Effect Of Using Webinar Technique On The Digital Culture Of Chemistry Students In Ibin Haitham Pure Science College

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Article Info

Abstract

The aim of this research is to identify the effect of Webinar technique on digital culture in the College of Education for pure sciences at Ibin Haitham, University of Baghdad. The research samples consisted of (68) male and female students from the Chemistry Department who are following classes during the (2019-2020) academic year. The samples represent (42%) of the total number of (162) students split into control and experimental groups. For this purpose, the scientific contents for testing were determined. The experimental part is based on analysis of the results from experiments in (preliminary standard solutions, refractive index, Beer-Lambert law). To achieve the aim of the research in testing the measure of student's digital culture, the researcher developed two testing mechanisms, the first one consists of 20 items, (15) of them represent multiple choice type of questions and the remaining (5) represent descriptive answers. The other is to develop a measure of digital culture. This one consists of (38) multiple-choice questions, each with (5) alternatives. The results showed a significant statistical difference in the measure of the digital culture between the two groups in favor of the experimental group which was taught using the Webinar technique.

Keywords

Webinar, Digital Culture, Research problem

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1. Introduction

Due to the rapid growth and development in media, digital and technological devices, and the world’s openness to radical new and innovative ideas as a result of the revolutions that occurred at the end of the twentieth century and the beginning of the twenty-first century and the trend towards digital and scientific culture and creativity in all areas of life to keep pace with the “networked community TNS” of developed countries that provided the Internet where Making the world a small city through the communication of individuals with each other while they are in distant places, and it became possible to attend a lecture from far away through several new and modern applications and technologies, including the Webinar technology, which is distinctive through which seminars, workshops, lectures and even conferences can be presented easily, which led to a remarkable change. It is effective for advancement and progress in all aspects and aspects of life and directs the world to benefit from these technologies and employ them to support the service aspects of various industries and professions and has led to the development of the culture of society, especially the developed countries, which have reached a level of complexity and changes that have led to a knowledge, cultural and digital difference between our society and the networked society. The research problem was represented by answering the following question: "What is the effect of the Webinar technology on the digital culture of chemistry students at the College of Education for Pure Sciences - Ibn Al-Haytham?"

Research Importance:

That the world today, in light of technological and digital progress and the availability of the Internet, has become more like a small city that has enabled individuals to communicate with each other and with developed and even remote countries, whether social communication or attending scientific or cultural and artistic lectures and seminars, as they spare us the hardship of traveling and also sitting for a long time to listen to the long lecture And the recording and storing of information, whether on paper, audio or even electronic files, it is possible, thanks to the Webinar technology, to provide a set of applications that have enabled individuals and students to attend with the aim of ease to a large extent correspond to the actual physical presence as it is more like teaching, informational and educational hypotheses available on the Internet through certain applications Individuals and students were also able to ask questions, discuss either voice or face to face, and even share files.

The services provided by modern smart applications and their technologies that can be employed in teaching and education, especially those that work to develop students' aspects of thinking and digital culture, and to develop their orientation and ability to learn (Laubscher, A. & Eickelmann, B., 2018) Higher education today offers forms of vocational training, intensive and in-depth education that stems from
participation in society. The social learning environment on campus provides a multi-community of professors and practices that give students broad access to people from different fields and backgrounds, in addition to intensive study opportunities, which unite all of them to form a creative availability that generates new ideas, perspectives and knowledge. (Cook & Brown, 1999, pp. 381-400)

There is a distance between the culture of developed countries and our local culture, as inequality in terms of accessing the Internet and not using digital resources properly has led to a global, social and democratic difference. (Fedouh, Abdul Qadir, 2018, p. 11), including methods of teaching, learning and self-direction of students for these smart applications. And the digital and its diversity that coincided with all educational stages and decisions and benefiting from them in interactive e-learning, which proceeded slowly, may be due to the lack of skills and experiences that explain to students how to employ these technologies and methods of training on them by teachers and faculty at the university. (Al-Sharif, 2018, p. 605) To improve education and turn it into digital learning and create a smart digital culture, there are international efforts exerted by organizations such as ESCWA and UNESCO that are keen on openness, creating an atmosphere of cultural diversity and enhancing recognition of the peculiarities and traditions of these peoples, independence and respect for the diversity of their culture. (2017, D. Liu, L. & Gibson).

