
Webinars as an Alternative to Traditional Face-to-Face Teaching in High School: Benefits, Challenges, and Issues

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Abstract

This research focused on the experiences of high school students participating in a digital literacy training programme delivered through webinars. The 10-week online training programme was organised by the University of the Philippines Open University in partnership with a Filipino-owned telecommunications company. From data collected through a self-administered online questionnaire, the study examined students' perceived advantages and disadvantages, challenges or issues encountered, and suggestions on how webinars as a teaching and learning tool can be more exciting and engaging for students. The study found that the most respondents believed that webinars could be an alternative tool for teaching-learning when face-to-face classes are not feasible. But to make webinars an effective alternative, students pointed out the following: (a) the online platform used should be easily accessible to all students since not everyone has access to a high-speed Internet connection and high-end ICT gadgets, (b) lectures or training sessions should not last more than 60 minutes, (c) lecture sessions should be more dynamic (increase use of multimedia presentations and avoid 'talking heads'), and (d) discussions between teacher-student should be longer to promote learner engagement. The students emphasised that although webinars can facilitate the teaching of courses, they believed that face-to-face classroom teaching is still the most appropriate for teaching specific topics or courses. The results of this study will help guide teachers to facilitate engaging classes via webinars, especially considering that amidst the continuously occurring environmental, public health, economic and political events taking place globally, keeping students engaged in their learning is a challenge. of continuously assessing online learning platforms and developing and implementing guidelines is important to provide quality education even during uncertain times.

Keywords: educational technology, ICT in teaching and learning, online learning, online teaching tool, remote teaching, webinar.

1. Introduction

The COVID-19 pandemic, a worldwide public health concern that started in 2020, has disrupted how people go through their daily lives. Major adjustments and changes had to be introduced for people to bring back some sense of normalcy and/or adapt to the new normal brought about by the pandemic. In the education sector, the shift from traditional face-to-face classroom teaching to remote instruction compelled educators to rapidly overhaul their instructional approaches or methodologies. Students had to

switch and adapt to new educational approaches. Teaching and learning are no longer within the confines of a classroom's four walls; the vast virtual space on the Internet is where students and teachers now converge to communicate, collaborate, and learn.

The webinar, a computer-mediated interaction facilitating synchronous or real-time engagement, is one of the popular ways for a teacher to facilitate classes and students to attend classes. Various webinar software have made possible the real-time transmission of audio and video files and text-based documents, as well as synchronous interactions within a classroom, regardless of where its members may be located. A webinar also has a wider reach; thus it can facilitate the sharing and exchange of information among thousands of educators and learners from various parts of the world. In fact, webinars have provided a significant support to online learning (Wang & Hsu, 2008).

For more than 10 years now, the University of the Philippines Open University (UPOU) has used livestreamed lectures and interactions for its students (undergraduate and graduate) and target public. Livestreaming of talks, discussions, or seminars have been conducted on various topics, such as environment, public health issues, research, artificial intelligence, gender issues, and public management, among others.

At the start of 2020, when the coronavirus pandemic started to affect the country, UPOU began conducting webinars on online teaching and learning. The webinars were meant to teach and guide educational institutions, i.e., those catering to K-12 through higher education levels, in the transition from classroom teaching to online and/or remote teaching and learning.

1.1. The Digital Literacy Webinar

In the first quarter of 2021, UPOU, in collaboration with a telecommunications company in the Philippines, developed and offered a free webinar series on digital literacy for Filipino high school students, specifically those from grades seven to 12. The webinar series, consisting of 10 modules, was conducted from 5 February to 21 May 2021.

The webinars were held once a week and featured one module per week, with more than one resource person presenting at every session. The 10 modules comprised the following topics: digital productivity and online collaboration tools, 21st-century competencies that an individual must develop and possess, effective communication and digital literacy skills, responsible utilisation of social media, sustainable development goals, enhancing cyber security, global digital citizenship, lifelong learning, and the United Nations' sustainable development goals. Each webinar episode featured select resource persons from private and public educational institutions and the telecommunications industry.

