

# SOCIAL COGNITIVE THEORY AND DIGITAL SKILLS ACQUISITION: A CASE OF YOUNG WOMEN AT A TEACHER'S COLLEGE IN HARARE

DEBRA B. RUSHWAYA<sup>1</sup> AND SITETE BERNARD<sup>2</sup>

## Abstract

*This study investigates the relevance of the Social Cognitive Theory (SCT) (developed by Albert Bandura, 1986) in digital skills acquisition among young women at a teachers' college in Harare, Zimbabwe. The digital divide disproportionately affect young women in developing countries, including Zimbabwe, who face significant barriers to accessing digital technologies and acquiring digital literacy. Employing a mixed-methods approach, the research explore how observational learning, reinforcement, and self-efficacy influence digital skills acquisition, while also identifying the challenges encountered by these student teachers. A survey was administered to 200 young female student teachers, supplemented by semi-structured interviews with 20 of the selected participants. The findings indicate that observational learning, reinforcement, and self-efficacy play crucial roles in the acquisition of digital skills. Observational learning, where students acquire skills by observing peers and instructors, was reported by 80% of the participants. Positive reinforcement from instructors and peers significantly motivated 75% of the participants, while 90% believed in their ability to acquire*

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<sup>1</sup> Department of Curriculum and Education Philosophy, Zimbabwe Ezekiel Guti University, Bindura, Zimbabwe ORCID ID <https://orcid.org/0009-0008-5336-2159>, drushwaya@staff.zegu.ac.zw<sup>2</sup> Department of Education, Catholic University of Zimbabwe, Harare, Zimbabwe, ORCID ID <https://orcid.org/0009-0002-1417-2834>, bsitete@cuz.ac.zw

<sup>2</sup> Department of Education, Catholic University of Zimbabwe, Harare, Zimbabwe, ORCID ID <https://orcid.org/0009-0002-1417-2834>, bsitete@cuz.ac.zw

*digital skills, highlighting the importance of self-efficacy. Challenges identified included limited prior experience with digital technologies, time constraints, lack of instructor support, self-doubt, and insufficient home support. The study concludes that a comprehensive approach, incorporating SCT principles and addressing these challenges, is essential to enhance digital literacy among future female educators in Zimbabwe.*

**Keywords:** *cognition, acquisition, digital skills*

## INTRODUCTION

The acquisition of digital skills has become an essential component of modern life, enabling individuals to effectively participate in the global economy and access various opportunities. However, the digital divide persists, with women, particularly those in developing countries, facing significant barriers to digital skills acquisition (Chikwata, 2012). In Zimbabwe, young women are disproportionately affected by limited access to digital technologies and digital literacy training (Moyo, 2019). This study explores the relevance of the Social Cognitive Theory (SCT) in digital skills acquisition among young women in Zimbabwe, using a case study of a teachers' college in Harare.

## BACKGROUND

According to Muema (2019), the digital revolution transformed the way people lived, worked, and interacted. Digital skills were now essential for meaningful participation in the economy, education, and society. However, women in developing countries, including Zimbabwe, face significant challenges in accessing digital technologies and acquiring digital skills (Moyo, 2019). In Zimbabwe, the digital divide is perpetuated by limited access to digital infrastructure, high costs of digital devices and internet services, and inadequate digital literacy training (Chikwata, 2012). Young women are disproportionately affected by these challenges, which exacerbate existing gender disparities in education, employment, and economic

empowerment (Ezziane, 2007). This is particularly pertinent given the global shift towards digital competencies in all sectors.

SCT, developed provides a framework for understanding how people acquire new skills and behaviours. The theory posits that learning is a cognitive process that occurs through observation, imitation, and reinforcement (Bandura 1986). SCT has been applied in various contexts, including education and health, to promote behaviour change and skill acquisition. This study seeks to contribute to the existing body of knowledge on digital skills acquisition among young women in Zimbabwe, particularly student teachers, by exploring the relevance of SCT in this context. The study investigates how the components of SCT, including observational learning, reinforcement, and self-efficacy, influence digital skills acquisition among young women at a teachers' college in Harare. This research is crucial in addressing the specific needs of female student teachers instrumental in implementing the new Heritage-based Education 5.0 curriculum, which emphasises digital competence.

## **STATEMENT OF THE PROBLEM**

Despite the growing importance of digital skills in the modern economy and in teaching and learning, young student teachers in Zimbabwe continue to face significant barriers to digital skills acquisition, mainly because of their backgrounds. If no significant attention is given to the need to address this situation, the digital divide will persist, with young female teachers having to try to implement the requirements of the new curricula with limited access to digital technologies, high costs of digital devices and internet services, and inadequate digital literacy training (Moyo, 2019). This poses a substantial threat to the quality of education and professional development of these future educators. This study, therefore, seeks to address the knowledge gap on the relevance of the Social Cognitive

Theory in digital skills acquisition among young female student teachers in Zimbabwe.

## **OBJECTIVES OF THE STUDY**

- This study is guided by the following objectives:
- To explore the relevance of the Social Cognitive Theory in digital skills acquisition among young women at a teachers' college in Harare.
- To investigate the role of observational learning, reinforcement, and self-efficacy in digital skills acquisition among young female student teachers.
- To identify the challenges faced by young student teachers in acquiring digital skills.