Smart educational applications have an effective and positive role in supporting educational activities that have an impact on the development and quality of education, as well as stimulating and developing interaction between students and providing them with skills (Tojek, J.P., 2018) and their role in forming digital knowledge and culture in the digital world in which we live. Among the studies that dealt with the Webinar technique and review the literature we refer to:

Study (2008: Wang & Hsu) entitled "Using the Elluminate Webinar Tool to Support Training". This qualitative study examined the effects of implementing web-based learning from the perspective of student trainers. The study (L. Voskamp, 2012) titled the webinar as an effective tool for marketing and sales via the Internet, as this study referred to the technical and technical aspects of organizing, preparing and managing webinars. As for the studies concerned with the digital culture of youth, they are:

Lolly, 2017): It dealt with the tendency of young people to interact and socialize through digital communication and its effect on positive and negative youth behavior and thus on the culture of young people on the Internet. And the study (Abdelkader Fedouh, 2018): "The digital culture industry in light of the paradigm pattern" was concerned with the identity of the networked society and linking social events in line with the principles and requirements of the age and limiting the spread of industrialized culture.

Through these studies, the researcher benefited from the theoretical framework, especially with regard to culture in general and the importance of the Webinar technique. The research is important in terms of:

1. the importance of students in the College of Education using smart digital educational applications and technologies that develop and facilitate the teaching and learning process.
2. Students’ acquisition of skills that stimulate digital interactive learning and lead to the creation of a digital culture for them.
3. Developing students’ awareness of the concept of the Webinar and the digital technologies it includes and the resulting building of an identity that carries change in an amazing way, due to their tendencies and tendency to acquire new information and culture that enables them to reach and discuss with their peers in developed countries.
4. The necessity for them to have the ability and ability to use this culture, to move from paper culture to digital and to build an educational system based on the paper and digital educational content to receive information.

**Research goal and hypotheses:**

The research aims to investigate the impact of applying smart digital technologies represented by the Webinar and its effect on students' achievement in chemistry and the formation of the infrastructure for digital culture to keep pace with the tremendous development in the world.

To achieve the goal of the research, by answering the following questions:

1. There is no statistically significant difference at the level of (0.05) between the average scores of (the experimental group) to whom the Webinar technique was applied and the average scores of the students who studied by the usual method to obtain the material for the analysis of practical mechanical chemistry?
2. There is no statistically significant difference at the level of (0.05) between the average scores of the (experimental group) for whom the Webinar technique was applied and the average scores of the students who studied by the usual method at the level of their digital culture?
Search limits:
1. Fourth-stage students of the Department of Chemistry, College of Education for Pure Sciences - Ibn Al-Haytham / University of Baghdad/ Morning study.
2. The academic year 2019-2020, the first semester from (26/11/20 to 1/31/2020).
3. Practical automatic analysis subject experiments: (elementary standard solutions, refractive index, illustration of Lambert-Pierre law, rotation angle)

Defining terms:

Webinar: A simultaneous, real-time webinar or meeting events that brings people together at a specific time to listen, observe and participate in a presentation. Most of the time, people use a phone to listen to the presentation or a computer. (: 62011, Lande)

He (Bekkering & Shim, 2006) added that they are PowerPoint slides and side chats. Live broadcasts allow them to be interactive; people can ask questions and share information. Sessions are recorded and displayed on demand.

Culture: Edward Burnett defined it as "an integrated structure that includes belief, knowledge, art, morals, traditions, norms, values, behavior and all the capabilities that a person performs as part of society." (Abraham, 2001)

And I knew it (Luli: 2017): The ability of young people to interact through electronic platforms and being able to use digital and smart means and applications to communicate with others and build virtual relationships and the skill of using the Internet to access information professionally to benefit from it in practical and scientific life (Luli, 2017: 68)

Theoretical framework:

A webinar refers to a webinar through the internet and it is in the category of social media, whether it is a presentation or a lecture in which viewers can send questions, comments and even participate in the discussion (Lee-Kelley, & other2003), which attracts more attention and facilitates real-time communication. And enrich the interaction in the learning environment. (Shiang, Hui-Yin Hsu: 167, 2008)

Computer communication systems fall into two categories: asynchronous (time-delayed) and simultaneous (real-time) communication (Romiszowski & Mason, 2004). Simultaneous communication technologies include Voice over Internet Protocol (VOIP), instant messaging and video conferencing, while adopting the technologies of Asynchronous communication mainly on e-mails, bulletin boards and blogs, the webinar tool (webinar) is one of the more advanced CMC systems (Jeong & Joung, 2007). Among the many such systems, the webinar tool is one of the most recent developments that is capable of transmitting video, audio and images in real time and in two directions and provides opportunities for both teachers and learners to experience different levels of online interaction (Shiang, Hui-Yin: 176, 2008). These seminars may be one-way only, from the lecturer to the attendees, with limited interaction and may be more cooperative, as it is a session that allows the participation of the attendees and the lecturer in some cases, and it is via a standard phone line that includes an information display on the screen that allows the attendees to respond and participate via their own phones or phone. Headphones, which allow a great deal of convenience via Internet Protocol (such as Skype, Zoom, Google hangout Meet, Free Conference Call (FCC),) .

