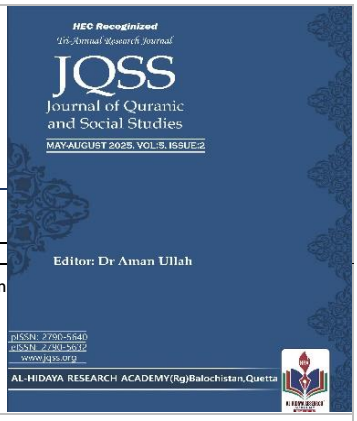
JQSS: *(Journal Of Quranic and Social Studies)*

ISSN: (e): 2790-5640 ISSN (p): 2790-5632

Volume: 5, Issue: 2, May-August 2025. P: 63-77

Open Access: https://jqss.org/index.php/JQSS/article/view/189

DOI: https://doi.org/10.5281/zenodo.17246022



Enhancing Digital Literacy Skills among Secondary School Students in Quetta: Challenges, Gaps, and Policy Directions

1. **Fiza Yasmeen** mirnasir555@gmail.com	MPhil Education Research Scholar, Institute of Education and Research, University of Balochistan, Quetta
2. **Dr. Abdul Nasir Kiazai** mirnasir555@gmail.com	Director, institute of Education and Research, University of Balochistan, Quetta
3. **Pervez Ahmed** Pervez.uob@gmail.com	Assistant Professor, Pakistan Study Centre, University of Balochistan, Quetta

How to Cite: . Fiza Yasmeen and Dr. Abdul Nasir Kiazai and Dr. Pervez Ahmed (2025). Enhancing Digital Literacy Skills among Secondary School Students in Quetta: Challenges, Gaps, and Policy Directions , *(JQSS) Journal of Quranic and Social Studies*,5(2), 63-77.

Abstract and Indexing

Publisher

HRA (AL-HIDAYA RESEARCH ACADEMY) (Rg)

Balochistan Quetta

Journal of Quranic and Social Studies
Volume: 5, Issue: 2, May-August 2025

Enhancing Digital Literacy Skills among Secondary School Students in Quetta: Challenges, Gaps, and Policy Directions

Fiza Yasmeen
MPhil Education Research Scholar, Institute of Education and Research, University of Balochistan, Quetta.

Dr. Abdul Nasir Kiazai
Director, institute of Education and Research, University of Balochistan, Quetta.

Pervez Ahmed
Assistant Professor, Pakistan Study Centre, University of Balochistan

Journal of Quranic and Social Studies
63-77

Volume:5, Issue:2, 2025
DOI:10.5281/zenodo.17246022
www.jqss.org
ISSN: E/ **2790-5640**
ISSN: P/ **2790-5632**

Abstract

The importance of digital literacy for academic achievement, job readiness, and civic engagement in the knowledge economy of the twenty-first century is becoming more widely acknowledged. Digital literacy is still lacking in many developing nations, especially in Pakistan's Baluchistan, despite its worldwide importance. This study examines the present state of digital literacy among Quetta secondary school students, pinpoints obstacles that educators and students encounter, and suggests methods for improving digital competencies. 138 students were tested on their proficiency in six ICT domains using a quantitative design and the Digital Literacy Assessment Tool (DLAT), which was modified from the European Union framework. These domains included Microsoft applications, multimedia tools, communication platforms, problem-solving, content access, and cyber security. Additionally, 133 teachers' survey responses were gathered in order to assess the difficulties associated with ICT integration. The findings demonstrate a good level of proficiency with communication tools (66.6% at the advanced level) and a respectable level of ability with multimedia applications and material access. However, serious deficiencies were discovered in problem-solving (89% beginning) and cyber security (59% novice). Teacher polls revealed a number of systemic barriers, including ambiguous ICT policies, poor infrastructure, a lack of funding, a lack of professional development, and cultural resistance to technology use. Even if kids get some basic digital exposure informally, the study concludes that there is a lack of systematic and pedagogically integrated ICT training. To reduce the digital gap, the research recommends curriculum changes that align with worldwide frameworks, continuous professional development for educators, increased infrastructure investment, digital material that is relevant for the region, and cyber security awareness initiatives. These adjustments are necessary to give Baluchistan's children the tools they need to thrive in the digital era, which will enhance employability, equity, and national growth.

Keywords: Digital Literacy, ICT In Education, Secondary Education, Quetta, Baluchistan, Cyber Security, Digital Divide
Corresponding Author Email: mirnasir555@gmail.com

Introduction

The 21st century is commonly referred to as the "digital age," since technology has affected every aspect of governance, work, education, and social interaction. Previously limited to reading and writing, literacy now includes a far wider range of skills. A key element of 21st-century skills is digital literacy, which includes the ability to efficiently access, assess, manage, and produce digital content; communicate and collaborate via technology; solve problems using ICT resources; and guarantee both individual and group safety in digital environments. Digital literacy is taking over a traditional literacy, it also enhance an employability, Civic engagement and academic success.