## **RESEARCH QUESTIONS**

1. The following research questions give direction to the study:
2. How does the Social Cognitive Theory explain digital skills acquisition among young women at a teachers' college in Harare?
3. What role does observational learning, reinforcement, and self-efficacy play in digital skills acquisition among young women?
4. What challenges do young female student teachers face in acquiring digital skills?

## **LITERATURE REVIEW AND THEORETICAL FRAMEWORK**

### **THE DIGITAL DIVIDE AND GENDER DISPARITIES**

The acquisition of digital skills is universally acknowledged as a prerequisite for meaningful participation in the contemporary economy, education, and society (Muema, 2019). However, a persistent digital divide exists, which disproportionately affects women in developing nations, including Zimbabwe (Chikwata, 2012; Moyo,

2019). This disparity is driven by a confluence of factors: limited access to digital infrastructure, high costs associated with devices and internet services, and insufficient digital literacy training (Chikwata, 2012).

This challenge is especially acute for young women, exacerbating existing gender inequities in educational and economic empowerment (Ezziane, 2007). Research indicates that lacking digital literacy effectively excludes women from crucial lifelong learning and professional development opportunities (Lin *et al.*, 2013). The global shift towards digital competencies, accelerated by events like the COVID-19 pandemic, has made digital literacy a critical need for future educators who must implement modern curricula, such as Zimbabwe's Heritage-based Education 5.0 (Ahmad *et al.*, 2022).

Furthermore, global statistics underscore the depth of this issue. A UNICEF report (2023) highlighted that in low-income countries, 90% of adolescent girls and young women (aged 15–24) were offline, compared to 78% of adolescent boys and young men. This translates to only 44 adolescent girls and young women using the internet for every 100 adolescent boys and young men who do. Such figures emphasise that the digital skills gap is a severe barrier to achieving Sustainable Development Goals (SDG), particularly in equitable education (SDG4.4.1).

The Social Cognitive Theory, posits that learning and behaviour is influenced by observing others, imitating their actions, and receiving reinforcement or punishment. The theory states that learning is a cognitive process influenced by observation, experience, and reinforcement; self-efficacy, motivation, and environment interacted to shape behaviour (Bandura, 1977). SCT emphasises the importance of perceived incentives, self-efficacy, and personal standards in explaining people's motivation (Bandura, 2001). Bandura theorises that

virtually all learning phenomena can occur by observing other people's behaviour and its consequence (Bandura, 1986).

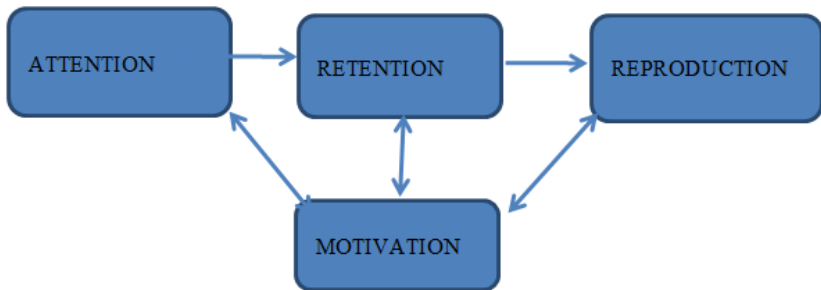
Bandura (2001) also suggests that the process of observational learning is governed by four key aspects: attention, retention, reproduction, and motivation. According to this theory, these processes are represented as follows:

**Attention:** Noticing and attending to observed behaviours.

**Retention:** Remembering observed behaviours.

**Reproduction:** Imitating observed behaviours.

**Motivation:** Receiving reinforcement or punishment for behaviours.



**Figure 1:** The processes of observational learning according to the Social Cognitive Theory

Ahmad *et al.* (2022) states that, social cognitive learning is where an individual gains knowledge through observation and imitation of others' behaviours in different environments and settings. This method of learning can also be implemented through online learning. Consequently, online learning has shown significant growth recently, as education combined with the internet to provide people with the opportunity to gain new skills (Hakimi *et al.*, 2023). Online learning has become more centric in people's lives since the COVID-19 outbreak. The pandemic forced schools, universities, and companies into remote working, which boomed the usage of online learning. This global shift

further underscores the critical need for digital literacy among educators (Ahmad *et al.*, 2022).

Digital literacy is one of the most important issues that women confront today. Lacking digital literacy excludes women from lifelong learning and development (Lin *et al.*, 2013). With the Social Cognitive Theory's main emphasis on observational learning, young female student teachers can acquire digital skills by way of vicarious learning, making use of group tasks to allow those having trouble learning to watch their colleagues demonstrate concepts (Social Learning Theory, 2014). As Education 5.0 also suggests, learning in higher and tertiary institutions does not have to be centred on the lecturer, and as people who are being trained to be teachers of tomorrow, they need as much practical and hands-on experience as possible.

Just like Maslow's Hierarchy of Needs Theory proposes, motivation is key. For a young woman growing up in a Zimbabwean community with a culture that is somehow struggling with the evolution of empowering women, motivation becomes a key driving factor for digital skills acquisition to be made possible. In today's information society, digital literacy is an essential skill for professional and career development, lifelong learning and distance education, as well as for social inclusion, and freedom of expression and opinion (Ezziane, 2007 in Lin *et al.*, 2013). Teacher training colleges in Harare also often enrol students from outside the capital for exposure purposes. This dynamic presents a unique opportunity for observational learning.