These live seminars are of two types:

Live seminars are of two types:

→ Live webinar created directly enables (the audience) to participate effectively through direct interaction, asking questions, comments and obtaining answers.

Pre-recorded webinars the lecture or the seminar is pre-recorded and presented later. The audience cannot actually participate because they can view the recording at a time that suits them and several times.

There are three formats for managing these sessions across the web:
1. Presenter versus multiple participants from one site.
2. Presenter versus multiple participants from multiple locations.
3. Several lecturers, several participants from one site or several sites. Cheng, Ko, Kinshuk, & Lin, 2005).

Advantages of using a webinar tool to facilitate communication between two websites:
(1) Affordable Users can participate in a webinar session with a computer and video / audio capture devices. (de Gara & Boora, 2006
(2) Trainers can communicate with learners simultaneously to provide immediate feedback to learners (Hotcomm, 2003).
(3) Facilitates real-time multimedia demos.
(4) Facilitates multi-level interaction in real time coordination and designation of specific participants to be in charge of the sessions. (Marjanovic, 1999),
(5) Provide an environment in which participants can archive seminar content for personal review or for people who have missed the real-time session. (Britt, 2006)

Uses of Webinar:
- Tool for shopping and sales presentation: Used for business strategy and marketing.
- Free display and list building tool
Such as using communication platforms such as (YouTube Live, Instagram Live, or Facebook Live) and providing free webinars.
- Introducing the A&Q session through it, employers can answer questions about the product through the webinar that is used.
- Training directly:
The webinar is a way to train new software for a remote team by recording the conference on the web.
- Interactive interview. The webinar is used to conduct interactive interviews by recording.
- Onboarding clients and training using educational software to train clients, either by recording the seminar in advance or directly.

Educational Webinar:
To work the educational webinar requires the provision of:
1. The educational structure
2. There are some things that are supposed to be available for the and include:

• The presenter of the seminar or lecture works to determine the topic and organize the time for the lecture and to receive the questions and answers of the audience.
Organizing professionally prepared slides that attract the audience's attention by using a program such as PowerPoint, Keynote that is designed in a functional and effective aesthetics. (Zieliński 2012: 29)
• A plan to publish and promote the topic on the web.
• Attention to technical details.

2- Technical requirements Webinar Platform: by configuring some things:
• Determine a budget.
Imaging devices.
• Voice broadcast.
• Network connection.

3- Join the educational webinar:
And it depends on the type of application that is chosen and the audience downloads this application through which the lecture is presented.

4- Follow-up after the event
the lecturer is supposed to follow up on the audience who previously participated in the lecture and whose names have not appeared, by sending a link to return them within a period ranging between 24-48 hours after the event.

Being able to use digital and smart devices and technologies develops the individual's ability to do personal and functional work and do it digitally through the Internet, as it has become in control of human life, both personal and functional, and there is a difference between learning and knowledge and between awareness and digital culture that leads us to create an information society. In it the creation, distribution, dissemination, use and processing of important economic, political and cultural information, Kellner defines the information society as “a dynamic and complex space in which people learn about identity, culture and social practices” (2008: 23, Kahn & Kellner)

Digital culture - a new social ecology as technology has influenced the core of our communication styles and our culture. And those technologies related to information and communication, which are interactive systems, radically altered our cognitive abilities (Dascal, 2006), "TV has likened to. Trying to interpret digital culture is like trying to interpret a song that keeps adding clips to it every day until it looks like a new song." (2018: 24, TV Reed)

We use digital technologies in all our business, from our financial transactions to the stock market, trade and
other things through digital systems, and these media converge with digital forms, such as the Internet and video games, and Gere stated that the extent of digital technologies in our lives indicates the existence of a digital culture. It is believed to be a mark of culture (Gere 2002: 12).

