablets in the classroom saves teachers time when carrying out activities in the lesson. Teachers use tablets during the lesson to explain, show pictures or videos, and carry out online games and other activities.

Discussing this point, participant A stated,

real pictures they can see instead of teachers just pasting a picture on the board, they can see it on the ... I mean using a tablet. So, a lot of time can also be saved from teachers' side.

Participant D agreed:

Carrying heavy textbooks is a burden for students. Tablets provide easy access to reading materials, making learning more efficient.

Participant B said,

it is time-saving when we use tablets in the classroom [...].

Tablets allow teachers to minimise paperwork and can be used for reading anywhere and anytime. As previously mentioned, teachers can prepare and share worksheets with Google Classroom. They do not have to carry all printed materials to the classroom. Today, teachers often use tablets instead of printed materials.

While discussing this, participant A stated,

Teachers don't have to carry a stack of papers to the classroom. So, it reduces the paperwork that we have to do [...].

Participant B said:

It also reduces paperwork. That means instead of giving worksheets, I mean hard copies, I am sharing those worksheets through Google Classroom so students can access it [...].

This study reveals several benefits of using tablets in the classroom. It helps to create a positive learning environment where students are motivated and actively engaged in the lesson, and creates a constructivist learning environment where students work collaboratively with teachers to build their knowledge. Furthermore, the study's findings indicate that using tablets in the classroom helps teachers save time and reduces paperwork.

### **Challenges for teachers in using tablets in the classroom**

The sub-themes developed from the challenges for teachers in using tablets in the classroom are as follows: misuse of tablets; lack of awareness about tablets; poor internet connection; and restricted applications.

#### *Misuse of tablets*

Findings aligned with other studies, revealing that students misuse tablets in the classroom. According to the participants, many difficulties arise regarding students' use of tablets for activities other than learning. According to the teachers, some students use the tablets to play games, take photos, or adjust device settings during class, which distracts them from the lesson, interrupts the flow of teaching, and can divert other students' attention.

Participant A stressed,

One thing that I have faced is that sometimes these students use tablets when they don't need them, like in other classes. They take the tablet, and they play with it. So, that is one challenge that we face. And another thing is that some work they do is unnecessary; sometimes they play unnecessary things also. The teacher always has to be aware in the classroom, what they are doing. The teacher always has to check what they are doing.

While talking about the challenges they face, participant B stated,

Sometimes the students, some students, get off task while using these tablets. They may do some unnecessary work using these tablets. Like playing with it, taking photos [...].

Also, participant B explained that sometimes, some students play with their settings, and they forget their passwords. So, when the teacher conducts an activity, these students can't participate. The teacher then has to fix these problems or go to another person to fix them.

Moreover, participant B stressed,

I have noticed that many other teachers also complain that some students use their tablets during other subject periods when they don't have to use them. Some students keep playing with it when the teacher explains the lesson.

The findings indicate that teachers face many challenges when using tablets in the classroom, supporting the literature reviewed earlier.

#### *Lack of awareness about tablets*

As mentioned in the introduction, the tablet is a recent educational tool in Maldivian classrooms. Therefore, teachers and students know little about using it for educational purposes. Findings from the study indicated that it is challenging for teachers to use tablets in the classroom because of a lack of awareness about the device.

Participant B stated,

There are some teachers who are not aware of using these tablets [...].

Participant C explained,

In the beginning, it was very difficult. Because the students are also very new. Some might have computers at home, and they might use tablets, but many do not use them. So, it was a very big problem for us.

Furthermore, participant C said,

Before, the students were not aware of these tablets, so they found much difficulty even while searching from the browsers [...].

Participant D stated,

Even teachers need better training on tablet usage. Some of my colleagues avoid using them because they lack confidence in handling digital tools.

Supporting the literature given in the study, one of the biggest challenges teachers face while implementing tablets in the classroom is not having enough knowledge about using them. This study revealed that teachers and some students do not have enough knowledge about the device and how to use it for their learning.

#### *Poor internet connection*

Having a proper internet connection in the school is one basic aspect that must be fulfilled when implementing tablets in the classroom. As mentioned in the introduction, before implementing tablets in the Maldivian schools, wireless internet connections were set up in all the schools. However, the findings indicate that slow internet speed is the most challenging factor while implementing tablets in the classroom.

Discussing the challenges of using tablets, participant C stressed,

Internet connection is a very big challenge for us. Because of all the students in a classroom, there will be 20 to 25 students. So, all of them, all the students, will be searching for information at a particular time, at the same time. So, that time, the internet will slow down, and it will become a big challenge for us, even some documents will not be loading.

Participant B concurs,

The biggest difficulty I face when using tablets in the classroom is slow internet. Because of this slow internet speed, it is difficult to carry out online games and activities using tablets. When the students do their work and submit it to Google Classroom, it takes a lot of time because of the internet speed, and sometimes the connection may be lost or very slow. So they cannot submit their work.