SCT brings in the aspect of self-efficacy which, according to Bandura (2014), is an individual's belief in his or her capacity to execute behaviours necessary to produce specific performance attainments. When working with young women, there is need to help them build that confidence they needed to actually accept that even after high school at some rural school in Zimbabwe and getting a chance to learn

at a teacher's college in the big city of Harare, they still can acquire the digital skills they need just like their male counterparts. Self-efficacy reflects confidence in the ability to exert control over one's own motivation, behaviour, and social environment, and in this context, the ability to acquire and master digital skills and also having the ability to teach them to a child after graduation. This intrinsic belief in one's capabilities is crucial for overcoming the initial hurdles of learning new technologies.

## CONCEPTUAL FRAMEWORK

### ASPECTS FROM RELATED LITERATURE

#### *THE SOCIAL COGNITIVE THEORY AND DIGITAL SKILLS ACQUISITION AMONG YOUNG WOMEN*

Social Cognitive Theory is a general theory that stress learning from the social environment (Bandura, 2001). From its early focus on observational learning through modelling, SCT expands in scope to address such processes as motivation and self-regulation. Bandura's theory postulates reciprocal interactions among personal, behavioural, and social/environmental factors (Bandura 1986). Researchers in this tradition investigated the operation of vicarious, symbolic, and self-regulatory processes, in the various ways that individuals interact with their environments and one another. A key point is that people seek to develop a sense of agency to be able to exert a large degree of control over important events in their lives (Tur and Martin, 2015). Among the influential variables affecting one's sense of agency are self-efficacy, outcome expectations, goals, and self-evaluations of progress, and in this sense, digital skills acquisition.

In the Social Learning Theory (SLT), Bandura (1977) talks of the concept of modelling. For Zimbabwean young women, especially those in college, models are an essential part of their success in digital skills acquisition. By merely observing, a model performs a skill as

suggested by the SCT, a young woman can successfully acquire any digital skill because they would have had access to the right model giving the much-needed motivation.

Karyotaki and Drigas in 2022 conducted research on the impact of digital technologies and social networks on young women and young mothers' entrepreneurship and employability in Athens, Greece. They found that young women and mothers faced various obstacles in the labour market due to lack of skills in job search techniques, unpaid domestic labour responsibilities, and, in developing countries, social isolation and restrictions. In this particular study it was also noticed that young teachers are having trouble teaching the Heritage-based Education 5.0 curriculum after graduation because they lack digital skills needed by the curriculum, hence efforts have been made to bring in SCT concepts to assist those still under training in digital skills acquisition. This highlights a pressing need for interventions within teacher training programmes.

*THE ROLE OF OBSERVATIONAL LEARNING, REINFORCEMENT, AND SELF-EFFICACY IN DIGITAL SKILLS ACQUISITION IN YOUNG WOMEN*

It is known that people are social creatures (Bandura, 1977). When Albert Bandura first began to champion the notion of imitative responses as a key mechanism in social learning (Grusec, 2022), the world was already well aware that people did not learn in a vacuum. The whole of human experience tells a different story, one of interaction and cognitive consequence. If anything can be taken from the SLT, it is that, for better or worse, people observe, imitate, and model the behaviour of others (Social Learning Theory 2014). This was true in Bandura's day, and it is still truer in this age of social media.

Mwoma (2019) explores the role of self-efficacy in digital skills acquisition among young women in Kenya. This is done by examining the relationship between self-efficacy and digital skills acquisition

among young women in Kenya, providing insights relevant to the Zimbabwean context. With this understanding, it is unsurprising that technology eventually provides a platform to digitise the nuances of human experience. Though they are not the first of their kind, Facebook, Twitter (now X), and a variety of other services, are now synonymous with daily social interaction, and for the first time in human history, all the world is truly a stage. Men, women, and children are players on that stage, and the borders of human interaction and learning have expanded greatly.

What does this mean for the field of education? At any level and in any content area, social media can be used to enhance learning and to encourage students to think critically about the technology pervading their world (Callens, 2014; Tur and Martin, 2015). This new social media paradigm provides a sandbox where imitative behaviours are not only encouraged, but are also equally rewarded and widely shared. What is needed for the future are teachers who are independent, confident, and equipped with lifelong learning skills within the area of information communications technology (ICT).

Self-efficacy beliefs determine how long individuals persevere and how resilient they are in the face of difficulty (Bandura, 2001). A low self-efficacy is more likely to result in less persistence and, ultimately, failure, to complete the task at hand. The higher the sense of efficacy, the greater the effort, persistence, and resilience. These are factors that are crucial for problem-solving in computing, self-regulated learning, and lifelong learning. There are also studies indicating that teachers with high self-efficacy positively affect student learning and building of new competences. These are arguments on why strong self-efficacy in digital competences becomes a necessity in order for teachers to operate within an evolving curriculum that includes computing and digital competences, and in the case of Zimbabwe, the Heritage-based Education 5.0.

