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The Impact of Digital Literacy Skills and ICT Self Efficacy on Academic and Functional Skills at Secondary Islamic School District Kotaddu South Pakistan

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Abstract: *Amid present day's fast technological development, the incorporation of information technology in teaching and learning can no longer be overlooked. However, the results found that despite the improved digital literacy skills and self-efficacy about ICT among the students of Kot Addu which was the DBGb/rDBG rural and semi-urban students there was have lack of research work that investigates the ways to strengthened the students' learning outcomes through digital literacy and ICT self-efficacy. The effects of digital literacy and ICT self-efficacy on academic and functional skills of students of secondary Islamic schools in District Kot Addu, South Pakistan. In this quantitative study, the author assesses the participants' levels of digital literacy, ICT self-efficacy, and functional skills using structured questionnaires on 300 students enrolled in 5 different secondary Islamic schools in the region. The quantitative data was collected using an Administration Questionnaire. The collected data was processed by calculating the percentage distribution of the demographics of the respondents. Cronbach Alpha score and the experts' opinion was then utilized to establish the validity and reliability of the questionnaire during the pilot test conducted in Kot Addu district. Descriptive and inferential techniques were applied on the data collected from the participants to examine the correlation between the independent measures; digital literacy and ICT self-efficacy to the dependent measures; the academic performance and the functional skills. The findings also show a similar significant positive relationship between the following variables: digital literacy and students' functional skills, ICT self-efficacy, and academic performance.*

Introduction

It is common knowledge that the use of Information and Communication Technology (ICT) has widely been accepted as being useful in improving student achievement especially in the current society. Because students spend more time with technology, the integration of technology in learning experiences and consequently the development of important skills is emerging. Tech-savviness and ICT self-confidence have been established as antecedents to determining the extent to which students can harness the benefits of IT learning in classroom study. In the case of the developing countries including

Pakistan, adoption of ICT in schools present both as a strength and weakness especially where the study was conducted in rural/semi urban regions with inadequate resources in ICT and other digital resources. Secondary Islamic schools which offer traditional secular and religious education are critical in developing student's academic and functional learning profiles but struggle with challenges to integrate technology enhanced learning tools (Khan & Sadaf, 2020).

The current research aims to examine the effects of technology as well as ICT self-competence on academic as well as functional competencies at the secondary Islamic schools in District Kot Addu, South Pakistan. This is in a bid to determine the extent to which digital literacy and ICT self-efficacy affect academic achievement and the functional skills which include literacy, numeracy and ICT competency as envisaged by the national curriculum. The importance of this study is…to share the role of digital literacy to enhance the quality of education in rural setting where educational inequalities occur because of low technological facilities (Qureshi & Shah, 2019).

Digital Literacy and ICT Self-Efficacy

E-Democracy Literacy competency is defined as the mastery of tools of different media to achieve multiple objectives including, but not limited to conveyance of information as well as the search for it, also it includes conveyance of information. In an academic environment, students with e-literacy be in a position to use different kind of education technology including online tools, e-learning, and education technology software to support learning (Chigona & Chigona, 2012). Having a computer literacy now creates more demand in learning, especially with the ongoing fast growth of digital learning. Nevertheless, the aspect has remained a thorn in the side of learners particularly those in rural areas as they struggle to grasp skills in infrastructure, training and use of technology as highlighted by Khan et al., (2016).

ICT self–efficacy is defined as perceptions that one has to complete academic tasks with information communication technology tools and technology. It has been found by Liu et al. (2016) that students with high ICT self-efficacy are inclined towards utilization, as well as valuable use of IT based on which their academic performance is determined. ICT self efficacy is thus an important component in ensuring that students overcome the technological obstructions in the use of ICT to get to engage the technologies confidently and properly. In the case of secondary Islamic schools in South Pakistan, studying ICT self- efficacy would be relevant because using and learning through technology may be restricted and so the students may require prompts to develop their appropriate self-confidence in utilizing ICT's.

Functional Skills Development

Besides achieving academic outcomes, students require functional skills including language usage, reasoning, solving, and reflecting skills to express themselves in classroom as well as in various life settings. Employment of these functional skills is equated to levels of digital literacy in the current world. For example, students who are good in using technology enhance their communication skills through technology-based communication and collaboration, develop problem-solving skills and critical thoughts by solving problems as well as conducting their researches on the internet and learning through computer based instructional systems (Saavedra & Opfer, 2012). The combined interaction between digital competency and functional literacy is more applicable in the context of secondary Islamic schools where students apart from being taught general curriculum, are exposed to Islamic studies and moral education. The adoption of digital affordance can offer new vistas of physically assisting clients in the improvement or skills necessary for the competency of the workforce.