An online videoconferencing platform, Zoom, was used to connect the programme host and speakers from different locations and regions in the Philippines. The webinar was livestreamed on three online sites: the UPOU Networks webpage, UPOU YouTube channel, and UPOU Networks Facebook page. Streaming on three separate sites was meant to provide students with the flexibility of choosing the most suitable platform for them.

Each webinar session lasted 90 to 120 minutes. The sessions were recorded and uploaded to the webinar streaming sites. This way, a participant who missed a session or wanted to view the episode again could do so anytime. After each episode, an online quiz was administered via Google Forms. The quiz link was kept open for only 72 hours after the live event ended. Webinar participants who obtained passing scores for the quiz earned certificates of participation.

1.2. The Research Problem

This study investigated the perceptions of the webinar participants, i.e., senior high school students. Specifically, the study focused on their acceptance of webinars as an alternative to face-to-face classroom teaching and as a teaching and learning tool, as well as the factors that contributed to their acceptance or non-acceptance of webinars.

The study specifically aimed to answer the following questions:

- i. What are the students' perceived advantages and disadvantages of webinars for teaching and learning?
- ii. What factors can make the webinar sessions exciting and engaging?
- iii. What are the challenges, issues, or limitations these students experienced when participating in the webinar sessions?

The study's results led to the development and proposal of best practices or guidelines for conducting webinars for high school learners.

2. Literature Review

Even before the coronavirus pandemic, real-time streaming of lectures or webinars had been adopted in the conduct of training programmes, in the holding of conferences, and occasionally in online institutions that catered to mostly adult learners.

The growing popularity of webinars has led to several research studies conducted on their effectiveness in education and in the conduct of training programmes, as well as on the perception and attitude of adult learners towards webinars or web streaming as a teaching and learning tool in either formal or nonformal education.

A study was conducted by the New York Institute of Technology concerning the perspective of experienced trainers in instructional technology on the use of webinars to support the conduct of training programmes. The research found the following factors or advantages that affected the participants' satisfaction with the webinar tool they used in training: (a) provision of a nearly face-to-face environment in which they were able to interact with instructors and co-training participants; (b) savings on commute time; (c) reduction of anxiety experienced by learners in comparison to attending face-to-face session; and (d) successful delivery of conceptual or basic procedural knowledge (Wang & Hsu, 2008).

Nadama et al. (2019) assessed the use and efficacy of webinars as a platform for educating students in a clinical academic programme. The results of their study indicated that 71.2% of the participants, the majority of whom were millennials, strongly agreed that webinars were flexible and convenient. The study also emphasised that the acceptance of webinars might be attributed to generational differences in learning. Millennials were perceived as technologically advanced, i.e., they are 'digital natives' who are more inclined to learn through multimedia learning materials than traditional textbooks (Frاند, as cited in Nadama et al., 2019, p. 321).

Various studies have explored higher education learners' perceptions of webinars as a teaching and learning tool, specifically in terms of their usefulness and acceptance. Al-Ahmari et al. (2021) found that 89.1% of neurosurgery residents and 87.3% of neurosurgery-attending participants were satisfied with webinars. They also noted that the millennial-aged neurosurgery residents expressed greater satisfaction with the webinar as a teaching tool. This was consistent with the findings of Nadama et al. (2019).

Dasgupta et al. (2021) investigated the effects of webinars on the learning experiences of ophthalmology residents in India during the coronavirus pandemic. Of the 382 respondents, 75% perceived webinars as either a good or very good academic tool. Additionally, 54% expressed their preference for using webinars in teaching even after the pandemic.

In a study on the utility of webinars to educate trainees on core surgical training selection, the researchers found that more than 50% of the 111 respondents preferred webinars over face-to-face tutorials. They pointed out that webinars provided them with convenience and flexibility (Patel et al., 2020).

