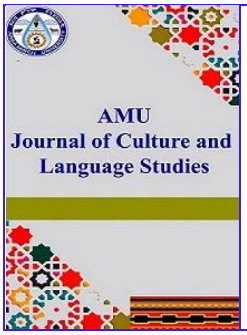

AMU Journal of Culture and Language Studies

DOI: https://doi.org/10.59122/ 1447372

Volume: 2 Number: 1 , 2023 , Pages: 63~72

ISSN:2789-2581

Received: 01 April 2023;

Accepted: 05 May 2023;

Published: 30 June 2023;

Challenges Faculty Faced while Utilizing ICT Tools for Self-Directed Professional Development at Selected Public Universities

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ABSTRACT

This study investigates the prevalent challenges faculty face when utilizing information and communication technology (ICT) for self-directed professional development (SDPD) at selected public universities in Ethiopia. To address the study's objectives, we employed a cross-sectional survey design to collect data from a large sample size. We selected 205 lecturers through a systematic random sampling technique for the questionnaire survey. We applied mean ranks to identify the prevalent challenges faculty faced when utilizing ICT for SDPD. The results highlighted the multifaceted challenges faculty faced, of which slow internet connections, limited ICT training, a lack of technical support, and power interruptions are predominant. Policymakers and educational leaders are suggested to create more enabling conditions for faculty to effectively utilize technology for professional growth and development. Additionally, universities are recommended to provide comprehensive ICT training programs and technical support systems to address the challenges faculty face.

Keywords: Challenges**,** ICT for professional development; ICT utilization; ICT tools; Self-directed professional development

1. INTRODUCTION

The 21st century has seen increased information and communication technology (ICT) available at home, in schools, and in workplaces. It offers teachers new opportunities for professional development, provides models of good practice and quality resources, facilitates dialogue among educators, and serves as a facilitator to re-evaluate current teaching practices and assumptions (Polly & Hannafin, 2010). Besides, ICT can improve access to professional development, especially in remote areas (INEE, 2015). Studies indicate that ICT-enabled professional development is more effective than traditional methods (Beglau et al., 2011; Lawless & Pelligrino, 2007).

The Ethiopian government has made significant efforts to leverage ICT to transform the education sector. To this effect, the government has implemented key initiatives to widen access to education, support literacy, and facilitate educational delivery and training (FDRE, 2016). Besides, it has formulated and implemented successive national ICT policies, recognizing the need to transform the country into a knowledge economy (FDRE, 2009; 2016) and has demonstrated its commitment to ICT in education in the Education Development Roadmap (FDRE, 2018). To implement the ICT initiatives and policy, the government established university ICT directorates to address resource and staffing shortages, increasing enrollment, innovative teaching, and research undertakings (MoE, 2012). Therefore, universities in Ethiopia are expected to leverage ICT to execute the aforementioned purposes (MoE, 2012) even though ICT diffusion in Ethiopian education is relatively new (Alemu, 2017; Tibebu et al., 2009).

While progress has been made in incorporating ICT for teachers' professional development, it is crucial to examine the challenges faculty face when utilizing ICT for self-directed professional development (SDPD) to substantially improve education quality. In this regard, studies have identified several barriers that affect the use of ICT for teachers' SDPD which include poor internet speed, lack of institutional support services, heavy workload, lack of technological skills, and insufficient technical support (Bristi, 2014; Miller & Kumar, 2022). Additionally, lack of training opportunities is among the factors affecting ICT use in sub-Saharan African nations (Hennessy et al., 2010).

Moreover, the lack of ICT resources and infrastructure sustainability, shortage of teachers' ICT pedagogical skills and positive attitudes, and lack of ICT training and motivation to use ICT

(Sang et al., 2010) are the main barriers to using ICT to improve professional development. Teachers' knowledge, skills, attitudes, and beliefs toward using ICT (Hew & Brush, 2007) are also among the barriers that affect ICT use for SDPD. Furthermore, institutional, individual, and infrastructural determinants shape and influence the ICT use of faculty (Ferede et al., 2022). Additionally, inadequate internet access, lack of ICT skills, extra workload, and time constraints have been discovered as major barriers to using the internet as a meditational tool (Boersma & Getu, 2018).

Recognizing the existence of possible barriers to using ICT in education, the Ethiopian Federal Ministry of Education proposed a plan for universities to establish ICT directorates to solve them. The goal was to help reduce the challenges faculty members face when utilizing ICT for various educational purposes. However, there is a dearth of studies examining the specific challenges faculty members encounter while using ICT for professional development. Therefore, it is crucial to investigate the challenges faculty face while utilizing ICT for SDPD to improve education quality.

