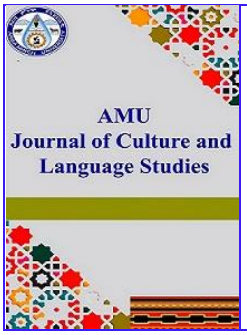

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Challenges Faculty Faced in Utilizing ICT Tools for Self-Directed Professional Development at Selected Public Universities in Ethiopia

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ABSTRACT

This study aims to examine the challenges faculty face when utilizing information and communication technology (ICT) for self-directed professional development (SDPD) at selected public universities in Ethiopia. To address this objective , we adopted a cross-sectional survey design to guide the study and collect data from a large sample size. We selected 205 faculty through a systematic random sampling technique for the questionnaire survey. To identify prevalent challenges faculty faced in utilizing ICT for SDPD, we applied mean ranks. The results indicated slow internet connections, limited ICT training, a lack of technical support, and power interruptions are prevalent challenges. Policymakers and educational leaders are suggested to solve system level challenges to create more enabling environments for faculty to effectively utilize technology for professional development. In addition, universities are recommended to provide comprehensive ICT training programs and technical support to alleviate the challenges faculty face.

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

1. INTRODUCTION

Information and communication technologies (ICTs) are now available at home, schools, and in workplaces. It offers teachers new opportunities for professional development, provides good practice and quality resources, facilitates dialogue among educators, and serves to re-evaluate current teaching practices and assumptions (Polly & Hannafin, 2010). In addition, ICT 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 implementing key initiatives to widen access to education, support literacy, and facilitate educational delivery and training (FDRE, 2016). Moreover, the government 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; MoSHE, 2020). Therefore, universities in Ethiopia are expected to utilize 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 related factors could shape and influence the ICT utilization of faculty (Ferede et al., 2022). Inadequate internet access, lack of ICT skills, extra workload, and time constraints have been among the main barriers impeding the use of the internet as a meditational tool for learning (Boersma & Getu, 2018).

Cognizant of the presence of potential barriers affecting ICT utilization in education, the Federal Ministry of Education of Ethiopia initiated and reinforced the public universities to establish ICT directorates to solve these barriers if happened (MoE, 2012; MoSHE, 2020). The goal of ICT directorate was to help reduce the challenges faculty members face when using ICT for educational purposes (MoE, 2012; MoSHE, 2020). Nevertheless, there is a lack of studies that examined the specific challenges faculty members' face while using ICT for their professional development. Hence, it is essential to investigate the challenges faculty face while utilizing ICT for SDPD.

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 discloses multiple challenges that faculty faced while using ICT tools for SDPD. Slow internet connection with the highest mean score (M = 4.06) was the core challenge deterring faculty to effectively utilize ICT tools to improve their profession. Thus, it might be difficult for faculty to access online resources, cooperate with others, and make use of the full facilities of digital tools. The second dominant challenge the faculty faced was the limited availability of ICT training (M = 3.90). Although it is true that proper training is important to prepare faculty to integrate technology into their SDPD, limited availability of ICT training at universities would certainly deficit their skills and knowledge to use ICT tools efficiently. Limited ICT training opportunity and inadequate support could make the faculty struggle to exploit the benefits of ICT for professional development.

The third challenge that faculty faced (M = 3.64) was a lack of technical support. When faculty members encounter technical issues or need assistance while using new software/platforms, getting reliable information technology (IT) support is important. The nonexistence of such IT support can hamper the staff ability to creditably troubleshoot problems and utilize ICT tools for professional development. Power interruptions/blackout (M = 3.58) is a substantial system level

barrier that may not be solved at institution level. An unreliable electricity source can interrupt and influence productivity when faculty use of digital tools for their professional development.

Faculty workload (M = 3.42) was also found as a challenge influencing ICT utilization for SDPD. Faculty members are already overburdened with teaching, research, and other responsibilities. Integrating ICT tools for professional development might be perceived as an additional time-consuming task. The data also unveiled that faculty perceived they have lack of motivation (M = 3.38) and they feel ICT (M = 3.19) is time-consuming in its nature. Although faculty members recognize the potential benefits of ICT tools, their perceived lack of motivation and the time-consuming beliefs of ICT could discourage them from making the effort required of them to implement these tools, which in turn, could impede their full potential to use ICT in their SDPD activities. The faculty rated technology does not fit to their learning style with the average of (M=2.59) below the neutral point of 3.00, which indicated they disagreed to the issue as per the range of options in the Likert scale. Therefore, the result implies that the faculty members perceived technology fit their learning style to improve their SDPD using ICT.

The results of this study highlighted a range of connected challenges faculty members faced while utilizing ICT tools for SDPD. The major challenges, which include slow internet connection, limited ICT training, lack of technical support and power interruption/blackout are mainly related with technical and administrative barriers at different levels. Consequently, slow internet connection and power interruption/blackout are external system related challenges beyond the capacity of an individual institution to resolve. However, ICT training and lack of technical support could be addressed at an institutional level.

3.2. Discussion

Faculty faced a variety of connected challenges when they endeavored to utilize ICT tools for self-directed professional development (SDPD). Slow internet connection, limited ICT training, lack of technical support, and power interruption/blackout are some of the challenges they faced. Previous studies support the findings of the current study that 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), inadequate technical support (Addandani, 2011; Al-Alwani, 2005; Almosa, 2002; Bristi, 2014; Miller & Kumar, 2022; Shabat & Baneamah, 2009; Waite, 2004), and power interruption/blackout (Ferede et al., 2022) have been among major barriers to effective ICT use for professional development.

These barriers have the potential to severely limit the level to which faculty utilize technology for their professional development.

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 workload is one of the challenges teachers faced impeding their utilization of ICT(Bristi, 2014; Holden et al., 2008; Miller & Kumar, 2022; Lawless &Pellegrino, 2007; Waite , 2004). Similarly, studies evidenced beliefs that ICT consumes time have also been recognized as a main obstacle (Alsulaimani, 2012; Amoudi & Sulaymani, 2014; Boersma & Getu, 2018; Lawless & Pellegrino, 2007; Holden et al., 2008; 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 disclosed several challenges faculty faced while utilizing the information and communication technology (ICT) for self-directed professional development. The fundamental challenges that faculty faced include slow internet connection, limited ICT training, lack of technical support, and power interruption/blackout. Moreover, heavy workloads and time constraints are among the challenges that can limit their capacity to effectively integrate ICT into their professional development. Nonetheless, the current study also shown the faculty members have favorable belief that ICT fits their learning style and are motivated to use ICT for professional development. While some of the 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 interruption/blackout require more comprehensive and synchronized interventions at a state level.

Respective institutions involved in this study are suggested to be responsible for comprehensive ICT training programs and provide reliable technical support system to address the internal challenges the faculty faced. In addition, the concerned institutions are recommended to consider strategies to help faculty reduce their workloads and assign adequate time for ICT integrated professional development activities. Furthermore, policymakers and educational leaders are suggested to work to alleviate system level challenges, like power interruption and slow connectivity, to create conducive conditions for faculty to effectively utilize technology to improve their professional development to eventually enhanced quality of education.

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