#### CHALLENGES YOUNG FEMALE STUDENTS FACE IN ACQUIRING DIGITAL SKILLS

The digital gender divide is one of the most critical issues in education today. Digital gender gaps exist in students' access to and use of ICT, attitudes toward technology, and digital knowledge and skills. However, previous research has examined these divides primarily in isolation and largely ignored their inter-dependencies. Chikwata (2020) explores the impact of digital literacy training on digital skills acquisition among young women in Zimbabwe, highlighting the importance of targeted interventions in addressing the digital skills gap.

Similarly, Hakimi *et al.* (2023) conducted a study on the challenges and opportunities of e-learning for women's education in developing countries, focusing on the experience of Women Online University. The purpose was to assess the impact of e-learning on women's empowerment and socioeconomic advancement, examining factors influencing engagement with e-learning platforms. The study involved 220 female students across various faculties and age groups, utilising surveys and statistical analysis to evaluate e-learning effectiveness. Results indicate a positive perception of e-learning, with significant relationships between e-learning contribution, empowerment, and socioeconomic advancement. Access to technology was influenced by digital literacy, age, and faculty of study. The study conclusively highlights the transformative potential of e-learning for women's education, emphasising the importance of addressing digital literacy gaps and enhancing institutional support. Recommendations includes leveraging innovative pedagogical strategies to optimise e-learning outcomes and promote gender equality in education.

According to a report by UNICEF (2023) on challenges and an urgent call for action for equitable digital skills development in low-income countries, 90% of adolescent girls and young women aged 15-24 (almost 65 million individuals) are offline, compared to 78% of adolescent boys and young men of the same age (almost 57 million

individuals) who did not use the internet. Moreover, for every 100 adolescent boys and young men in low-income countries who did use the internet, only 44 adolescent girls and young women did. Among regions, the largest gap was observed in South Asia, favouring adolescent boys and young men by 27 percentage points. This also meant that adolescent girls and young women were being left behind and shut out when it came to digital skills (SDG4.4.1). Gender gaps varied by the socioeconomic status of the household (*ibid.*).

In Zimbabwe, female students coming from rural areas and enrolling at teacher training colleges in Harare tend to have challenges operating ICT equipment and lacking adequate digital skills due to lacking exposure and access to tools as basic as cell phones to access the internet, simply because they did not can afford all that; priority is given to basic education. Mobile phone ownership overwhelmingly disadvantages adolescent girls and young women (SDG5.b.1) (*ibid.*), as is the case in young female students at a teacher's college in Harare, Zimbabwe. This further exacerbates the existing digital divide and highlights the need for targeted interventions.

## **METHODOLOGY**

### **PHILOSOPHY**

Research philosophies provide theories about the nature of the reality that is being investigated in research (ontology) and about how knowledge of this reality is produced and justified (epistemology) (Mauthner, 2020). Bergmann (2024) state that it refers to assumptions about the nature of reality (ontology), valid knowledge and knowing (epistemology), and values and aims of research (axiology).

### **ONTOLOGY**

This research adheres to a pragmatist epistemology, emphasising practical applications and outcomes (Dewey, 1938). By focusing on the link between the SCT and skills acquisition among young women, this

study aims to provide actionable recommendations for policymakers, educators, and stakeholders.

### **APPROACH**

There are different ways to examine and explain a study and its findings based on using numbers as a measure, a descriptive style, or a mixture of both. These three research approaches are quantitative, qualitative, and mixed methods commonly used by researchers in various research studies (Taherdoost, 2022). A mixed-methods research approach is employed, combining quantitative and qualitative methods to provide comprehensive insights into skills acquisition in young women. Mixed methods research integrates both quantitative and qualitative research methods within a single study or across multiple related studies (McLeod, 2024). This approach acknowledges the complexity of the research problem and the need for multiple perspectives (Creswell, 2012).

Quantitative methods are used to identify trends and relationships between variables; they use methods such as experiments, surveys, biological measures, and structured observations to gather numerical data. Qualitative methods are valuable for understanding participant experiences and perspectives; they employed methods like interviews, focus groups, analysis of open-ended text, and observational field notes to gather non-numerical data. Mixed methods research is particularly useful when a research question requires a multifaceted approach that simultaneously explores trends in data and the nuances of individual experiences.

### **RESEARCH DESIGN**

The framework of methods and techniques chosen to conduct this research is described as research design (Taherdoost, 2021). In social science research, it is required to collect evidence relevant to the research problem, especially evidence required to evaluate a problem, to test the theory, or to describe a phenomenon. Successful research

designs should be able to provide accurate and unbiased research insights (Creswell, 2012). The study was conducted at a teachers' college in Harare, Zimbabwe. A mixed-methods approach is employed, combining surveys and semi-structured interviews with female students at the teacher's college. Data was collected using questionnaires, interviews, and observations.

### **POPULATION AND CHARACTERISTICS**

This is a document that contains statistical information about a population's characteristics. This information includes age, sex, race, and more. This research uses of surveys and semi-structured interviews. Today, the word "survey" is used most often to describe a method of gathering information from a sample of individuals, (Scheuren, 2004). Surveys provide an important source of basic scientific knowledge. The sample size required for a survey partly depends on the statistical quality needed for survey findings; in this case, surveys were conducted using a sample of 200 young women at a teacher's college in Harare, Zimbabwe. Semi-structured interviews are also made use of with a sample of 20 young women randomly selected from the population of 200 young women.

