

# Educators or Digital Content Creators? Using ICT Tools and the Technological Challenge Facing Academic Staff Members in the Digital Media Landscape

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## ملخص الدراسة:

يهدف هذا البحث إلى دراسة تصور أعضاء هيئة التدريس في كليات الإعلام المصرية حول فعالية استخدام أدوات تكنولوجيا المعلومات والاتصالات (Information Communication Technology) في إنشاء المحتوى الرقمي التعليمي (Educational Digital Content Creation)، وقبول ومقاومة استخدام هذه الأدوات في العملية التعليمية. تم إجراء الدراسة من ديسمبر 2022 إلى فبراير 2023، وشملت عينة من أعضاء هيئة التدريس في كليات الإعلام في مصر، والمرتبطة بدورات المستوى الجامعي في الجامعات العامة والخاصة. (N=103) تشير النتائج إلى أن أعضاء هيئة التدريس في كليات الإعلام يعبرون عن مستويات معتدلة من التدريب الرقمي ويقدرون بشدة الفعالية التعليمية لأدوات إنشاء المحتوى الرقمي في تطوير العمليات التدريسية الإلكترونية. ومع ذلك، تظهر القضايا والتحديات الرئيسية التي وجدت بأنها مهمة في استخدام هذه الأدوات من قبل المعلمين و قلة الإمكانيات، ونقص الدعم التقني، وعدم التدريب الفعال، وضيق الوقت ونقص كفاءة المعلمين.

**الكلمات المفتاحية:** المحتوى الرقمي التعليمي، أعضاء هيئة التدريس، تكنولوجيا المعلومات.

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### **Abstract:**

This paper investigates the perception of Egyptian Mass Communication higher education academic staff members about the effectiveness of using ICT tools for educational digital content creation (DCC), and the acceptance and resistance to the use of such tools in the educational process. It was conducted from December 2022 to February 2023, with an investigation on a sample (N=103) of academic staff members of Mass Communication Faculties in Egypt, linked to the undergraduate level courses in both public and private Universities. The results indicate that Mass Communication academic staff members express moderate levels of digital training and highly value the didactic effectiveness of DCC tools to develop e-learning training actions. However, the key issues and challenges found to be significant in using these tools by educators and DCC were limited accessibility, limited technical support, and lack of effective training, limited time and lack of educators' competency.

### **Introduction**

The use of Information and Communications Technology (ICT) and Educational Digital Content Creation (DCC) tools in teaching has become more important with the COVID-19 pandemic. However, there is still a deficit in the development of educators' digital competence, especially in the creation of educational digital content. This research aims to analyze the relationship between the perception of academic staff members on the use of ICT and Educational DCC tools and their actual implementation as a teaching strategy to optimize the results of e-learning training actions. The study will explore the existence of gaps in digital teaching competence with respect to gender, age, and teaching experience. Although educators acknowledge the value of ICT in higher education, they continue to encounter obstacles during the processes of adopting these technologies into their teaching and learning. The problem of academic staff members using ICT tools and creating educational digital content is significant in today's education landscape as it can create a gap in learning outcomes between those who embrace technology and those who do not.

## Background

ICT is an important part of most organizations, and the digitalization of teaching has enabled the implementation of educational digital content creation (DCC) tools to optimize the teaching-learning process. [1]. This progress has become more evident during the COVID-19 pandemic. Egyptian educators are adapting to online education, but some have concerns about the use of modern technologies and online learning tools. [2]. Academic staff members considered the pandemic to be a turning point in the use of educational DCC, but the digitization of teaching still requires measures to enhance educators' digital competence and implement tools that optimize results in the classroom. [3].

The global pandemic has sparked a process of reflection on the educational system to create high-performance digital ecosystems accessible to all, such as the European Union's Agenda 2030[4]. Educators are expected to evolve rapidly in the technological world to develop the digital competence of tomorrow's citizens. [5]. However, the effectiveness of this development can only be assessed by evaluating the educators' perception of the use of the ICT and DCC tools and the teaching results obtained in the classroom on concrete actions [6,7].

Educators lack the capacity to adapt their programs to virtual lectures with digital resources, despite the positive perception of ICT and DCC tools. [8,9]. This deficit in the development of digital competence seems to be greater when we refer to the creation of digital content [10,11]. Lecturer-student connections are essential for meaningful transmission of content, attitudes, and procedures, especially when designed to meet the specific needs of the students. [12].

At the base of this imbalance, the development of self-efficacy in the use of ICT and DCC tools by educators is revealed as a key to overcome these difficulties [13]. So is the development of the competencies that educators should acquire for their adaptability to be effective, such as soft skills or professional digital competence [14].

Gender and experience influence the development of digital competencies, with males more likely to use advanced training materials and be more prepared for their use. [15,16]. This research aims to analyze the relationship between the perception of academic

staff members on the use of ICT and DCC tools and their implementation as a teaching strategy to optimize the results of e-learning training actions. [17, 18].