With a rapid advancement of technology, and rapidly changing world, a world eventually comes to realize that digital literacy is no longer an optional skill or a subject, and we cannot neglect it any more now it become a basic skill of advancement to meet with a requirement of educational systematic society following a sustainable development goal 4 (SDG 4) which ensure an inclusive and equitable quality education for all also Emphasis on a significance of ICT or digital skills in reducing inequality and ensuring a quality education with a diverse opportunities of employment in job market, but beyond all that significances and international commitments still many third world countries are going through a digital inequality, to fill that gap still need more strategically policy implementation specially at grass root level before that they left really far behind in a marathon of digitalization.

This global dilemma is mirrored in Pakistan. Pakistan is really struggling in a way of digitalization, but its few wealthy urban areas of Pakistan like Punjab, Islamabad and few districts of KPK are far better than rural areas and even urban areas of Baluchistan in digitalization, Baluchistan is really far behind in this race with poor advancement in technological use, neglecting in acceptance of advancement, institutional and cultural barrier, limited access to ICT services/ devices and under funding of education in Baluchistan, Which is a largest province of a nation but is still less developed than other provinces and still facing a proxy wars in different sects of a Baluchistan. These problems are blocking its way towards a digitalization and modernizations which further more lightened the issues like poverty unemployment and unskilled youth. The students of Quetta (capital of Baluchistan) is a district with having a relatively more resources then rural areas still don't have enough digital skills to compete in a digital market or a systematic education system

Secondary education is a really crucial stage of education. At this stage they progress a fundamental skills which further help them out in choosing their career path, and if at this stage they lack their basic digital skills it does not only hamper their level of interest in choosing a path in ICT but also risk in digital revolution of Pakistan, and take it further more steps back in this path. Moreover in future they were unable to properly

use digital resources for different purposes without a risk of cyber security and misleading information.

A vast researches explicit that now a days with a globalization it's really crucial to have digital literacy especially for our young youth as it's our future. But still our students' are lacking behind in it specially secondary school students even highly experienced students often struggle with problem solving and higher order skills. Research: (e.g., Martzoukou et al., 2020; Leu et al., 2015). States that the barriers like poor access to devices further more worse a situation specifically in 3rd world countries as same as in Bangladesh (Rahman, 2019), Kenya (Hennessy et al., 2010), and Nigeria (Awoleye et al., 2014). The research of (Ashraf et al., 2020; Farkhanda et al., 2021), conducted in Pakistan highlights that ICT skills of students of Punjab are at moderate level and still lacking in many skills behind. This study attempts to fill a digital knowledge gap that still exists in Baluchistan even in Quetta district.

This study aims to investigate a digital skills of secondary school students in Quetta district with two dimension model firstly it assess a student's digital skills with ICT model of 6 different domains, and then address the challenges or barriers in integration of these skills. The study provides a thorough knowledge of both individual strengths and systemic constraints by combining several points of view, offering recommendations for future research, pedagogy, and policy. The potential for several contributions makes this work noteworthy. By improving the limited body of knowledge on digital literacy in Baluchistan, it addresses a regional research need from an academic standpoint. It provides evidence in support of ICT reform initiatives in education at the policy level, aligning Baluchistan with both national and international goals. The study argues that digital literacy is not only a technical skill but a modified form of competencies that help out the students in overall their journey through academic success, employability, and professional development. Raising of digital literacy level in Quetta district is not only a social justice demanded by students but also a pedagogical need of current trends, by acquiring these skills a new gateway opens for a students of Baluchistan that significantly reduce inequalities, unemployment, in capabilities of students regarded the demand of job market and furthermore improve employability and foster an equitable development of Quetta (Baluchistan).

The development or assessment of digital skills of secondary school students of Quetta Baluchistan is still understudy so far despite a digital revolution in a world, After a digital transformation, Pakistan also joins this marathon its ICT integration is now a days highly valued in curriculum and in Pakistan vocational education objectives and in international framework like DIGCOMP, national vocational training programs also initiated to achieve that objectives, although Baluchistan is still out of this umbrella yet, schools in Quetta suffers from low access to digital devices, poor infrastructure, inadequate facilities, poor internet connectivity, unusual load shedding, lack of teaching training, collectively Baluchistan is left behind uncovered without digital reforms.

In a result, Students of Quetta only explore limited digital skills primarily via social media use or uses or their personal mobile Phones. Higher-order skills that are heavily skewed toward communication and entertainment, such as cyber security, critical information evaluation, and problem-solving, are still underdeveloped. Because of this imbalance, students are not well-prepared for academic success, employment in a digital economy, and safe online participation.

The dearth of real research on digital literacy in Baluchistan exacerbates the issue. Existing research from other provinces (such Punjab and Sindh) cannot be extrapolated due to the contextual differences in infrastructure, culture, and policy execution in Quetta. Without region-specific research, policymakers do not have the data they need to develop effective actions.

The primary problem this study aims to address is the unequal and inadequate development of digital literacy among Quetta secondary school students, which is caused by structural barriers at the institutional, cultural, and policy levels. In addition to maintaining Pakistan's educational inequalities, this discrepancy puts the province's ability to prepare its youth for participation in the digital knowledge economy at risk.