### **SAMPLING**

A sample is a subset of the population the research actually examines to gather the data (Mohanty, 2024). A sample is a subset of the population representing an entire group. The collected data on the sample aims at gaining information on the entire population. Sampling is a process of selecting an adequate number of elements from the population so that the study of the sample not only helps in understanding the characteristics of the population, but would also generalise the results. Sampling provides better options in a short period of time as it produces comparable and valid results (*ibid.*). For this study, random sampling for observation, stratified sampling for the interviews, and purposive sampling for the case study, were used, as this is a mixed-method approach.

## ETHICS

For the purpose of authenticity, the following ethics were observed during data collection. Informed consent was obtained; participants were asked to sign consent forms upon agreeing to be part of the research. Confidentiality was assured; the consent forms also state that their responses would be confidentially treated and anonymous, meaning nothing would be traced back to them at any given time. In the event that the participants would somehow feel uncomfortable to continue with the participation during the research, they were guaranteed the right to withdraw. In addition, all data collection proceedings were done in a transparent manner to avoid any suspicions or having participants feel uncomfortable.

## VALIDITY AND RELIABILITY

Validity is foremost on the mind of those developing measures and that genuine scientific measurement is foremost in the minds of those who seek valid outcomes from assessment. From the above quote, validity can be seen as the core of any form of assessment that is trustworthy and accurate (Bond, 2003:179). Borsboom, Mellenbergh and van Heerden (2004) has a different take on validity stating that: "...a test is valid for measuring an attribute if (a) the attribute exists; and (b) variations in the attribute causally produce variation in the measurement". They did not agree with Messick's conception of validity. In this study, Messick's viewpoint is followed. Reliability reflects consistency and replicability over time. Furthermore, reliability is seen as the degree to which a test is free from measurement errors, since the more measurement errors occur, the less reliable the test (Fraenkel and Wallen, 2003).

To ensure the validity of this study, several strategies were employed:

- *Construct validity*: A theoretical framework (Social Cognitive Theory) was used to guide the study, ensuring that the constructs measured were relevant and aligned with the research objectives.

- *Content validity*: The data collection instrument (questionnaire) was reviewed by experts in the field to ensure that it accurately measures the digital skills acquisition of young women.
- *Face validity*: A pilot study was conducted with a small group of participants to ensure that the questionnaire is clear, concise, and easy to understand.
- To ensure the reliability of the study, the research employed the following strategies:
- *Internal consistency reliability*: The Cronbach's alpha coefficient was used to measure the internal consistency of the questionnaire, with a coefficient of 0.8 indicating good reliability.
- *Test-retest reliability*: A pilot study was conducted with a small group of participants, and the questionnaire was administered twice with a two-week interval. The results show a high correlation coefficient (0.9), indicating good test-retest reliability.
- *Inter-rater reliability*: The research used multiple coders to analyse the data, and the inter-rater reliability coefficient (Cohen's kappa) was 0.85, indicating good agreement between coders.

By employing these strategies, the research ensured that the study is both valid and reliable, providing accurate and trustworthy results.

## FINDINGS

- Research Question 1: Explaining Digital Skills Acquisition among Young Student Teachers using Social Cognitive Theory.
- The findings are conducted using the survey method, and the results seem to indicate that observational learning, reinforcement, and self-efficacy are key aspects in the process of the acquisition of digital skills among female student teachers.

Observational learning was seen by 80% of the participants as playing a significant role in digital skills acquisition among young female student teachers. This finding suggests that student teachers learned digital skills by observing their peers and instructors. Follow-up semi-structured interviews with the participants highlight the fact that student teachers are often paired with peers who had more experience in manipulating digital tools. For instance, during a lesson on using educational software, a female student teacher observed her male peer as he demonstrated how to create interactive lessons using PowerPoint. During this process, she paid close attention to the employed techniques and asked questions to clarify any doubts. Through this observational learning experience, the female student teacher indicated that she gained confidence in using digital tools and began to experiment with creating her own interactive lessons.

Reinforcement was discovered as another crucial factor in digital skills acquisition. During the semi-structured interviews, 75% of the participants indicated that for them to develop the required digital skills, positive reinforcement from instructors and peers was crucial in that it provided the necessary basis for extrinsic motivation for female student teachers to continue developing their digital skills. At this college, instructors said that they specially provided positive reinforcement to female student teachers by careful demonstration of proficiency in using digital tools. For example, during a lesson on using learning management systems, a student teacher successfully created an online quiz using Google Forms, and the instructor provided immediate feedback, praising the student for her creativity and technical skills. She indicated that this positive reinforcement motivated her to continue exploring the use of digital tools in her teaching practices.

Also, interview results strongly showed that self-efficacy is a critical factor in digital skills acquisition, with 90% of respondents believing in

their ability to acquire digital skills. For example, it was noted that the methodologies used by the instructors determined the level of female student teachers' participation in the digital literacy programme that emphasised self-efficacy, where each trainee was encouraged to take ownership of their learning, setting goals, and reflecting on their progress. This was particularly evident among those female student teachers who had done their high school in poorly ICT-resourced rural schools who indicated that they initially struggled with using digital tools, but, through the programme, they developed a growth mindset that enabled them to believe in their ability to acquire digital skills. With increased confidence, they even started to experiment with new digital tools and integrated them into their teaching practices. These examples illustrate how observational learning, reinforcement, and self-efficacy played a significant role in digital skills acquisition among young student teachers in a teacher's college in Harare, Zimbabwe.