This study aims to deepen the perception of university staff members about their digital teaching competence by differentiating them by gender, age, and teaching experience [12,19], usually the context is not the university setting. Regarding the geographical location of the study participants, there are studies that address the use of educational DCC tools and ICT with didactic applications in Latin America [20,21], although none of them explore the perspective of university teachers. Finally, the identification of gender gaps in the opinion of university teachers is a new topic in the specialized literature, only addressed, to our knowledge, in [14].

Educators must identify the challenges to integrating ICT into their teaching and learning to improve the quality of teaching and learning. [22]. The Ministry of Education is integrating technology into education to improve teaching and learning processes and increase student engagement. [23].

The Ministry of Education focused on physical and digital resources, but neglected human and social resources, such as preparing educators for soft wares and social integration. [23].

Educators are increasingly creating teaching and learning content to engage and communicate with their learners and school community. Examples include handouts, worksheets, lesson plans, presentations, and posters [24].

### **Problem and Significance**

The use of ICT tools and educational digital content creation is becoming increasingly important in education as students expect to be taught using technology. However, some academic staff members are not comfortable with digital tools, which can result in learning gaps. This research aims to identify barriers and challenges to using ICT tools and strategies to overcome them. Understanding the impact of technology use on student outcomes can inform decisions about resource allocation and improve the quality of education. Investigating

this issue is essential for promoting effective teaching practices and improving the learning experience for students.

In view of the above, the following objectives will guide the study:

1. To identify the commonly used ICT tools by academic staff members for teaching and learning in the digital media landscape.
2. To explore the technological challenges faced by academic staff members in the adoption and use of ICT tools in teaching and learning.
3. To determine the level of acceptance and use of ICT tools among academic staff members in the digital media landscape.
4. To investigate the preferred methods of professional development among academic staff members for the effective adoption and use of ICT tools.
5. To compare the level of acceptance and use of ICT tools between educators and educational digital content creators among academic staff members.

### **Literature Review**

ICT has become increasingly popular in higher education, allowing students to access course materials and engage in learning activities. This literature review focuses on the use of ICT tools and educational digital content creation by academic staff members in higher education in Egypt.

#### ***ICT Tools Used by Academic Staff Members in Digital Content Creation:***

Academic staff members in Egypt are increasingly using a variety of ICT tools to enhance their teaching and improve student learning outcomes. According to Ahmed and Khattab [25] some of the most commonly used ICT tools by academic staff members in Egypt are Learning Management Systems (LMS), such as Blackboard and Moodle. These systems provide a range of features, such as online discussion forums, assessment tools, and content sharing, that can enhance the delivery of course content and facilitate communication between staff members and students.

In addition to LMS, academic staff members in Egypt are also using digital content creation tools, such as Camtasia, as noted by Elsayed [26], Staff members can create multimedia content to enhance student engagement and access high-quality learning resources.

Another commonly used ICT tool among academic staff members in Egypt is social media, as noted by Abou-Zaid and Rezk [27]. Social media platforms such as Facebook and Twitter can be used to facilitate communication and collaboration between staff members and students, as well as provide access to a range of educational resources and materials.

Overall, Academic staff members in Egypt are increasingly using ICT tools, but face challenges in effectively using them due to lack of technical support and training, limited access to digital infrastructure, and resistance to change..

#### ***Digital Content Creation:***

Academic staff members in Egypt are increasingly using digital content creation tools such as Camtasia to enhance teaching and improve student learning outcomes. These tools include a wide range of multimedia content, including video lectures, podcasts, and interactive quizzes [26]. The use of digital content creation tools has been shown to improve student engagement and motivation, as well as facilitate access to high-quality learning resources.

Academic staff members in Egypt face a lack of technical support and training, making it difficult to use digital content creation tools and produce high-quality content. [26]. In addition, a lack of time and resources can further hinder the ability of staff members to engage in digital content creation, this can lead to rushed or low-quality content that may not effectively support student learning [26].

Despite these challenges, academic staff members in Egypt are increasingly recognizing the importance of educational digital content creation and are taking steps to incorporate these tools into their teaching practice [27]. Digital content creation can provide a range of benefits for both staff members and students, such as increased engagement, improved access to learning resources, and enhanced student learning outcomes [28]. To effectively support staff members,

it is important to provide ongoing technical support and training, as well as access to adequate resources and funding.

***Challenges Facing Academic staff members using ICT tools and creating digital content:***

Academic staff members using ICT tools and creating digital content in Egypt face several challenges. One of the main challenges is the lack of technical support and training, which can result in low-quality digital content and decreased motivation among academic staff members [26]. In addition, limited access to digital infrastructure, such as high-speed internet and software, is also problematic, particularly in remote areas [25]. Language barriers can also limit the ability of academic staff members to use ICT tools and create digital content, as many of these tools are available only in English. Furthermore, a lack of time and resources can hinder the creation of high-quality digital content [26]. Finally, resistance to change and a reluctance to adopt new technologies can also impede the integration of ICT tools and digital content creation into higher education in Egypt [29].