In a study conducted at UPOU, online students in continuing or nonformal education courses who could not participate in face-to-face study sessions also gave a high acceptability rating for web streaming of lectures or tutorials (Gelisan, 2014).

However, several studies identified challenges and issues with the use of webinars. Students highlighted issues related to access, as not all learners owned or had access to the required hardware, software, or adequate Internet bandwidth, all of which can influence audio and video quality (McCrohon et al., 2001; Shepard, 2005; Shim, 2002; Gelisan, 2014). Another challenge identified was the capability, or lack thereof, of teachers and trainers to facilitate teaching and learning via webinars (Lewis et al., 2020).

Teachers or learning facilitators have also experienced challenges in terms of access: they struggled with either limited or no access to hardware and software required for web streaming or webinars, and their own lack of technical knowledge and skills needed to conduct webinars (McCrohon et al., 2001).

Despite these challenges, the results of these studies underscore the potential of webinars as a tool for remote teaching and learning, especially in situations where health and environmental concerns hinder teaching on-site or in the physical classroom. However, it is important to note that these research findings predominantly represent the views and perceptions of college-aged and adult learners.

Studies addressing the experiences of basic education students on the use of webinars for teaching and learning are wanting, especially since it was only during the pandemic that most educational institutions and educators started to adopt technology as an alternative to on-site classroom teaching (Alvarez & Corcuera, 2021).

This study aimed to contribute to the growing body of knowledge regarding the use of webinars as a teaching and learning tool, specifically for young learners or those in the K-12 group.

2.1. Theoretical Framework

This research applied Everett M. Rogers' Diffusion of Innovation Theory, which investigates the factors affecting the spread and adoption of new technology or ideas, encompassing the factors influencing the rate of adoption.

Rogers defined innovation as “an idea, practice, project, or object that is perceived as new by an individual or other unit of adoption” (Rogers, 1983, p. 11). The theory identified five factors or attributes that affect innovation adoption: (a) relative advantage, (b) compatibility, (c) complexity, (d) trialability, and (e) observability (Rogers, 1983).

Relative advantage refers to the perceived superiority of an innovation over existing ideas or practices. If an innovation is seen as more advantageous or offers greater incentives than other ideas, its adoption occurs faster (Rogers, 1983).

Compatibility relates to the perceived similarity or alignment of the innovation with the existing needs, values, and experiences of adopters. When an innovation aligns with adopters' needs, the adoption rate increases (Rogers, 1983).

Complexity refers to the adopters' perceived difficulty in understanding and using an innovation. If an innovation is thought of as difficult to understand and/or use, the adoption process tends to be slower (Rogers, 1983).

Trialability is the extent to which an innovation can be used, tested, or experimented with on a limited basis. Rogers (1983) stated that innovations that can be used on an ‘instalment basis’ are adopted more quickly. The perception of trialability varies among adopters: early adopters deem it important, while late adopters consider it less significant (Rogers, 1983).

The fifth and final factor affecting innovation diffusion measures, observability is “the degree by which the results of an innovation are visible to others” (Rogers, 1983). The more visible the advantages of an innovation, the faster its adoption will be.

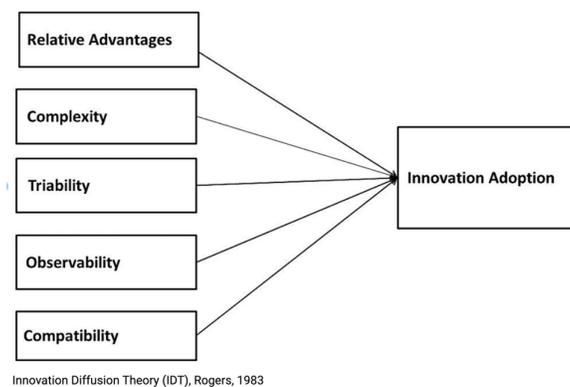


Figure 1. Everett Rogers' Innovation Diffusion Theory (Rogers, 1983).