Qualitative themes that emerged:

- *Peer Influence:* Respondents emphasised the importance of peer support and observation in acquiring digital skills.
- *Instructor feedback:* Positive feedback from instructors was cited as a key motivator for acquiring digital skills.
- *Personal Confidence:* Respondents highlighted the importance of self-efficacy in overcoming initial fears and doubts about acquiring digital skills.

These themes seemed to validate the fact that the Social Cognitive Theory was relevant in digital skills acquisition among young women in Zimbabwe.

#### RESEARCH QUESTION 2: ROLES OF OBSERVATIONAL LEARNING, REINFORCEMENT, AND SELF-EFFICACY IN DIGITAL SKILLS ACQUISITION

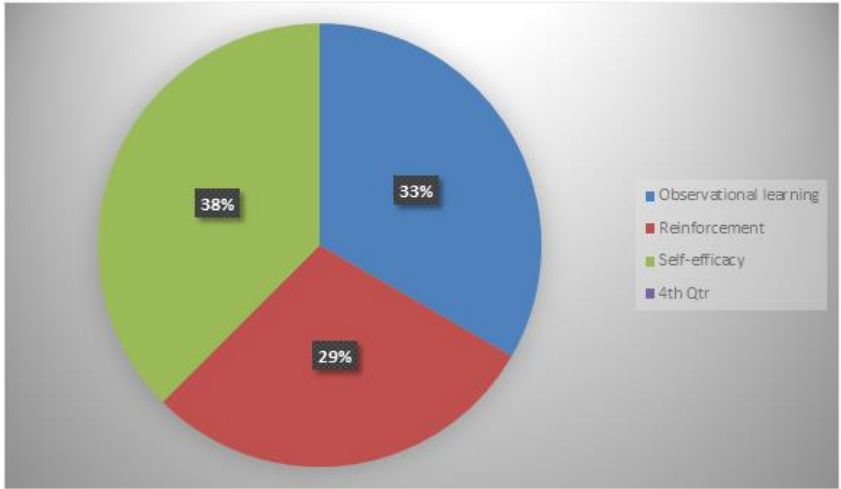
A survey was administered to 200 young female student teachers at a teacher's college in Harare, Zimbabwe. The survey aimed to

investigate the roles of observational learning, reinforcement, and self-efficacy in the acquisition of digital skills. The following quantitative results were obtained.

**Table 1:** Roles of observation learning, reinforcement and self-efficacy - quantitative results

| Variable               | Mean | Standard Deviation |
|------------------------|------|--------------------|
| Observational learning | 4.2  | 0.8                |
| Reinforcement          | 4.0  | 0.9                |
| Self-efficacy          | 4.5  | 0.7                |

These results are further processed to produce the pie chart as displayed below.



**Figure 1:** Roles of observation learning, reinforcement and self-efficacy -descriptive statistics

The quantitative results indicate that all three variables - observational learning, reinforcement, and self-efficacy - played significant roles in the acquisition of digital skills by young female student teachers.

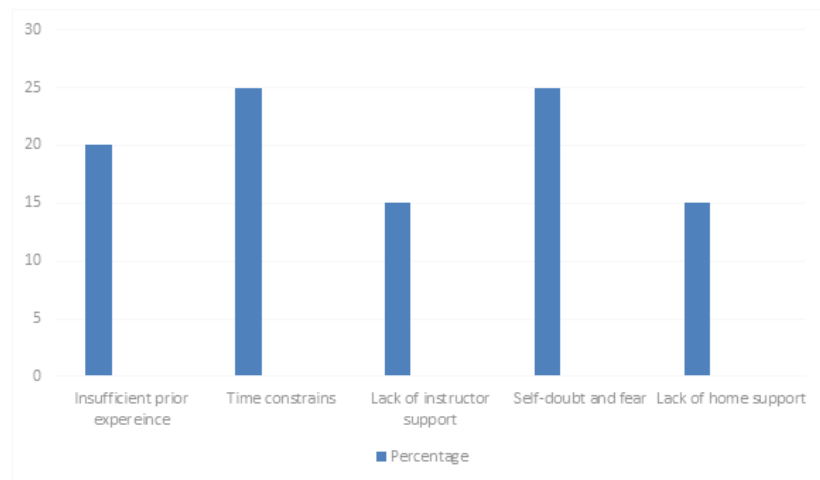
Observational learning emerged as a critical factor, with 80% of the participants in the survey reporting that they acquired digital skills by observing their peers and instructors. This finding highlights the importance of peer-to-peer learning and the need for instructors to model effective use of digital tools.

Reinforcement was also a significant factor, with 70% of respondents reporting that positive reinforcement from instructors and peers motivated them to continue developing their digital skills. This finding underscores the need for instructors to provide constructive feedback and encouragement to student teachers. Self-efficacy emerged as the most significant factor, with 90% of respondents reporting that they believed in their ability to acquire digital skills. This finding stresses the importance of cultivating a growth mindset and promoting self-confidence among student teachers. This information seems to indicate that the variables played a significant role in determining the acquisition of digital skills among the female student teachers as the mean, standard deviations, and percentages show strong correlations.