Academic staff members in Egypt lack the necessary skills and knowledge to effectively use ICT tools and create digital content, resulting in low-quality digital content that can negatively impact student learning outcomes. [25]. The lack of technical support can cause frustration and decrease motivation among academic staff members [26]. Providing technical training and support to staff to ensure they are up-to-date with digital tools and technologies.

Access to digital infrastructure is limited in many parts of Egypt, hindering the adoption and effective use of ICT tools and digital content creation [26]. It is necessary to improve access to digital infrastructure across Egypt, particularly in remote and underserved areas, through increased investment in digital infrastructure and policies that promote digital inclusion.

Language barriers are a major obstacle to the adoption and integration of ICT tools in higher education in Egypt, limiting the ability of non-English speaking academic staff members to effectively use these tools and create high-quality digital content [29]. Providing language support and resources to academic staff members and promoting the use of locally-developed digital tools and content can help overcome language

barriers and improve the relevance and effectiveness of digital resources in Egypt.

Academic staff in Egypt faces a lack of time and resources to create high-quality digital content, making it difficult to balance teaching, research, and administrative duties [26]. This can result in rushed or low-quality content, which can negatively impact student learning outcomes. Additionally, limited resources, such as funding for digital tools and equipment, can further hinder the ability of academic staff members to create high-quality digital content. To address this challenge, it is necessary to provide adequate resources and support to academic staff members, including access to funding, equipment, and technical support, as well as strategies to help them balance their workload and prioritize their digital content creation efforts.

Resistance to change is another challenge that academic staff members in Egypt may face when it comes to using ICT tools and creating digital content. According to Ahmed and Khattab [25], Academic staff members may be hesitant to adopt new digital tools and teaching methods due to concerns about their effectiveness or lack of familiarity. To address this, it is important to provide ongoing training and professional development opportunities to help them build their confidence and skills. Additionally, promoting the benefits of digital tools and resources, such as increased student engagement and access to diverse learning materials, can help overcome resistance to change and promote wider adoption of these technologies in higher education in Egypt.

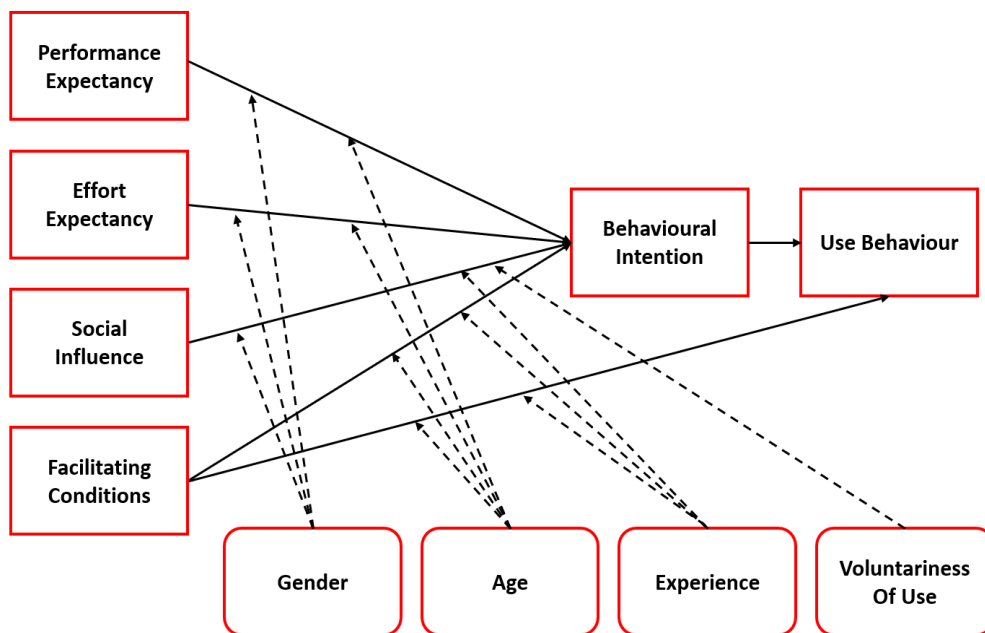
In conclusion, Providing technical support and training to academic staff members can help them create high-quality digital content that enhances student learning. Improving internet access and digital infrastructure can ensure students have access to digital content regardless of their location.