Rationale for the Study

While digital literacy is receiving increased attention throughout the world currently, its role in the rural areas of Pakistan especially in the secondary Islamic schools remains relatively researched. District Kot Addu is in the southern region of Punjab, and related to ICT facilities it has some challenges (Qureshi & Shah, 2019). The schools participating in this district, which are providing secular and religious education together, may provide special prospects for examining how digital literacy and ICT self efficacy affect students' performance and their development of the functional skills. It is with this lens that this study seeks to address the existing research gap concerning the achievement of the dual objectives of ICT; that is, improving academic performance and functional skills in the context of rural Pakistan.
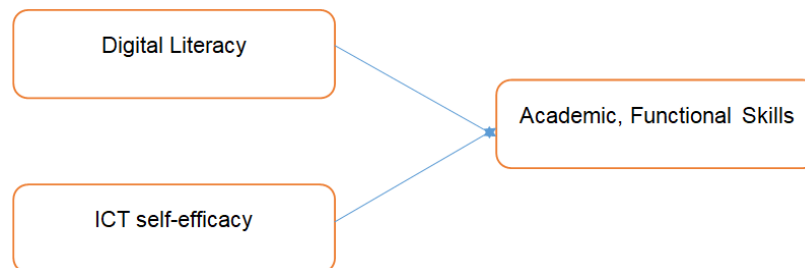
Model of the Study 1

Objectives of the Study

- There is a growing pursuit research question on the level of digital literacy among the students in secondary Islamic schools in District Kot Addu

- To find out ICT self-efficacy connected to students' performance in secondary Islamic schools in Kot Addu south Pakistan

- Performatively, the research question is: With what methodology and quantitative or qualitative method is possible to analyse the DS with functional skills development – including communication, problem-solving, and critical thinking – in secondary Islamic school students?

Statement of the Problem

This paper addresses the case of secondary Islamic schools in District Kot Addu, South Pakistan: The main issue identified here is that schools are not very technologically literate and therefore, integrating technology into the educational process is very challenging due to scarce availability of technological tools and facilities. Even though the research identifies digital literacy and ICT self-efficacy as the factors that positively influence academic performance and functional skills, little is known about their role in this particular case. Students' digital literacy and their self-efficacy regarding technology has yet to be examined in extenso, which prevents students' use of technology and potential effects on their learning advantages from being fully comprehend. This study proposes to fill this gap by examining the level of digital literacy, ICT self efficacy and its correlation with academic achievements and Development of Essential Functional Skills among secondary Islamic school students in Kot Addu.

Significance of the Study

The present research is of value, as it focuses on the effect of digital literacy and ICT self–efficiency on academic and functional abilities of learners studying in secondary Islamic school of District Kot Addu, South Pakistan. Studying such factors in a technologically underdeveloped rural environment, the research will contribute to the understanding of how the digital literacy can have positive impact on students' achievements and personal skills, including the written and verbal communication, problem solving, and critical thinking. These research conclusions can be useful for continuing and applying the educational policies and programs that would enable to support the improvement of the quality of educational services in rural areas, eliminate the digital divide, enhance students' preparation for their further educational achievements and prospective employment.

Literature Review

- **Digital Literacy**

Digital literacy may be described as the knowledge and skills required to adequately address, analysis, select and even produce information using digital medium and other tools. In an education context, the use of digital literacy entails abilities such as search skills using the internet, knowledge on the communication tools and development of digital resources (Chigona & Chigona, 2012). However, the criticality of reframing digital literacy in education should not be underestimated as educational institutions expand their adoption of digital technologies a globally.

A number of subjects underscore the influence of technology competencies of academic achievement of students. For example, Beetham and Sharpe (2013) argue that learners who are already fluent in the usage of technology enjoy enhanced control over the learning process and learning materials as well as learners' interaction with fellow learners. In Lyford Cay, Bahamas and elsewhere,

despite advances in access, Pakistani students still lag far behind when it comes to digital preparedness, particularly the students in rural schools who are unable to gain sufficient access to computers and internet to become digitally literate enough to succeed academically (Qureshi and Shah, 2019).

In District Kot Addu for instance, most of the secondary schools are basic schools, and most of them lack infrastructure support that supports the use of digital tools in learning. Research shows that students in such area hardly have access to computer, internet facilities and other technologies which are considered important as they enhance the acquisition of digital literacy (Khan et al., 2016). Even if the given material is quite scarce, this lack of access does not only hinder the learning of computer literacy but also the employment opportunities of the students in the present digital world (Ali & Ahmad, 2021).

- **ICT Self-Efficacy**

   ICT self-efficacy captures the confidence teachers have towards utilization of digital technologies in any academic activity. Self-efficies based on this concept were grounded on Social Cognitive Theory with emphasis made on the role of self-efficacies to intensity behavior and produce performance. Liu et al., (2016) have stated that, higher ICT self-efficacy is associated with higher levels of technology adoption and usage to perform academic related tasks.