Overall, the quantitative results suggest that a comprehensive approach that incorporated observational learning, reinforcement, and self-efficacy is necessary to support the acquisition of digital skills by young female student teachers.

Research Question 3: Challenges Faced by Young Student Teachers in Digital Skills Acquisition

## QUANTITATIVE RESULTS



**Figure 2:** Challenges faced by young female student teachers in digital skills acquisition

Female student teachers with limited prior experience in using digital technologies faced significant challenges in acquiring digital skills. This lack of experience could lead to feeling overwhelmed by the complexity of digital tools, difficulty in understanding the basics of digital technologies, and limited confidence in using digital tools for teaching and learning.

### TIME CONSTRAINTS

Female student teachers often had to balance multiple responsibilities, including academic studies, teaching practices, and personal life. Time constraints could hinder their ability to dedicate sufficient time to learning digital skills, practice using digital tools regularly, and keep up-to-date with the latest digital technologies and trends.

### **LACK OF INSTRUCTOR SUPPORT**

Instructor support was crucial for female student teachers to acquire digital skills. However, a lack of support could lead to a number of challenges including limited guidance on using digital tools effectively, insufficient feedback on their digital skills development, and difficulty in accessing resources and facilities for digital skills development.

### **SELF-DOUBT**

Self-doubt could be a significant obstacle for female student teachers in acquiring digital skills. This was reported as being able to manifest as fear of failure in using digital tools, lack of confidence in their ability to learn digital skills, and believing that digital skills were not relevant to their teaching practices.

### **LACK OF HOME SUPPORT**

Female student teachers said that they faced challenges in acquiring digital skills due to a lack of support at home. This included limited access to digital devices and internet connectivity at home, family responsibilities and obligations that left little time for digital skills development, and lack of encouragement and motivation from family members to pursue digital skills development.

These challenges highlighted the need for targeted interventions to support female student teachers in acquiring digital skills. This could include providing access to digital devices and internet connectivity, offering instructor support and guidance, and promoting a growth mindset and self-confidence.

### **QUALITATIVE THEMES**

From the research findings, the following qualitative themes recognised are:

- *Infrastructure constraints:* Respondents cited limited access to devices and internet connectivity as major challenges. This included the high cost of devices and internet services, as previously noted.
- *Pedagogical support:* Respondents emphasised the need for more comprehensive training and support from instructors. This indicated a gap in the current curriculum delivery and instructor preparedness.
- *Self-doubt and fear:* Respondents reported struggling with feelings of inadequacy and fear when attempting to acquire digital skills. This often stemmed from societal stereotypes and biases against women in technology.
- *Work overload:* Female student teachers experienced work overload, which hindered their ability to acquire digital skills. This was exacerbated by the need to balance academic studies, teaching practices, and personal life.

It is noted that the study's findings highlight the significance of the Social Cognitive Theory in explaining digital skills acquisition among young student teachers. Observational learning, reinforcement, and self-efficacy were seen to play critical roles in shaping digital skills acquisition among the young female student teachers. However, challenges such as limited access to devices, insufficient training, and lack of confidence hindered the acquisition process.

## DISCUSSION OF FINDINGS

The study's findings consistently demonstrate the critical role of the Social Cognitive Theory (SCT) in understanding and facilitating digital skills acquisition among young female student teachers. The interconnectedness of observational learning, reinforcement, and self-

efficacy, as proposed by Bandura, is clearly evident in the experiences of the participants.

#### *OBSERVATIONAL LEARNING, REINFORCEMENT, AND SELF-EFFICACY*

The study's findings emphasise the importance of observational learning, reinforcement, and self-efficacy in digital skills acquisition among young student teachers. These results align with the SCT, which posits that people learned by observing others, receiving reinforcement, and developing self-efficacy. The high percentage of participants who reported learning through observation underscored the effectiveness of peer modelling and demonstrations by instructors. This was particularly impactful for students who had limited prior exposure to technology. The positive impact of reinforcement, whether through direct praise or recognition of achievement, highlights its role in fostering motivation and persistence. Similarly, strong self-efficacy beliefs are found to be a powerful predictor of success, enabling students to overcome challenges and embrace new digital tools.

#### *IMPLICATIONS FOR TEACHER EDUCATION*

The findings suggest that teacher education programmes should incorporate opportunities for observational learning, such as peer mentoring, coaching, or modelling. This can involve creating structured peer learning groups or integrating specific demonstration sessions by digitally proficient instructors. Additionally, programmes can provide reinforcement through feedback, encouragement, and recognition of achievements, and also include incorporating a system of positive feedback for digital assignments, publicly recognising students' digital achievements, or offering incentives for advanced digital skill development. Fostering self-efficacy through positive reinforcement, goal-setting, and self-reflection can also enhance digital skills acquisition. Educators should actively work to build confidence, particularly among students from disadvantaged backgrounds, by

celebrating small successes and providing constructive feedback that emphasises growth rather than deficits.