### **Theoretical Framework**

One possible theoretical framework for understanding academic staff members' use of ICT tools and digital content creation in Egypt is the Technology Acceptance Model (TAM). TAM suggests that the intention to use technology is influenced by two main factors: perceived usefulness and perceived ease of use [30]. Academic staff members in Egypt perceive usefulness and ease of use of ICT tools and digital content creation to align with their teaching goals and student learning outcomes.



Another possible theoretical framework is the Unified Theory of Acceptance and Use of Technology (UTAUT). UTAUT model, shown in Figure 1, builds on TAM but also incorporates social and cultural factors. According to UTAUT, the intention to use technology is influenced by four main factors: performance expectancy, effort expectancy, social influence, and facilitating conditions [31]. In the context of academic staff members in Egypt, performance expectancy could refer to how well ICT tools and digital content creation align with their teaching goals and student learning outcomes. Effort expectancy could refer to how easy it is for academic staff members to learn and use the tools. Social influence could refer to the impact of colleagues, students, and other stakeholders on the adoption of technology. Facilitating conditions could refer to the availability of technical support and infrastructure.



**Figure 1.** Unified model of Acceptance and Use of Technology (UTAUT)

The UTAUT model proposes that four key factors influence technology acceptance and use: performance expectancy, effort expectancy, social influence, and facilitating conditions [31]. Performance expectancy

refers to the belief that using technology will improve job performance, while effort expectancy is the belief that it will be easy and require little effort. Social influence is the perception that others in the user's social network support the use of the technology. [32]. Facilitating conditions refer to the degree to which the user believes that the organizational and technical infrastructure is in place to support the use of the technology.

TAM and UTAUT provide a framework for understanding the factors that influence academic staff members' adoption and use of ICT tools and educational digital content creation in Egypt.

### **Research Hypothesis**

**Hypothesis 1a:** There is no significant correlation between the awareness and self-rated expertise level of academic staff.

**Hypothesis 1b:** There is no significant correlation between the self-perception of efficacy and self-rated expertise level of academic staff.

**Hypothesis 2:** There is a significant relationship between the academic staff members' years of teaching experience and the efficacy of ICT tools in supporting teaching and learning.

**Hypothesis3:** There is a negative correlation between the presence of barriers in technology usage and the teaching-learning process of academic staff members

**Hypothesis 4:** There is a significant correlation age, gender, and professional experience, on the preferred method of professional development.

### **Method**

#### **Research Design**

This study used a quantitative research design. The researcher distributed a questionnaire to the intended responders. The questionnaire was created expressly to address the goals of the research regarding the opinions of academic staff members.

#### **Sample Selection**

As the researcher worked as an academic staff member at one of Egypt's top private universities, she initially chose (N=103) academic staff members of the mass communication faculties in the Cairo and Giza

governorates using a purposive sample. Later, as part of the data collection process, respondents assisted in spreading the google forms link as requested by the researcher via the WhatsApp application using the snowball technique, which is used when the research participants recruit or recommend other potential participants for the study.

### **Instrumentation and Data Collection**

To understand the challenges faced by educators as digital content creators, an online questionnaire was conducted that covered the research hypothesis among 103 academic staff members from the faculties of Mass Communication across Egypt. The questionnaire included questions related to the use of ICT tools, the challenges faced by educators in the digital media landscape, and their level of technological skills. Based on discussions in the related literature [33], was used to collect data for this research study. The questionnaire was composed of five parts: 7 items regarding educators' usage of instructional tools and materials, 8 items about preferences for professional development, 7 items about factors that encourage teaching staff usage of technology, 16 items related to teachers' perceptions of self-efficacy of using ICT tools in educational DCC, and 15 items related to barriers that academic staff members faced during technology utilization in the teaching-learning process. The sample responded voluntarily, freely, and anonymously and chose their answers based on their perceptions. All surveys were valid and based on 3-point Likert Scale questions. The various sections of the questionnaire included: (A) *Usage of Instructional Tools and Materials*, (B) *Professional Development about ICT*, (C) *Factors Encourage Technology Usage and Content Creation*, (D) *Perceptions about use of ICT in Digital Content Creation*, (E) *Barriers to Technology Usage*, (F) *Personal Information*.

### **Data Analysis**

The data collected from the respondents was analyzed using the Statistical Packages for the Social Sciences (SPSS) version 20. The researcher used descriptive and inferential analysis to determine the frequency and percentage of the overall population.

## Validity & Reliability

The internal consistency and reliability of a questionnaire used in the study was measured using Cronbach's coefficient alpha, The value of  $\alpha$  was .817, indicating good internal consistency and reliability of the questionnaire items This supports the validity and reliability of the data, providing confidence in its accuracy.

## Findings

### Demographic Factors of the Respondents

The following **Table (1)** The table provides a clear and concise summary of the demographic characteristics of the sample of academic staff members who participated in the study.