Supporting the previous literature, slow or poor internet connection is the most common challenge teachers and students face when using tablets in the classroom. Because of the poor internet connection, teachers face difficulty carrying out the lesson as planned. Therefore, this affects students' learning, and much of their time will be wasted.

#### **Effective ways of utilising tablets to enhance the teaching and learning environment**

Under this theme, the participants' opinions about how tablets can be used effectively to improve the teaching and learning environment are discussed. These are mostly recommendations from the participants about how to use tablets in future classrooms. The sub-themes derived from this theme are close monitoring, restrictions, training for teachers, formative assessment, and replacing textbooks and hard copies with tablets.

### *Close monitoring*

The study's findings showed that when using tablets in the classroom, teachers need to monitor their students closely and be aware of what is happening in the classroom to have an effective teaching and learning environment.

Participant B stated,

Teachers have to be very much aware, and they have to monitor the students closely [...].

Participant C said,

We should go around to them and we should check whether they are collecting the appropriate information [...].

### *Restrictions*

According to the participants, tablets can be very effective tools in the classroom if usage restrictions are implemented, such as limiting access to games and social media, restricting non-educational apps, and setting clear guidelines for appropriate use during lessons. According to the participants, while restrictions on non-educational use are important, allowing controlled access during lessons enables teachers to show topic-related videos and allow students to search for relevant information, thereby enhancing learning. As mentioned earlier, tablets were implemented in Maldivian schools only very recently. Students cannot use them to watch videos or download applications. Therefore, teachers face difficulties when using these tablets to carry out different activities in the classroom.

Participant B stated,

We can show different videos related to the topic by using this tablet. Since all the students have tablets, it would be easy. So, no need to go to the AV room just showing a video [...].

### *Training for teachers*

The study revealed that teachers do not know enough about using tablets in the classroom. Hence, the study participants suggested that training sessions for teachers about using tablets would enhance their knowledge about tablets and improve the teaching and learning environment. While discussing this, participant B said,

Schools should provide effective training sessions for teachers about using tables. Using Google Classroom also [...].

### *Formative assessment*

According to the participants, tablets can be a helpful tool to carry out formative assessments. Using online games and activities, teachers can carry out formative assessments in the classroom.

Participant B stated, “[...] Most importantly, tablets can be used to carry out formative assessment, which plays an important role in our new curriculum [...].” (refer to appendix H). According to participant B, online quizzes like ‘Kahoot’ is a great tool for conducting formative assessments.

### *Replacing textbooks and hard copies with tablets*

The findings indicate that replacing textbooks and other hard copies with tablets will improve the teaching and learning environment. Participant B stated,

Instead of always using books, we can use tablets for reading. Like stories, different articles, and all. Also, most importantly, it would be very helpful and more interesting if we could use tablets instead of textbooks [...].

Furthermore, participant B added that textbooks are so heavy that students, especially secondary students, find it difficult to bring them to school. For example, their mathematics textbook is so heavy that they don't want to bring it to school. So it would be helpful if these tablets replaced the textbook.

According to the participants, tablets can also be a helpful tool to carry out formative assessments, such as using online games and activities. Participant B stated,

Most importantly, tablets can be used to carry out formative assessment, which plays an important role in our new curriculum [...].

According to Participant B, online quizzes like Kahoot! are a useful tool for conducting formative assessments.

The study suggests that tablets can be used as teaching aids to improve the teaching and learning environment. Instead of using manual materials, tablets can display pictures, charts, graphs, and videos. Teachers can also create folders and share them via Google Classroom, allowing students to access and upload their materials. However, effective use requires proper guidance and training. Tablets, such as online games and activities, can also be used for formative assessment tasks. Teachers can incorporate different teaching strategies using tablets. This study emphasises the benefits of replacing textbooks with tablets, such as convenience and storage and eliminating the need for heavy bags and paper stacks. Teachers should monitor student usage and ensure proper use of tablets, leading to a better learning experience for students.

## **Conclusion and Recommendations**

From the findings, it can be concluded that using tablets in the classroom has both positive and negative impacts on students and teachers. Implementing tablets in the classroom creates a positive learning environment where students are motivated and actively involved in the lesson. Teachers can carry out interesting lessons by using tablets in the classroom. Furthermore, it leads to a constructivist classroom, where students collaborate with teachers and build their knowledge independently. On the other hand, the study concludes that it is challenging for teachers to use tablets in the classroom as students misuse them, and teachers do not have enough knowledge about tablets. In addition to this, the findings reveal that the most challenging factor for teachers when using tablets is a poor internet connection.

The study recommends different approaches to using tablets effectively to improve teaching and learning environments. The study recommends that schools provide training sessions for teachers on using tablets in the classroom, minimise the restrictions applied to the tablets, and monitor students closely when using tablets in the classroom.

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