#### *CHALLENGES FACED BY YOUNG FEMALE STUDENT TEACHERS*

The study identified three primary challenges faced by young student teachers in digital skills acquisition: limited access to devices, insufficient training, and lack of confidence. These challenges are often intertwined and exacerbated existing gender disparities in technology access and use. The lack of prior experience reported by many participants pointed to systemic issues in access to technology at earlier educational stages and in rural communities. Time constraints further compounded these issues, as student teachers struggled to allocate sufficient time for digital skill development amidst their demanding academic and practical responsibilities. The reported lack of instructor support highlights a need for enhanced professional development for faculty to effectively integrate digital literacy into their teaching. Furthermore, self-doubt and lack of home support creates significant psychological and practical barriers to digital skill acquisition.

#### *ADDRESSING INFRASTRUCTURE CONSTRAINTS*

To address the issue of limited access to devices, educational institutions could explore cost-effective solutions, such as mobile device labs, online platforms, or partnerships with technology companies. This could involve establishing communal digital learning centres with adequate computers and reliable internet, or even exploring subsidised device programmes for students. Collaborations with internet service providers could also lead to more affordable connectivity options for students, both on and off campus.

#### *PROVIDING COMPREHENSIVE TRAINING AND SUPPORT*

Institutions could provide comprehensive training and support by offering regular workshops, tutorials, and one-on-one coaching. This

could help build confidence and competence in using digital tools. Training should not only focus on technical skills, but also on pedagogical approaches for integrating digital tools effectively into teaching practices. Mentorship programmes, where experienced digital users guided less experienced students, could also be highly beneficial.

#### *FOSTERING A GROWTH MINDSET*

To address the lack of confidence, educators could foster a growth mindset among student teachers by emphasising the value of experimentation, risk-taking, and learning from failures. Creating a supportive and non-judgmental learning environment is crucial. Instructors could share their own learning struggles with technology to normalise the process of making mistakes and emphasise the continuous nature of digital skill development. Encouraging collaborative learning and peer support could also alleviate individual feelings of inadequacy.

### **RECOMMENDATIONS**

Based on the findings and discussion, the following recommendations are put forth:

#### *TEACHER COLLEGES*

*Provide adequate access to resources:* Teacher colleges should provide female student teachers with adequate access to devices, internet connectivity, and digital resources. This might involve establishing well-equipped computer labs, providing Wi-Fi access throughout campus, and exploring partnerships for affordable personal devices.

*Offer comprehensive pedagogical support:* Institutions should offer pedagogical support and training to help female student teachers integrate digital tools into their teaching practices. This includes workshops on digital pedagogy, curriculum integration, and the effective use of educational software.

*Promote confidence and self-efficacy:* Efforts should be made to promote confidence and self-efficacy among female student teachers in acquiring digital skills. This can be achieved through positive reinforcement, goal-setting, peer mentoring, and creating a supportive learning environment that encourages experimentation.

These findings highlight the need for targeted interventions to support female student teachers in acquiring digital skills, addressing the challenges they face, and promoting their confidence and self-efficacy.

#### **TEACHER EDUCATION PROGRAMMES**

*Incorporate observational learning:* Provide opportunities for peer mentoring, coaching, or modelling to facilitate observational learning. This could include structured observation sessions in technology-rich classrooms or peer-to-peer tutoring initiatives.

*Offer comprehensive training and support:* Regular workshops, tutorials, and one-on-one coaching to build confidence and competence in using digital tools. These training sessions should be practical, hands-on, and directly relevant to their future teaching roles.

*Foster a growth mindset:* Emphasise experimentation, risk-taking, and learning from failures to promote a growth mindset. Encourage a culture where mistakes are seen as learning opportunities, not setbacks.

#### **EDUCATIONAL INSTITUTIONS**

*Address infrastructure constraints:* Explore cost-effective solutions such as mobile device labs, online platforms, or partnerships with technology companies. This could also involve advocating for government or donor funding to improve digital infrastructure.

*Provide access to devices and internet:* Ensure that student teachers have access to devices and internet connectivity to support digital skills acquisition. This might involve establishing lending programmes for devices or providing subsidised internet access.

### **POLICY MAKERS**

*Develop policies supporting digital literacy:* Develop policies that prioritise digital literacy and provide resources to support teacher education programmes. This could include national strategies for digital literacy in education and specific funding allocations for teacher training institutions.

*Allocate resources for infrastructure development:* Allocate resources to support infrastructure development, including device provision and internet connectivity. This would help to bridge the existing digital divide and ensure equitable access to technology for all students.

Future research

*Investigate the impact of digital skills acquisition:* Investigate the impact of digital skills acquisition on teaching practices and student outcomes. This would provide further evidence for the effectiveness of digital literacy initiatives.

*Explore the role of gamification and simulation:* Explore the role of gamification and simulation in digital skills acquisition among student teachers. These innovative pedagogical approaches could potentially enhance engagement and learning outcomes.

### **CONCLUSION**

The study's findings highlight the significance of the Social Cognitive Theory in explaining digital skills acquisition among young student teachers. Observational learning, reinforcement, and self-efficacy play critical roles in shaping digital skills acquisition. However, challenges

such as limited access to devices, insufficient training, and lack of confidence hinder the acquisition process. Addressing these challenges through targeted interventions and a holistic approach based on SCT principles will be crucial for empowering future female educators in Zimbabwe with essential digital competencies.

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