**Table (1):** Independent variables, values, and percentages in the sample

Category	Frequency	Percentage
<b>Gender</b>		
Female	91	88.35%
Male	12	11.65%
<b>Age</b>		
26-35	20	19.42%
36-45	40	38.83%
46-55	25	24.27%
55+	18	17.48%
<b>Years of Experience</b>		
1-5 years	12	11.65%
6-10 years	20	19.42%
11-15 years	17	16.50%
16-20 years	8	7.77%
21-30 years	19	18.45%
<b>More than 30 years</b>	27	26.21%
<b>Academic Ranks</b>		
Teaching Assistant	10	9.71%
Assistant Lecturer	15	14.56%
Assistant Professor	20	19.42%
Associate Professor	30	29.13%
Professor	28	27.18%

It shows the frequency and percentage of participants by gender, age, and years of experience, academic ranks. The table highlight that the majority of the participants were female (88.3%) and the most represented age group was 36-45 years old (39.02%). The majority of

the participants had more than 30 years of experience (24%) and was from private universities (64%). The table provides important information about the sample and allows for a better understanding of the demographic characteristics of the participants, which can aid in the interpretation and generalization of the study results.

### ICT resources used by Academic Staff

The majority of academic staff members in this study, 88% have access to a computer at work and among them 76% have access to the Internet. Daily computer usage of Mass Commination academic staff was found to be as follows: 2% uses a computer for less than one hour, 24% uses a computer for between 1 and 3 hours, 31% uses a computer for between 3-5 hours and 43% uses a computer for more than five hours a day. Academic staff indicated their usage of seven types of instructional tools and materials by using a three- point likert-type scale (2=Frequently, 1=Sometimes and 0= Never) ( $\alpha=0,81$ ). The preferred instructional tools according to usage rate are as follows as shown in **Table (2)**: board, overhead projector, multimedia computer, internet/web environment, video, video camera, and printed material.

**Table (2):** Academic staff instructional tools preferences

Instructional Tool/Material	Frequently (%)	Sometimes (%)	Never (%)
Board	80.6	17.5	1.9
Overhead projector	64.1	30.1	5.8
Multimedia computer	56.3	37.9	5.8
Internet/ web environment	42.7	44.7	12.6
Video	31.1	44.7	24.2

This **Table (2)** shows that the most frequently used instructional tool/material was the board (80.6%), followed by the overhead projector (64.1%) and multimedia computer (56.3%). The internet/web environment was used frequently by 42.7% of respondents and sometimes by 44.7% of respondents. Video was used frequently by 31.1% of respondents and sometimes by 44.7% of respondents. The least used instructional tool/material was the video camera, which was used frequently by only 20.4% of respondents and sometimes by 44.7% of respondents. The study results suggest that academic staff members have a preference for traditional instructional tools and materials, such as the board and overhead projector, over newer technologies like video and video camera.

### **Academic Staff Preferred Methods for Professional Development**

Academic staff's preferences for professional development were taken through a three-point Likert-type scale (2=I prefer, 1=Neutral and 0=I don't prefer) ( $\alpha=0.66$ ). Printed materials (98.1%), Internet resources (80.6%), and self-study (78.6%) and participation in seminars and workshops (76.7%) were the most favored knowledge resources for professional development. On the other hand, the majority of academic staff favored every kind of support service: experienced academic staff (94.2%), colleagues in the same field (84.5%) and technical support group within the school (78.6%).

### **The Incentives That Encourage Academic Staff Members Technology Usage and Content Creation**

The participants used a three-point likert-type scale (i.e. 2=Important, 1=Neutral and 0=Not Important) to rate their level of importance on 7 statements about incentives for adoption ( $\alpha=0.73$ ). **Table (3)** shows the percentage of respondents who rated each factor as important, neutral, or not important. Overall, the data suggests that the investments of the institution in the infrastructure of instructional technologies are considered the most important factor that encourages technology usage, with 96.6% of respondents rating it as important. The other factors that were rated as important by a majority of respondents include providing support for the projects towards the expansion of instructional materials (92.0%), reducing workload to provide opportunities to academic staff or developing online content (91.7%), developing policies and plans for the diffusion of instructional technologies (89.0%), and carrying out studies for the integration of technology and content creation into the curriculum (88.7%). It is also interesting to note that the majority of respondents rated investments in support services for instructional technologies (84.7%) and rewarding the technology usage efforts of academic staff in content creation (80.4%) as important. Overall, the data suggests that institutions should prioritize investing in infrastructure and providing support for projects to encourage technology usage among academic staff.