These factors affecting the adoption of new technology or ideas served as a guide in developing the questions in the survey instrument used in this study.

2.2. Objectives

This research explored the acceptance of webinars as a teaching and learning tool by senior high school students.

The research specifically aimed to:

- i. determine grade-12 students' acceptance of webinars as a teaching and learning tool in place of traditional classroom teaching.
- ii. identify the factors that contributed to grade-12 students' acceptance or non-acceptance of webinars as an alternative to face-to-face classroom teaching.
- iii. enumerate the students' perceived advantages and disadvantages of webinars for teaching and learning.
- iv. determine the factors that would make webinar sessions more interesting and engaging to this group of learners.
- v. enumerate the challenges, issues, and limitations experienced by these learners when they participated in the webinars.
- vi. develop and suggest a set of best practices that can serve as guidelines for conducting webinars for non-adult learners.

Through its findings, this study aimed to provide a basis for educators and school administrators seeking to enhance the efficacy of teaching and learning through webinars. This included devising and/or refining strategies to optimise the effectiveness of remote learning and promoting better student engagement.

3. Research Methodology

3.1. Research Method and Instrument

A survey was conducted to collect data for this study. A self-administered online questionnaire was sent to the respondents who volunteered to take part in the research. Two sets of questionnaires were prepared. The content of both were the same, but one set was prepared in the Filipino language and another in the English language. The respondents had the option of choosing which version to answer.

The questionnaire included items on respondents' socio-demographic characteristics, access to the Internet and ICT devices, their experiences in participating in the webinar on digital literacy, and their suggestions on how to improve the conduct of webinars. Respondents' perceptions of the usefulness of webinars were studied using Likert-scale statements; these were developed based on by Rogers' Diffusion of Innovation Theory.

3.2. Research Samples and Sampling Method

The sampling method used was total enumeration. A total of 706 grade-12 students participated in the digital literacy webinar series. Students who were 18 years old or older (i.e., in grade 12) were targeted as respondents because they were assumed to have more knowledge, skills, and experiences in using ICT, higher social media literacy, and the maturity that could contribute to a more objective assessment of webinars as a tool for teaching and learning.

Following the research protocol, which was reviewed and approved by the UPOU’s Institutional Research Ethics Board on 21 November 2021, only participants who agreed and volunteered to participate in the survey served as research respondents. The study involved 72 volunteer respondents.

3.3. Data Analysis

The data gathered in this study were analysed using measures of frequency, count and percentages. Information on the participants’ perceptions of the usefulness of webinars as a teaching and learning tool was gathered using the Likert scale.

The following weights for the Likert scale were used:

- Strongly agree (SA) = 5
- Agree (A) = 4
- Neither agree nor disagree (N) = 3
- Disagree (D) = 2
- Strongly disagree (SD) = 1

Mean scores of the results derived from the Likert scale were interpreted using the following ranges:

- Mean = 4.21-5.00 = SA
- Mean = 3.41-4.20 = A
- Mean = 2.61-3.40 = N
- Mean = 1.81-2.60 = D
- Mean = 1.00-1.80 = SD

Frequency counts were generated through Google Forms, which was used for data collection. Microsoft Excel was used to compute percentages and mean scores.

4. Findings and Discussions

4.1. Participants’ Demographic Characteristics

A total of 72 grade-12 webinar participants volunteered to take part in the survey. Of these, 49 (69.4%) were females and 22 (30.6%) were males. Almost 90% of the participants were 18 and 19 years old; the oldest participant was a 43-year-old individual (Table 1).

Almost all the research participants attended public high schools (90.28%).