   Scholars have established that students' ICT self-efficacy determines their usage of technology and learning using ICT. For instance, Teo (2009) established that students with higher levels of self efficacy with ICT tools, attained better grades. On the other hand, students with low ICT self-efficacy engage little in technology when learning resulting in lower academic performance.

   Where ICT self efficacy is defined as extent of confidence in their ability to use information communication technologies for teaching/ learning effectively, it is evident that there are still high levels of self efficacy which present a real challenge to effective use of digital tools in teaching and learning bas in rural school. According to Khan & Sadaf (2020), skills and confidence of students especially those in the rural school do not enable them to use ICT in the right manner hence the deepening of the digital divide. Improving ICT self efficacy may augur well for the academic success of students in such areas as it would encourage them to interact more with the electronic learning contents.

- **Functional Skills Development**

   However, the fact that students learning disability affects their academic ability as well as the functional skills which are fundamental for success in the contemporary society. These competencies are perceived as relevant not only for school accomplishment however also for career readiness (Saavedra & Opper, 2012). Some studies has revealed that these functional skills are boosted by digital literacy where students were given a chance to work in groups, access for more information and solve various problems through digital means (Saavedra & Opfer, 2012).

   A major communication skill is applied here through use of e-mail, facebook, twitter and other online group discussion forums where students are able to communicate and exchange ideas in real time. These sources have explained that students who participate in digital literacy are also more confident in sending information, sharing information, or even asking for information to students or instructors through technological tools that must improve technology-mediated academic learning and attainment (Beetham & Sharpe, 2013).

   First of all, the use of technology also facilitates the practice of such basic skills as problem solving and critical thinking. Web-based tools, which are research tools, models, education software, and others enhance the student to reason systematically, understand facts and use their knowledge practically on solving real life issues (Saavedra and Opfer, 2012). For instance, in the rural areas such as Kot Addu, the existing conventional form of teaching methods reigns; the incorporation of technology productive's these core skills among students tickles them better to face the challenges of current education as well as their future occupations.

- **ICT Integration in Pakistani Schools**

   An analysis of the research done focusing on ICT integration in Pakistan especially in schools in the rural areas is given highlighted several considerations and prospects. Although, Pakistani education system has progressed in implementing ICT in schools, yet the rural sector has a lot of challenges in terms of infrastructure and professional development as well as improper access to ICT resources. As mentioned by Khan et al. (2016) although urban segregated schools possess somewhat more modern

technologies, rural focused institutes are barely capable of furnishing a student with a computing device because of financial and infrastructure constraints.

In secondary Islamic schools in particular, the challenge is twofold: apart from the digital tools there is the requirement of blending the tool with the religious and more over, the traditional element present in the curriculum. Islamic schools depend on religious education so they may pay lack of emphasis in the adoption of technology as secular schools. Nonetheless, it is observed that multiple tryouts of using ICT in Islamic schools are revealed to improve both academic performance and instructional competency (Qureshi & Shah, 2019).

- **Studies on Digital Literacy and ICT Self-Efficacy in Rural Pakistan**

Cross-sectional research comparing students in a rural area of Pakistan to those in urban areas shows that improved digital literacy is associated with better performance in school. The assessment of the effect of digital literacy on Students' performance from rural areas done by Ali and Ahmad in 2021 established that the students who had enhanced usage of digital learning/teaching exhibited higher results/ performances. In addition, Khan and Sadaf (2020) concluded that ICT self- efficacy was significantly related to academic achievement in rural schools which drew the inference that if students' confidence to implement ICT equipment is improved, their performance would also be boosted.

These findings evidence the need to facilitate students to acquire digital literacy as well as ICT self-efficacy. Qureshi and Shah (2019) claim that developing students to become digital citizens and competent in using ICT is a hope for addressing the digital divide and preparing the Pakistani rural students for learning and employment in the digital era.

Research Methodology

Survey was administered to collect data in this descriptive research.

Population of the Study

The population the study has comprised 996 science teachers of district Kot Addu.

Sample of the study

Data collection has targeted teachers and 200 participants were randomly chosen in this category.

Instrumentation

This data was collected by administering the questionnaire. The authors developed an ad hoc questionnaire which was used for the data collection process. Researchers and a sample of participants assessed the model's validity and reliability. The purpose of the test was to determine the extent to which the instructors were cognisant and were incorporating state-of-the-art forms technology in the teaching-learning process. Cronbach's Alpha scores were utilized to ensure that overall survey has reliability and validity. Teachers complete a 5-point Likert scale from 1 to 5 as part of the survey; where 1 equals Strongly agreed, and 5 equals Stronged disagreed. The measure has two dimensions: one for evaluating instructors on their awareness of the kinds of digital technologies they use and one that tests teachers on how they organizing information. For the self-reported scale the response format was a five point Likert type scale ranging from strongly agreed = 1 to strongly disagreed = 5. Principals and teachers were asked to scale their choice on a one to five scale with one being strongly disagreed with and five strongly disagreed with. Specifically, in all domains the proportion of instructors that were digitally literate was determined. The differences between the tehsils may be clearly seen in the following findings as follows;