Culture is a term that is difficult to define, contain or limit it as it aims to embrace all reality. It is a dynamic process of an immutable essence, and it may be understood as a dynamic system with the flow of people, information and products that adopts different forms in response to the dynamic models of relationships between individuals, societies and regions. (Alsina, 2010: 3), what our increasingly networked digital culture needs is a new “friendship policy”, new concepts of the relationship between the self and the other, and a new understanding of society. (GERE, 2010: 7)

Communication and information are considered social phenomena described as data and cultural products that are not merely transmitting messages, but rather part of the cultural fabric and an important aspect of society. The process of exchanging knowledge and protecting the identity of culture is a “process of participation and creation of a community” (Hamelink, 2003, p. 155). From here we understand Culture is like a system for communicating with people through common cultural symbols and creating common meanings (Foresta et al, 1995 p. 19)

Digital culture between culture and technology that technology has an impact on various aspects of our culture and it is not entirely wrong. (Hawk, et al., It creates a positive or negative change in our cultural communication structures, and the technologies always available are an important element in facilitating the processes of participation and preserving our cultural memory. (Uzelac, 2010, p. 27), today the virtual space is a part of our life. Our geography controls literature and research, the emergence of artificial intelligence, the Internet of things, and digital literacy, facilitating user participation in the digital sphere of cultural and media industries (Deuze, 2007, p. 247).

The basis of digital culture is represented by the youth's use of smart technological technologies and applications and the electronic digital navigation that results from it, as there is no restriction except for the technological and virtual rules, as they create for themselves new rules that fit the nature and digital goals of their new society. (Muhammad Rahmeh 2008: 132) The youth's tendency to the Internet and the networked society is to search for an opportunity to express their opinions, interests and desires, and to communicate and discuss among themselves about new ideas and values through various social platforms that are available in an easy and freeway. (Al-Mabrouki, 2011: 177-165) This diversity and digital life has some negative effects, including:

- The decline in the role of the written culture (reading).
- Young people's addiction to electronic communication with websites for chatting and games more than searching for information.
- Expropriative tendency and the pursuit of young people to acquire modern and more advanced equipment, as they believe that they are evidence of keeping up with the modernity of the era (2017: 70, Lowley)
- The “digital divide” or the knowledge gap and the great disparity between our society and developed societies.
- The absence of censorship and openness to some websites and electronic games that push towards violence or the adoption of ideas and behaviors far from society, culture and language.
- The emergence of “Al-Arabisi”, a hybrid language named by researchers, which includes the English, French, or Latin language and its integration with the Arabic language, and this phenomenon, threatens the main reference for young people in terms of language.
- The spread of electronic fraud and piracy and the emergence of isolation among young people by spending most of their time searching for new means of entertainment and techniques for communication and building their identity away from society. (Lolly, 2018: 72)

Although there are some drawbacks, it has multiple advantages if used in the right way, including:

- Developing youth skills in using the Internet, even if it is geared towards entertainment and communication with the youth of the virtual community. (Mansouri, 2014: 36-37)
- Young people's tendency to interact, harmony and express their opinions and desires. Establishing a knowledge society through communication and digital diversity and what results from it through good practice of innovation, creativity and cultural diversity (2009: 19, UNESCO World Report)
Learn about the forms and currents of culture that are sweeping the whole world, the civilizations of peoples, human issues and experiences, and their role for the rapprochement of cultures, and the opening of objective dialogue and convergence through forums. (The Arab Thought Dialogues, 2011: 272)

Search procedures:

Research community and its sample: The research community is represented by all students of the College of Education for Pure Sciences - Ibn Al-Haytham, fourth phase, morning study for the academic year (2019-2020), the sample was deliberately chosen.

Search tools:

Achievement test in chemistry, practical automatic analysis of the first semester experiments. A measure of digital culture.

Search procedures:

• Preparing an achievement test for the automated practical analysis course for the experimental and control groups.
• Reviewing the literature related to the subject of the study in order to prepare the theoretical background and design the study tool. Preparing a scale for the Webinar technology and its impact on students' digital culture and presenting it to educators with expertise and experience, and verifying the validity and consistency Preparing and preparing lectures and educational modules (DOC, PDF, PPT) based on the application (G-Classrooms & Telegram & YouTube)

Research Methodology

The researcher relied on the experimental method of post-testing and partial control of previous information for the analytical material

Table (1) Research Experimental Design

<table>
<thead>
<tr>
<th>Group</th>
<th>Education Type</th>
<th>Pre-analogy</th>
<th>Telemetry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>Webinar technology</td>
<td>Application of the digital culture scale</td>
<td>Achievement test + Measuring digital culture</td>
</tr>
<tr>
<td></td>
<td>(G-classroom)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>giving a lecture</td>
<td>Application of the digital culture scale</td>
<td>Achievement test + Measuring digital culture</td>
</tr>
</tbody>
</table>

The research sample:

The research community consisted of students of the Department of Chemistry for the morning study at the College of Education for Pure Sciences / University of Baghdad. The sample was determined in an intentional way to represent the research sample and its selection was randomly assigned two divisions, one of which represented the experimental group, (2019-2020) and the researcher chose the sample due to the fact that she works in this college, which facilitates procedural matters.