Table 1. Socio-Demographic Characteristics of Participants

Demographic characteristics	Number	%
Sex		
Female	50	69.44
Male	22	30.56
Age		
18	48	66.67
19	16	22.22

Demographic characteristics	Number	%
20	2	2.78
more than 21 years old	5	6.94
no answer	1	1.39
School Classification		
Public	65	90.28
Private	7	9.72

4.2. Participants' Access to ICT and Preference for Platforms

Having a strong and fast Internet connection in the Philippines is a challenge. The students had varying qualities of Internet access. Most of them participated in the webinars using mobile data (40.3%) and prepaid broadband connection (31.94%). Almost a quarter of the participants connected to the Internet via a fibre network (22.22%), while only four participants (5.56%) used the digital subscriber line (DSL).

A little over 40% of the participants had access to Internet speeds of 15.1Mbps or higher. However, they still reported that disconnection was a constant issue online. They experienced partial to total disconnection during webinar sessions.

Table 2. Participants' Access to the Internet and their Internet Speeds

Internet Information	Number	%
Internet Connection		
Data	29	40.28
Broadband Wi-Fi	23	31.94
Fibre	16	22.22
DSL	4	5.56
Internet Speed		
15.1Mbps and higher	29	40.28
5.1Mbps to 15Mbps	18	25.00
1.1Mbps to 5Mbps	17	23.61
Less than 1Mbps	7	9.72
No answer	1	1.39

The respondents identified several ICT devices and the platform they used to participate in the webinars. A total of 59 (81.9%) respondents used mobile phones as their primary equipment. This is primarily due to mobile phones' portability and lower cost. The laptop was the preferred secondary equipment for 50% of the respondents (Table 3).

Regarding device ownership (Table 4), almost 15% of the respondents stated that they did not own the devices they used (13.89%). The devices were either borrowed from or shared with relatives or friends.

Table 3. Participants' Primary ICT Devices Used for Joining Webinars

ICT Device	Number	%
Primary Device		
Mobile phone	59	81.94
Laptop	10	13.89
No answer	2	2.78
Tablet	1	1.39
Secondary Device		
Laptop	36	50.00
Mobile phone	21	29.17
No Answer	8	11.11
Desktop computer	4	5.56
Tablet	3	4.17

Table 4. Participants’ Device Ownership

Ownership	Number	%
Owned	62	86.11
Borrowed	10	13.89

In terms of the platform used, Facebook was the preferred choice (78%) (Table 5). Most respondents (58.6%) explained that Facebook was the most accessible and used the least amount of data (Table 6).

Table 5. Participants’ Preferred Platforms When Participating in the Webinar Series

Platform	Number	%
Facebook (UPOU Networks FB page)	56	77.78
YouTube (UPOU Channel)	9	12.50
Zoom	4	5.56
UPOU Networks webpage	3	4.17
Total	71	100

Table 6. Participants’ Reasons for Using Facebook as the Platform for the Webinar^a

Reason	Number	%
Easy access, uses less data, and loads faster	82	58.57
Mobility	30	21.43
User-friendliness	28	20.00
Total	140	100

^aMultiple responses

4.3. Participants’ perceived advantages and disadvantages of webinars as a tool for teaching and learning

Students were asked to describe their perceived advantages and disadvantages of the webinar as a teaching and learning tool. Their responses were categorised according to themes.

Table 7. Participants’ Perceived Advantages of Webinars as a Tool for Teaching and Learning^a

Advantage	Number	%
Interactivity	127	37.91
Facilitates interaction between teacher and students. (53)		
Facilitates interaction between and among classmates. (32)		
Provides students with confidence to join the online discussion. (42)		
Flexibility	116	34.63
Webinar recordings can be replayed anytime/anywhere. (60)		
The lessons are easier to comprehend compared to merely reading the modules. (56)		
Accessibility	92	27.46
A student can participate in webinars anywhere. (52)		
A student can participate in class without needing to go to the physical school. (40)		
Total	335	100

^aMultiple responses.