**Table (3):** Percentage of Assessed Factors that Encourage Academic staff members Technology Usage and Content Creation

Factors Encouraging Technology Usage	Important (%)	Neutral (%)	Not Important (%)
Rewarding technology usage efforts of academic staff in content creation	80.4	8.3	11.3
Investments of the institution on infrastructure of instructional technologies	96.6	3.1	0.3
Investments of the institution on the support services of instructional technologies	84.7	12.9	2.4
Developing policies and plans for diffusion of instructional technologies	89.0	9.5	1.5
Providing support for projects towards expansion of instructional materials	92.0	5.8	2.2
Carrying out studies for integration of technology and content creation into curriculum	88.7	9.2	2.1
Reducing workload to provide opportunities to academic staff or developing online content	91.7	4.9	3.4

#### **Academic staff member perceptions of self-efficacy in relation to ICT usage in Content Creation**

Looking at the **Table (4)**, it appears that there is a general agreement among the participants that technology can improve teaching and learning. For example, over 95% of participants agreed that technology supported teaching makes learning more effective, while 94.8% agreed that the use of instructional technologies increases the quality of courses. Additionally, the majority of participants believed that tools such as email, forums, chat, and video content make communication with colleagues and students easier, with 90.5% agreeing with this statement.

However, the table also shows some areas where participants have more mixed opinions. For example, while many participants believe that technology can make effective use of lecture time (77.9%), there is still a significant proportion who are neutral or disagree (17.8% and 4.0%, respectively). Similarly, while the majority of participants believe that they can handle different learning preferences of their students by using instructional technologies, almost 30% of participants are either neutral or disagree.

Overall, the table suggests that while there is generally a positive attitude towards the use of technology in teaching and learning, there are still some areas where further exploration and development may be needed to fully maximize its potential.

**Table (4):** Perceptions of Academic Staff Members about Perceived Self Efficacy on ICT Usage in Content Creation

Perception	Agree (%)	Neutral (%)	Disagree (%)
I don't use computers as much as other resources for instructional purposes.	42.0	5.5	52.5
I know what to do for using computers in instructional environments.	48.5	29.8	21.7
I am aware of the opportunities that computers offer.	28.5	34.0	37.5
I can answer any question my students ask about how to create online content.	19.3	16.3	64.4
I am not sure that I am computer-literate for using computers in my lecture.	23.3	27.0	49.7
I don't want to create online content.	55.5	13.5	31.0
I think that I can use instructional technologies in lecture activities more effectively day by day.	70.9	18.7	10.4
I believe that tools like e-mail, forum, chat and video content will make communication with my colleagues and students easier.	90.5	6.4	3.1
I think that technology supported teaching makes learning more effective.	95.7	2.1	2.2
I think the use of instructional technologies increases the interest of students toward courses.	97.5	2.1	0.4
I think the use of instructional technologies increases the quality of courses.	94.8	4.6	0.6
It is hard for me to explain the use of computer applications to my students.	37.4	21.8	40.8
I can handle different learning preferences of my students having different learning styles by using instructional technologies.	25.8	44.8	29.4
I think technology makes effective use of lecture time.	77.9	17.8	4.3
I think creating online content makes me more productive as a lecturer.	95.4	0.6	4.0
I don't prefer to be assessed about my instructional technology based applications by any other professionals.	54.2	19.3	26.5



As the overall reliability of Table 4 appear to be good, with a Cronbach's alpha coefficient of 0.62. These results suggest Mass Communication teaching staff may benefit from further training and support to effectively integrate technology into their teaching practices.

### **Barriers academic staff face during technology usage**

The participants used a three-point Likert-type scale (i.e. 2=Agree, 1=Neutral and 0=Disagree) to rate their level of agreement on 15 statements about barriers to adoption ( $\alpha=0.87$ ) **Table (5)**. it seems that there are several barriers to technology usage in the academic setting. The top three barriers that are agreed upon by the respondents are the inefficiency of lecturers' technical knowledge to prepare materials based on technology (94.2%), the absence of reward systems for encouraging technology usage (73.9%), and the insufficiency of financial resources for technology integration (69.6%).

Moreover, there are some respondents who disagree that the institution's technical infrastructure about instructional technology is inefficient (38.1%), that there are poor technical and physical infrastructure of learning environments (21.5%), and that there is a deficiency in professional development opportunities for gaining knowledge and skill (18.4%). Overall, the data suggests that there are still some challenges that need to be addressed in order to fully integrate technology into the academic setting, such as the lack of reward systems and financial resources, and the need for better training and professional development opportunities for academic staff.