Search tools:

1. Achievement test on the experiences of the first semester of the subject of practical automatic analysis. The test items were prepared and (20) items (15 items) were multiple choice and (5 article items) and the reliability coefficient was (0.76) based on the Alpha-Cronbach equation, while the discrimination factor was (0.37).
2. A Scale for Digital Culture:
After reviewing the previous studies, foreign and even Arabic, and in light of the availability of them in the field of life skills, the scale was prepared in terms of identifying information, skills and educational digital applications that students use in the three fields (knowledge, skills, and affective) and drafting paragraphs. The scale consisted in its final form of (32) paragraphs, each paragraph has five alternatives according to Likert's five-point scale and includes: (Strongly disagree, disagree, disinterested, strongly agree, agree) with two revealing paragraphs. 0.05) and the degree of freedom (128), by applying the t-test, it was found that the strength of discrimination is acceptable for the scale paragraphs, where the calculated T value for each item ranged from (2.1-9.2). A good indicator of consistency, scale and homogeneity of paragraphs. As for the second method

<table>
<thead>
<tr>
<th>Variable</th>
<th>Group</th>
<th>No</th>
<th>SMA</th>
<th>Standard deviation</th>
<th>Second Value</th>
<th>Indication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital Culture Scale</td>
<td>Experimental</td>
<td>34</td>
<td>178.25</td>
<td>10.6</td>
<td>Calculated</td>
<td>Table</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>34</td>
<td>162.3</td>
<td>11.3</td>
<td>8.46</td>
<td>2</td>
</tr>
</tbody>
</table>

It is by using the Pearson correlation coefficient, the retest method between the first and second applications and it was (0.80), which is good compared to the criteria established by the psychological and educational literature.

Display results:
It is evident from Table (2) that the T-value (4.17) is greater than Table (2) at the level (0.05) and with a degree of freedom (58), thus rejecting the null hypothesis and the answer to the research question about the effect of the Webinar technique on the achievement of students of the College of Education for the subject of analysis chemistry Automated.

Table (2) the arithmetic mean and standard deviation of the scores of the test scores for Instrumental Analysis Chemistry course. Variable group, the number, the arithmetic mean, standard deviation, the T value, significance

<table>
<thead>
<tr>
<th>Variable</th>
<th>Group</th>
<th>No</th>
<th>SMA</th>
<th>Standard deviation</th>
<th>Second value</th>
<th>Indication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Achievment test</td>
<td>Experimental</td>
<td>34</td>
<td>118.27</td>
<td>10.6</td>
<td>Calculated</td>
<td>Table *</td>
</tr>
<tr>
<td></td>
<td>التضابطة</td>
<td>34</td>
<td>112.38</td>
<td>11.3</td>
<td>4.17</td>
<td>2</td>
</tr>
</tbody>
</table>

It is equal to (2) at a level (0.05) and with a degree of freedom (58)
It was found that the calculated T value (8.46), i.e. greater than Table (2) at the level of (0.05) and with a degree of freedom (58), as shown in Table (3). Thus, the second null hypothesis is rejected.

Table (4) the size of the impact of the webinar technology on every aspect of the digital culture scale

<table>
<thead>
<tr>
<th>Variable</th>
<th>Effect size</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive Domain</td>
<td>0.34</td>
<td>Medium</td>
</tr>
<tr>
<td>Skill Domain</td>
<td>0.5</td>
<td>Big</td>
</tr>
<tr>
<td>Affective Domain</td>
<td>0.07</td>
<td>Small</td>
</tr>
<tr>
<td>The total degree of electronic culture</td>
<td>0.4</td>
<td>Medium</td>
</tr>
</tbody>
</table>
1- The effect of the Webinar technology on students’ trend towards e-learning.
2- The role of the Webinar in improving interactive learning systems for university students.
3- The digital divide among students of the Chemistry Department at the College of Education for Pure Sciences - Ibn Al-Haytham

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