The participants identified the following advantages of webinars as an alternative tool for teaching and learning: facilitate interactivity (37.9%), provide flexibility (34.6%), and provide accessibility (27.5%). These results closely aligned with the conclusions drawn by Wang and Hsu (2008) and Nadama et al. (2019). In the former, interaction and accessibility emerged as critical factors influencing participants’ satisfaction with webinar-based learning. Similarly, in the latter study, participants recognised the flexibility offered by webinars, which enabled them to study and catch up with lessons at their convenience.

In a previous study conducted at UPOU on the web streaming of lessons, the participants emphasised the need for real-time interaction between learners and teachers to make the lessons more effective (Gelisan, 2014).

In terms of disadvantages, the webinar participants identified the following: dependence on the use of the Internet (54.3%), limited learning and interaction due to a shorter time allotted for the open forum (29.3%), and learners' dependence on the use of ICT devices (16.4%) (Table 8).

Table 8. Participants' Perceived Disadvantages of Webinars as a Tool for Teaching and Learning^a

Disadvantage	Number	%
Dependence on Internet	172	54.26
Disconnection because of poor Internet connection. (63)		
Inaudible to choppy audio due to poor Internet connection. (59)		
No access to Internet. (50)		
Learning difficulty and limited interaction	93	29.34
Poor attention span of students or distracted students. (47)		
Restricted student engagement in the discussion due to time constraints. (46)		
Dependence of webinar on the use of ICT	52	16.40
Limited or no access to ICT devices. (52)		
Total	317	100

^aMultiple responses

It should be noted that the participants also identified the webinars' dependence on the use of ICT as a disadvantage even though the majority (86.11%) owned devices, as shown in Table 4. The respondents pointed out that webinar participants without access to ICT devices and the Internet were at a disadvantage as they could not participate in real-time, which is comparable to missing a class.

4.4. Participants' Issues and Challenges

Although most of the high school students who participated in the webinar had Internet access with speeds of 15.1Mbps or higher, they experienced persistent issues while watching the webinars due to intermittent Internet connection loss. This reflects the ongoing challenges in the country's telecommunications and Internet infrastructure and services.

For every 10 webinar participants, nine encountered technical issues. Table 9 below describes the technical challenges encountered by students.

Table 9. Technical Challenges Encountered by the Webinar Participants

Challenge	Number	%
Poor or slow Internet connection.	45	26.47
Disconnection from the Internet.	40	23.53
Inaudible or choppy audio.	39	22.94
Poor video quality.	34	20.00
Inaccessible or unreachable website.	12	7.06

Poor or slow Internet connection was students' biggest challenge while watching the webinars. This was an expected issue as the participants mostly relied on their mobile data connection as shown on Table 2. Internet connectivity has a big implication on the potential of webinars as this tool relies heavily on Internet access and ICT infrastructure. As shown in Table 9 above, the two main challenges are associated with Internet connectivity issues. Other challenges encountered include blurry video and choppy audio, which were also due to poor Internet connection.

4.5. Participants' Suggestions for Improvement

The participants identified what needed to be improved when holding webinars. They suggested that interactivity or provision of interaction time between students and teachers (24%) should be improved (Table 10). In addition, they suggested that organisers or teachers choose platforms that would make the webinar sites more accessible (22%). As described in the previous section of this paper, they had pointed out that Facebook was the preferred and most accessible platform. However, it should be noted that organisers should provide other streaming sites to ensure flexibility and improve accessibility of the webinar series.

The participants also recommended that the webinars be recorded and made available online so that the lectures or discussions can be replayed anytime and anywhere (21%). They also suggested adding more motivational activities in the webinar sessions (18.2%).

Table 10. Participants' Suggestions to Make Webinars More Interesting^a

Suggestion	Number	%
Increase interactivity by allotting more time for open forum.	71	23.99
Enhance accessibility of the webinar site.	65	21.96
Make recordings of the webinar available online.	62	20.95
Provide more motivational activities during the webinar.	54	18.24
Use multimedia presentations with more graphics than text.	44	14.86
Total	296	100.00

^aMultiple responses

To encourage student engagement in the webinars, the participants suggested adding games, providing a longer time for open forums or discussions, and giving out prizes to active participants (Table 11).