**Table (5):** Percentage of Assessed Barriers that Social Studies Teachers' Faced During Technology Usage in Teaching-Learning Process

<b>Barriers to Technology Usage</b>	<b>Agree (%)</b>	<b>Neutral (%)</b>	<b>Disagree (%)</b>	<b>Mean</b>	<b>Standard Deviation</b>
<b>Inefficient time to prepare materials based on technology</b>	<b>67.2</b>	<b>9.2</b>	<b>23.6</b>	<b>1.16</b>	<b>0.654</b>
<b>Inefficiency of lecturers' technical knowledge to prepare materials based on technology</b>	<b>94.2</b>	<b>4.3</b>	<b>1.5</b>	<b>0.306</b>	<b>0.474</b>
<b>Problems about accessibility to existing hardware (computer, overhead projector, laptop etc.)</b>	<b>70.6</b>	<b>11.0</b>	<b>18.4</b>	<b>1.09</b>	<b>0.647</b>
<b>Inefficiency of institution's computer laboratory</b>	<b>69.0</b>	<b>4.0</b>	<b>27.0</b>	<b>0.973</b>	<b>0.688</b>

Inefficiency of institution's technical infrastructure about instructional technology	55.2	6.7	38.1	0.817	0.707
Absence of reward systems for encouraging technology usage	73.9	15.0	11.1	1.21	0.557
<b>Barriers to Technology Usage</b>	<b>Agree (%)</b>	<b>Neutral (%)</b>	<b>Disagree (%)</b>	<b>Mean</b>	<b>Standard Deviation</b>
Poor technical and physical infrastructure of learning environments	69.9	8.6	21.5	1.05	0.644
Inefficiency of guidance and support by administration	68.7	8.9	22.4	1.05	0.652
Insufficiency of financial resources for technology integration	69.6	16.9	13.5	1.11	0.597
Inefficiency of instructional software/electronic resources	62.6	13.8	23.6	0.974	0.698
Scarcity in resources on technology for attaining information	50.3	18.7	31.0	0.803	0.720
Deficiency in professional development opportunities for gaining knowledge and skill	65.3	16.3	18.4	1.00	0.648
Lack of interest of academic staff in technology usage	66.6	12.9	20.5	1.01	0.644
Difficulties of improper teaching methods for technology usage	54.6	34.4	11.0	0.874	0.811
Inadequacy of the courses of technology offered to academic staff	80.1	9.5	10.4	1.00	0.662

### Hypothesis Testing

#### **H1a: There is no significant correlation between the awareness and self-rated expertise level of academic staff**

The correlation analysis revealed that academic staff members' awareness of computers is not significantly related to their self-rated expertise level ( $r = .067, p > .05$ ).

**H1b: There is no significant correlation between the self-perception of efficacy and self-rated expertise level of academic staff.**

A significant and strong correlation was found between academic staff members’ self-perception of efficacy and their self-rated expertise level ( $r = .552, p < .01$ )

As shown in **Table (6)**. This indicates that teachers who perceive themselves as more effective in using instructional technology also rate themselves higher in expertise in using computers. The strong correlation coefficient and significant p-value suggest that educators’ self-perception of efficacy could be an important factor in determining their level of expertise and competence in using instructional technology in the classroom. These findings support Hypothesis (1a) and (1b).

**Table (6): Correlational Analysis between self-perception of efficacy and self-rated expertise level of academic staff.**

Relationship	Correlation Coefficient	Significance Level
Awareness of Computers and Self-Rated Expertise Level	0.316	Not Significant
Self-Perception of Efficacy and Self-Rated Expertise Level	0.552	Significant at 0.01 level

**H2: There is a significant relationship between the academic staff members’ years of teaching experience and the efficacy of ICT tools in supporting teaching and learning.**

**Table 7** shows the use of ICT tools in teaching and learning among different groups of academic staff with varying years of experience. The data is presented in a tabular form with six rows representing the six different groups based on years of experience and two columns indicating the mean and standard deviation for each group. The results of the independent t-test suggest that the use of ICT tools is higher among academic staff members with less than 1-5 years of experience compared to those with 21-30 years of experience. The difference between the means was statistically significant, with a p-value of .0005. Therefore, the hypothesis that there is a relationship between the use of ICT tools and years of experience was accepted. Overall, the table provides a clear and concise summary of the data, but it would be useful to include information on the statistical tests performed to determine the

significance of the differences between the groups. Additionally, it may be helpful to provide some context or background information on the research question and the sample population.

**Table (7): Group Statistics**

Years of Experience	Mean	Standard Deviation	N
1-5	2.00	0.707	28
6-10	2.15	0.824	15
11-15	2.08	0.841	20
16-20	1.94	0.741	18
21-30	1.88	0.726	12
More than 30	2.27	0.732	10

**H3: There is a negative correlation between the presence of barriers in technology usage and the teaching-learning process of academic staff members.**

Based on the data presented in **Table 5**, the results indicate that Mass Communication academic staff members encounter various challenges that hinder the integration of technology in the academic setting. The study identified the top three barriers to technology integration as lecturers' technical knowledge, lack of reward systems, and insufficient financial resources. Addressing these challenges through training and support could promote effective technology integration. Overall, the findings support hypothesis 3. The data suggest that addressing these challenges, such as providing professional development opportunities, adequate financial resources, and reward systems, can promote the effective integration of technology in the academic setting[34].