2. METHODOLOGY

2.1. Research Design

This study investigates the challenges faculty face when utilizing ICT for SDPD. To address the study's objectives, we adopted a cross-sectional survey design to collect quantitative data from a large sample size.

2.2. Participants of the Study

The participants of this study are from the College of Social Sciences and Humanities of Arba Minch, Dilla, Sodo, and Jinka Universities. The total population at the selected universities in the mentioned Colleges in the academic years 2023 and 2024 was about 752. We selected 205 participants, through a systematic random sampling technique, for the questionnaire survey.

2.3. Measurement

To investigate the prevalent challenges faculty face when utilizing ICT for SDPD, we employed a 5-point Likert scale questionnaire. The items ranged from 1=strongly disagree to 5=strongly agree, with 3=undecided as the midpoint. The items focus on challenges related to teachers,

administrative and technical personnel faculty encounter in their attempt to use ICT for SDPD. The tool has a reliability value of .84 and has been found consistent enough to measure the variables.

2.4. Method of Analysis

We employed aggregated mean scores of individual items to organize and analyze data. We used mean rank in descending order to indicate the prevalent challenges faculty face when utilizing ICT for SDPD.

3. RESULTS AND DISCUSSION

3.1. Results

Challenges Faculty Faced while Utilizing ICT Tools for SDPD

	Issues	N	Std. D	Mean	Rank
1	Slow internet connection	205	.98	4.06	1
2	Limited ICT training	205	.96	3.90	2
3	Lack of technical support	205	1.05	3.64	3
4	Power interruption/ blackout	205	1.07	3.58	4
5	Faculty workload	205	1.04	3.42	5
6	Lack of motivation	205	1.06	3.38	6
7	Time-consuming nature of ICT	205	.86	3.19	7
8	Belief ICT does not fit one's learning	205	1.09	2.59	8

The data reveals a multifaceted set of challenges that faculty faced when using ICT tools for SDPD. The top challenge, with the highest mean score (M = 4.06), was a slow internet connection. This indicates that poor internet infrastructure was a major deterrent for faculty to effectively utilize ICT tools to develop their profession. Slow internet would make it difficult to access online resources, collaborate with others, and leverage the full capabilities of digital tools. The second prevalent challenge was the limited availability of ICT training (M = 3.90). This suggests that faculty lacked the necessary skills and knowledge to use ICT tools efficiently. Proper training is crucial for empowering faculty to integrate technology into their SDPD processes. Without adequate support and professional development opportunities, faculty may struggle to maximize the benefits of using ICT.

The third challenge (M = 3.64) was a lack of technical support. When faculty encounter technical issues or need assistance navigating new software/platforms, having access to reliable IT support is essential. The absence of such support can hinder faculty's ability to effectively troubleshoot problems and leverage ICT tools for professional development. Power interruptions/blackouts,

ranked fourth (M = 3.58), pose another significant barrier. An unreliable electricity supply can disrupt the use of digital tools and hamper faculty productivity when working on SDPD projects.

Faculty workload (M = 3.42) was also identified as a challenge. If faculty members are already overburdened with teaching, research, and other responsibilities, integrating new ICT tools into their workflows may be perceived as an additional time-consuming task. The data also reveals that lack of motivation (M = 3.38) and the time-consuming nature of ICT (M = 3.19) were ranked sixth and seventh, respectively. This suggests that while faculty members recognize the potential benefits of using ICT tools, a lack of motivation and the perception of ICT as time-consuming may dissuade them from making the effort required to learn and implement these tools, thereby hindering their full embrace of these technologies in their SDPD activities. Interestingly, the faculty perception that technology does not fit one's learning style ranked the lowest (M=2.59), which is below the midpoint average of 3.00. This finding implies that faculty members generally perceive technology as fitting their learning style. This result suggests that the majority of faculty members are comfortable and adept at using technology SDPD practices.

The data highlights a range of interconnected challenges that faculty face when attempting to utilize ICT tools for SDPD. The top challenges, such as slow internet connection, limited ICT training, lack of technical support and power interruptions/blackouts, are primarily associated with technical and administrative barriers. While ICT training and lack of technical support could be addressed at an institutional level, slow internet connection and power interruption/blackout are external challenges that are beyond the capacity of an individual institution to resolve.