Table 11. Participants' Suggestions to Make Webinars More Engaging and/or Participative^a

Suggestion	Number	%
Include games or contests in the webinar.	55	35.48
Provide more time for open forum or discussion (i.e., students be given time to share their thoughts and opinions, and ask questions).	52	33.55
Provision of prizes to active participants.	48	30.97
Total	155	100

^aMultiple responses

Participants were also asked to identify factors that usually made a webinar boring, unengaging, uninteresting, or uninspiring. They pointed out the following factors: long, 'talking head' lectures (25.7%), very long webinars (25.7%), absence of interaction between the speaker and participants (18.8%), and absence of presentation or multimedia materials (17.4%) (Table 12).

That interaction was mentioned repeatedly by the survey participants, showing their strong preference for engagement and interaction over passive participation.

Table 12. Participants' Description of a Boring or Unengaging Webinar^a

Perceived reason for boredom in a webinar	Number	%
Long, 'talking head' lecture.	71	25.73
Long webinar.	71	25.73
Absence of interaction between speaker and participants.	52	18.84
Absence of multimedia presentation materials.	48	17.39
Only one resource person presenting in the webinar.	32	11.59
Script and talk are not contextualised to the participants' situation.	2	0.72
Total	276	100

^aMultiple responses

Regarding the preferred webinar length, a large number of participants suggested 60 minutes (37.5%) and 30 minutes (30.6%) (Table 13). The preferred length identified is similar to a classroom session length per subject/course.

Table 13. Participants’ Preferred Length of Webinars

Length	Number	%
60 minutes	27	37.50
30 minutes	22	30.56
45 minutes	15	20.83
15 minutes	4	5.56
More than 60 minutes	2	2.78
No Answer	2	2.78
Total	72	100

4.6. Participants’ Perceptions of the Usefulness of Webinars as a Teaching and Learning Tool

Seven statements were used to gauge participants’ perceptions of the usefulness of webinars using a Likert-scale analysis. Six of the seven statements had mean scores ranging from 4.5 to 3.5, indicating the participants strongly agreed or agreed with them. One statement, which addressed the perceived comparable effectiveness of webinars against face-to-face classroom sessions, got a mean score of 3.0, which implied that participants neither agreed nor disagreed with this particular statement (Table 14).

Table 14. Participants’ Perception Towards the Usefulness of Webinars for Teaching and Learning

Statement	Mean	Interpretation
I believe that certain courses are suitable for webinar instruction, while others may be better taught using face-to-face methods.	4.49	Strongly Agree
Webinars allow me to multitask, i.e., study or learn while I do other things.	4.09	Agree
I believe that the webinar is an alternative to the traditional face-to-face classroom teaching.	3.97	Agree
I believe that webinars are suitable to impart conceptual knowledge but may not be as effective for conveying procedural knowledge.	3.71	Agree
Conduct of classroom discussions through webinars is more convenient for teachers.	3.70	Agree
Conduct of classroom discussions through webinars is more convenient for students.	3.53	Agree
Learning through webinars is equally effective as face-to-face classroom teaching.	3.33	Neither Agree nor Disagree

4.7. Limitations of the Study

This study had some limitations that future studies can address. The sample group was limited to mostly 18-year-old grade-12 students who participated in a series of digital literacy webinars, the majority of whom were attending public high schools. Another limitation is the relatively low number of students who volunteered to serve as respondents to the survey compared with the number of webinar participants. Thus, the results of this study cannot be generalised to all basic education students.

Younger students and those coming from private schools, i.e., those with relatively with higher chances of access to ICT hardware and faster Internet connections, may reveal other issues, challenges, and perspectives on the use of webinars for teaching and learning.

Future studies may also use other means of gathering data, which the researchers of this study were not able to utilise due to health protocols that were in place during the pandemic.