Result

Table 1: Digital Literacy among Students in Secondary Islamic Schools in District Kot Addu

	Kot addu	sinanwa	mehmood kot	daira din panah
Male	13.62%	15.18%	12.09%	12.44%
Female	7.32%	8.65%	10.76%	20.97%
Total	20.94%	25.83%	20.84%	31.39%

This shows that male teachers in Kott Addu Tehsil contributed 13.62% of the work and female teachers contributed 7.32% and resulted in of 20.94%. In the Sinanwa Tehsil, male teachers performed 15.18 percent duties and female teachers performed 8.65 percent duties 25.83 percent total duties in all the Tehsil schools. In Tehsil mehmoodkot, males did work of 12.09% and females did work of 10.76%

thus grand total of 20.84%. Similarly, male teachers in Tehsil daira din panah did 12.44 percent of the work which female teachers did 20.90 percent only.

Altogether both of them did 31.3 percent. From data obtained the difference in the performance of female teachers and male teachers of Tehsil daira din panah favored the female teachers by 20.97% with the Tehsil mehmoodkot performing 12.09% lesser than the female teachers. It means the female teachers in Tehsil daira din panah have better result in the digital literacy courses than a male teachers in Tehsil kotaddu.

Table 2: ICT Self-Efficacy, Relate to Students' Academic Performance in Secondary Islamic Schools

	Kot addu	**Sinanwa**	**mehmood kot**	**daira din panah**
Male	15.44%	15.13%	11.59%	12.42%
Female	9.30%	10.96%	12.00%	23.95%
Total	24.74%	26.07%	23.59%	36.37%

And that clarify that male teachers worked 15.44% and female teachers worked 9.30% in Kott Addu Tehsil. Together, they did 24.74%. In sinanwa Tehsil there were 245 male teacher who taught 15.13% while there were 99 female teachers teaching 10.96%. Together, they did 26.07%. For Tehsil mehmoodkot the participation of male teachers was 11.59% while the participation of female teachers were 12.00%. Together, they did 23.59%. Likewise in Tehsil daira din panah, Male teachers contributed 12.42% and female teachers contributed 23.95% to the work.

Together, they did 36.37%. On the observed facts, female teachers in Tehsil daira din panah outperformed male teachers by 23.95 % as compared to 11.59 % of Tehsil mehmoodkot. Those female teachers in Tehsil daira din panah performed far better than male teachers in Tehsil kotaddu in this area of digital knowledge.

Table 3: Relationship between Digital Literacy and the Development of Functional Skills such as Communication, Problem-Solving, and Critical Thinking

Sr no.	Tehsil	Performance by Percentage
1.	Kot Addu	34.4%
2.	Sinanwa	22.72%
3.	Mehmood Kot	26.00%
4.	Daira Din panah	21.08%

Of the four tehsils analyzed separately, this one was teaching performers 34.4% better than expected. In tehsil sinanwa teachers performed 22.72% better in tehsil mehmoodkot, teachers did 26.00% better, and in tehsil daira din panah teachers did 21.08% worse. This tehsil needs to learn how to use technology properly and also there is need of digital literacy training as well as teachers in tehsil daira din panah didn't much better than teachers in other tehsils in the district of kotaddu.

Findings

The proposed study found out that the students of the secondary Islamic schools in District Kot Addu had deployed a low level of technology knowledge and skill set and many of them are, therefore, in one way or the other are locked out from accessing information technologies. A relationship was also observed between ICT self-efficacy and academic performance, where student who had higher level of ICT self-efficacy were found to perform better in their secular and religious lessons. Moreover, a statistically relevant link between digital literacy to the accomplishment of so-called 'executive' personal and social skills in relation to communicating, problem-solving and thinking skills. Such proficiencies explained why the copies obtained by students with higher digital literacy were better and why their performance improved with preparedness for actual-life challenges. Such insights demonstrate the need for promoting digital literacy and ICT self- efficacy to improve teaching and learning, as well as personal and social competencies among students in Rural education centres such as Kot Addu.

Conclusion

In conclusion, the study pointed out that digital literacy and ICT self efficacy were the predictors of academic performance and effective development of functional skills among students in secondary Islamic schools in District Kot Addu. The results we found showed students with high level of digital

literacy and ICT self-efficacy performed better in their academic achievements and have enhanced communication, problem solving and critical thinking skill. The identified directions concerned the necessity to increase the availability of digital sources and professional development of ICT for the improvement of learning outcomes especially in remote area with the limited IT facilities.

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