The lower-ranked challenges, including lack of motivation, the time-consuming nature of ICT, and the belief that ICT is compatible with one's learning style are teacher-related while faculty workload is an administrative issue. Although the faculty members have a view that ICT is compatible with their learning styles, they have lack of motivation and think ICT is time consuming. These challenges suggest that even when the technical and administrative barriers are addressed, faculty may still face personal and psychological hurdles in fully integrating ICT tools into their SDPD activities.

In summary, the data highlights a multifaceted set of challenges that faculty encountered when utilizing ICT tools for SDPD. The top challenges are primarily technical and administrative, while the lower-ranked challenges are more of teacher-related. Addressing this range of

interconnected barriers will be crucial for empowering faculty to effectively leverage ICT tools in their self-directed professional development.

3.2. Discussion

The current study found a range of interconnected challenges that faculty face when attempting to utilize ICT tools for self-directed professional development (SDPD). The top challenges identified include slow internet connection, limited ICT training, lack of technical support, and power interruptions/blackouts. These findings corroborate previous studies that have also highlighted poor internet speed or connectivity (Boersma & Getu, 2018; Bristi, 2014; Miller & Kumar, 2022), inadequate ICT training opportunities (Hennessy et al., 2010; Sheunmaker et al., 2001; Sang et al., 2010), insufficient technical support (Addandani, 2011; Al-Alwani, 2005; Almosa, 2002; Bristi, 2014; Miller & Kumar, 2022; Shabat & Baneamah, 2009; Waite, 2004), and poor infrastructure leading to power interruptions/blackouts (Ferede et al., 2022) as significant barriers to effective ICT use for professional development.

These barriers can severely limit the degree to which faculty can successfully utilize technology for their professional growth. While some of these challenges, such as lack of ICT training and technical support, could potentially be addressed at an institutional level, the issues of slow internet connection and power interruptions/blackouts are external challenges that are beyond the capacity of individual institutions to resolve. Addressing these infrastructure-related barriers would likely require larger-scale interventions and investments at the regional or national level.

Besides, the study discovered that faculty members often have heavy workloads and thought that ICT consumes time can limit their capability to effectively integrate ICT into their professional development. Early studies have consistently verified these challenges, with researchers like Bristi (2014), Holden et al. (2008), Miller and Kumar (2022), Lawless and Pellegrino (2007), and Waite (2004) highlighting the significant workload issues faced by teachers. Similarly, thought that ICT consumes time have also been identified as a key barrier, as evidenced by the work of Alsulaimani (2012), Amoudi and Sulaymani (2014), Boersma and Getu (2018), Lawless and Pellegrino (2007), Holden et al. (2008), and Waite (2004).

However, the current study found that faculty motivation to use ICT and the belief that ICT fits their learning styles have been in favorable of ICT use for professional development. These findings are in contrast with earlier studies, such as those by Cox et al. (2004), Hennessey et al.

(2005), and Sang et al. (2010), which discovered poor teachers' motivation to use ICT. Additionally, the belief that ICT does not fit one's learning style, as reported by Hew and Brush (2007) and Ferede et al. (2022), was not supported by the current study's findings, which indicated that faculty members have a positive attitude towards using ICT for their professional development.

4. CONCLUSION

The current study highlights the multifaceted nature of the challenges faculty faced when attempting to leverage information and communication technology (ICT) for self-directed professional development. The key challenges that faculty faced include slow internet connection, limited ICT training, lack of technical support, and power interruptions/blackouts. Additionally, faculty members often have heavy workloads and time constraints that can limit their ability to effectively integrate ICT into their professional development. However, the current study found that faculty motivation to use ICT and the belief that ICT fits their learning style are in favorable of ICT use for professional development. While some of these challenges, such as limited ICT training, lack of technical support and workload can potentially be addressed at the institutional level, the more systemic barriers related to infrastructure- slow internet connection and power interruptions/blackouts require more comprehensive and coordinated interventions. These infrastructure-related challenges are external factors that are beyond the capacity of individual institutions to resolve, likely requiring larger-scale regional or national interventions.

By addressing these barriers, policymakers and educational leaders can create more enabling conditions for faculty to effectively utilize technology to enhance their professional growth and development, ultimately benefiting both the faculty members and the students they serve. Institutions should provide comprehensive ICT training programs and robust technical support systems to address the internal challenges faced by faculty. Institutions should consider implementing strategies to help faculty manage their workloads and allocate sufficient time for professional development activities involving ICT.

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