As identified in this study, access to the Internet and other ICT devices are challenges that the students encountered as webinar participants. These same challenges are likely to be the reason for their low turnout in this study.

4.8. Recommendations

4.8.1. Suggested best practices for holding effective webinars

The following are best practices that can serve as guidelines to further maximise the effectiveness of using webinars for teaching and learning.

- i. Choose a streaming platform that is accessible to your target participants.

In this study, Facebook was the preferred platform for streaming due to its accessibility, particularly through mobile phones, and its lower requirement for Internet data.

However, it is advisable to provide learners with various platform options, considering that each learner may have distinct needs, capabilities, and circumstances.

- ii. Conduct shorter webinar sessions.

As suggested by the respondents in this study, the maximum length of a webinar should be 60 minutes. However, shorter webinars would be best.

Limiting screen time and shortening the duration of the webinars can help sustain the participants' attention and interest. Should a webinar episode require more than 60 minutes, it is recommended to divide it into a series of shorter webinars.

- iii. Ensure interactivity between resource persons and webinar participants.

To maintain participants' interest and engagement, the interactivity of the webinar should be enhanced. This can be achieved by actively involving participants in open forums and discussions, and incorporating quizzes and games, among others.

Use well-designed and produced multimedia learning materials to enhance the comprehensibility of the presented topic.

Avoid lectures that are too formal, in which only one person speaks throughout the programme. Engaging more resource persons who can provide diverse insights and perspectives can enhance comprehensibility and broaden knowledge about a particular topic.

- iv. Record the webinar and make the recording available online.

Make it easy for students to catch up on what they miss during real-time streaming, or review parts of the lesson they have difficulty understanding.

Make the webinar recording available as soon as possible on an easily accessible platform. The recording should also be downloadable so that webinar participants who do not always have access to high-speed Internet can keep a copy on their device, which they can view and review anytime and anywhere.

- v. Provide capacity building for teachers and lecturers.

Teachers and lecturers should not only know the topic at hand, they should also learn how to interact and teach before the camera. They should have fundamental knowledge of the strengths and weaknesses of webinars as a teaching and learning tool and be familiar with the technical

requirements of a particular platform. The relevant knowledge and familiarity will help guide teachers and lecturers on the nuances of teaching on-camera and what multimedia resources to use and techniques to apply, among others, to keep the participants' attention and focus on the webinar topic.

- vi. Choose simple but appropriate gadgets for webinars and streaming.

Teachers always try to look and sound good in a real face-to-face classroom setting. Students expect their teachers to maintain that effort on camera while facilitating a webinar. Teachers should be seen and heard. A good microphone, camera, and basic lighting set-up will help make a webinar pleasing to watch and listen to.

4.9. Future Considerations

Future research should focus on the learning needs and characteristics of learners from different groups. Learners from different age groups may have different expectations about teaching and learning via webinars.

In addition, future studies should explore the most effective teaching strategies or styles relevant to using video materials, particularly for young learners. This would contribute valuable knowledge on tailoring teaching approaches that can align with the needs and preferences of different age groups, which can thus foster an inclusive and practical educational experience.

Results from these studies can help further enhance the effectiveness of webinars as a teaching and learning tool.

5. Conclusion

The widespread disruption brought about by the pandemic necessitated individuals to adapt to the new normal as well as continuously plan and prepare should another unforeseen man-made or natural disaster occur in the future. This study explored webinars as an alternative tool for teaching senior high school students beyond the confines of traditional classrooms, a concept that the study participants had accepted. Three themes emerged from the respondents' perceived advantages of webinars: interactivity, flexibility, and accessibility. These three attributes can offer valuable guidance to school administrators and educators in selecting other ICT tools to adapt for teaching and learning. Alongside the use of alternative ICT tools for teaching and learning, the teachers and educators must also be proficient in using the relevant technology and fully understand its capabilities and limitations to ensure its effective use in teaching and learning, especially in encouraging students to engage in their learning.

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