**Hypothesis 4: there is a significant correlation age, gender, and professional experience on the preferred method of professional development.**

To test Hypothesis 4, the preferred methods of professional development for academic staff members in the use of ICT tools were collected through the survey questionnaire, and the data was analyzed using descriptive statistics and inferential statistics such as chi-square tests and ANOVA. The results showed that the preferred methods of professional development varied based on age, gender, and experience.

**Age:** The results showed that younger academic staff members (under 35 years old) preferred online courses and webinars as their preferred method of professional development, while older academic staff members (over 35 years old) preferred face-to-face training workshops and conferences.

**Gender:** The results showed that there was no significant difference in the preferred methods of professional development between male and female academic staff members.

**Experience:** The results showed that academic staff members with less than 5 years of experience preferred online courses and webinars, while those with more than 5 years of experience preferred face-to-face training workshops and conferences.

These results have practical implications for creating professional development programs that cater to the diverse needs of academic staff members in different contexts. It is suggested that similar strategies and methods, such as online courses for younger staff and face-to-face workshops for more experienced staff, can be used in professional development programs for both public and private universities. Additionally, the findings support Hypothesis 4 that preferred professional development methods for academic staff members in the use of ICT tools vary based on their age, gender, and experience.

**Table 8.** Preferred Method of Professional Development Chi-square value p-value

Variable	Category	Preferred Method of Professional Development	Chi-square value	p-value
Age	Under 35	Online courses, webinars	8.23	0.004
Age	Over 35	Face-to-face training workshops, conferences	8.23	0.004
Gender	Male	No significant difference	-	-
Gender	Female	No significant difference	-	-
Experience	Less than 5 years	Online courses, webinars	12.47	<0.001
Experience	More than 5 years	Face-to-face training workshops, conferences	12.47	<0.001

The chi-square value and p-value are used to test the significance of the relationships between the variables and the preferred methods of professional development. In this example, the results indicate that the preferred methods of professional development vary significantly based on age ( $p=0.004$ ), experience ( $p<0.001$ ). The study found no significant difference in the preferred methods of professional development between male and female academic staff members, nor between academic staff members from public or private universities.

## **Discussion**

This research paper explores the challenges and opportunities that academic staff members face in using ICT tools for teaching and learning. The researcher draws upon various studies to provide a comprehensive analysis of the issue. One of the studies reviewed in the paper is Falloon's Teacher Digital Competency (TDC) framework [1], the pandemic has forced academic staff members to adapt to new teaching modalities and use of digital tools, resulting in increased support and training. A professional digital competence framework developed by the Norwegian Centre for ICT in education provides a comprehensive framework for assessing the digital competence of educators. [5]. Other studies reviewed in the paper explore the relationship between educators' ICT self-efficacy, collegial collaboration, and the use of ICT in teaching practice, as well as the role of digital pedagogy and gender in the adoption of ICT tools for teaching and learning [17,18,20,21]. Overall, the paper provides a comprehensive analysis of the challenges and opportunities that academic staff members face in using ICT tools for teaching and learning and in Digital content creation. The researcher argues that digital competence is essential for academic staff members to adapt to the changing digital media landscape and effectively integrate ICT tools into their teaching practice. Additionally, the researcher highlighted the importance of educator training and professional digital competence frameworks in supporting academic staff members in this process.

## **Conclusion**

In conclusion, the adoption and use of ICT tools in teaching and learning and educational digital content creation is influenced by several factors, such as professional development training, self-perception of efficacy, and younger generations with less experience. These findings have important implications for educational institutions, as they suggest that training programs and support for digital content creation could be effective in promoting the adoption and use of ICT tools among academic staff. Furthermore, efforts to attract and retain younger generations of educators could also contribute to increasing the use of technology in education. However, it is important to note that the data presented may have limitations.

### **Study Limitations**

This study provides valuable insights into the technology use and professional development of Mass communication academic staff members, but there are limitations to consider. The small sample size and self-reported nature of the data limit the generalizability and accuracy of the findings. Future studies should aim to address these limitations by using larger and more diverse samples and objective measures to gain a better understanding of the factors that influence technology adoption and professional development.

### **Study implications**

This study's results have implications for educational policymakers and academic institutions to address the barriers to technology usage and promote the use of technology for teaching and learning.

### **Recommendation for future studies**

The study provides several recommendations for future research.

1. Replicating it with a larger and more diverse sample would increase the generalizability of the findings.
2. Using objective measures of technology use and professional development should be considered in addition to self-reported data.
3. Investigating the impact of contextual factors, such as institutional culture and leadership support, on the acceptance and use of technology among academic staff members is recommended.
4. It is essential to explore the effectiveness and cost-effectiveness of various professional development methods and interventions to improve the technology skills and confidence of academic staff members.
5. Examining ethical, legal, and social implications of technology use and innovation in the academic context, including issues related to privacy, security, intellectual property, and social justice, is crucial.

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