Literature Review

The term "digital literacy" has changed significantly since it was first used in the late 20th century. It used to be linked to computer literacy, which is mostly technical knowledge of hardware and software, but it has since broadened to include social, ethical, and cognitive components. While Gilster (1997) defined digital literacy as the ability to understand and apply information from digital sources, Martin (2005) emphasized a comprehensive framework that covers access, evaluation, creation, and communication. More recently, Ng (2012) distinguished three aspects of digital literacy: technical, cognitive, and socioemotional. She emphasized that all three are essential for successful digital engagement.

The European Union's DIGCOMP framework (Ferrari, 2012; Vuorikari et al., 2016) remains the most often cited model. It has five competency areas: information and data literacy, digital content production, communication and cooperation, problem-solving, and safety. Its advantage is that it provides a structured, measurable framework that can be adjusted for use in different learning environments. However, frameworks like DIGCOMP may downplay the cultural and critical aspects of digital literacy, reducing it to a set of measurable abilities rather than a socially embedded practice, claim critics like Pangrazio (2016).

Scholars have debated whether digital literacy is better understood as a critical literacy or simply as a set of practical skills. Buckingham (2010) asserts that in addition to operational competence, young people need to develop the ability to critically evaluate, comprehend, and create digital content. Similarly, Lankshear and Knobel (2015)

highlight the importance of "new literacies" related to remix practices, participatory culture, and collaborative knowledge production.

Constructivist theories state that digital literacy develops most effectively when it is included into real-world, problem-based projects as opposed to isolated computer lectures (Jonassen, 2000). Socio-cultural perspectives emphasize how context, equality, and power relations influence access to digital technology (Warschauer, 2003). These perspectives are especially relevant in regions like Baluchistan, where structural inequalities limit opportunities for critical and creative thinking as well as access to technology. The people of Latin America mostly use internet for purpose of entertainment and social media use rather than for a purpose of education, development, or civic engagement,- Cabello-Hutt et al. (2018). This research occurs in Jordan which depict a fact that student of their secondary school are good in communication skills and use of social media but in-proficient in safe use of apps or in higher order skills, according to Alkhateeb (2021).these researches can demonstrate a current pattern in uses or learning of digital skills, students mostly focus on communication skills or multimedia skills but unable to properly and safely use higher order skills like cyber security, problem solving and etc.

Baluchistan: There aren't many studies. In terms of ICT infrastructure, policy execution, and internet penetration, the province is lagging behind. According to Batool and Mehmood (2012), pupils in this region are at a disadvantage because of systemic shortcomings in the implementation of policies and the provision of infrastructure. This study fills a major vacuum by analyzing the systemic barriers to ICT integration and providing empirical data on digital literacy levels in Quetta, Baluchistan.

The material that has been analyzed consistently highlights a paradox: students in the Global South and around the world are not proficient in higher-order domains like critical assessment, problem-solving, and digital safety, despite being habituated to using communication tools due to casual use. Studies that focus on underprivileged regions, such as Baluchistan, where policy and infrastructure deficiencies exacerbate the digital divide, are scarce, nonetheless.

The following contributions are made by this study:

1. It provides factual data on the digital literacy of Quetta pupils across six ICT domains.
2. Examining gender and academic stream differences and offering viewpoints on equity issues.
3. Highlighting systemic barriers to ICT integration through the perspectives of educators.
4. Presenting findings in regional, global, and national settings to advance the discussion of digital equity in education.

Methodology

A quantitative, cross-sectional approach was used in this study to assess pupils' digital literacy abilities and pinpoint obstacles that teachers had mentioned. Teachers and students in Quetta's secondary schools were among the population. 138 students (36% male, 64% female; 69% scientific, 31% arts) were chosen at random to be evaluated. Furthermore, 133 educators were polled about their ICT difficulties. The DIGCOMP-adapted Digital Literacy Assessment Tool (DLAT) covers six domains: cyber security, problem-solving, communication platforms, multimedia tools, Microsoft programs, and content access. Teacher Survey: Expert-validated structured tool measuring barriers to ICT integration (Cronbach's $\alpha = 0.75$). In accordance with ethical guidelines that guaranteed anonymity and consent, data was gathered in school computer labs. Descriptive statistics, cross-tabulations, and mean analysis of the data from the teacher survey were performed using SPSS.

Results and Findings

Student Digital Literacy Competence

The results of the student survey indicate that there are significant differences in digital literacy across the six assessed domains. Communication tools performed the best, with 66.6% of students being categorized as advanced. The widespread use of smartphones, social media, and instant messaging apps by students indicates that they have acquired digital communication skills from their unofficial exposure.

However, students only had a moderate level of skill with multimedia technology and content access. Approximately 42% of those surveyed claimed to be advanced users of multimedia applications such as PowerPoint and video tools, and 38% claimed to be able to find and obtain content online. Performance remained surface-level, nevertheless, with little sign of advanced content creation or critical evaluation skills.

The most concerning results indicated that cyber security and problem-solving were the weakest domains. Notably, 89% of students found it difficult to use ICT resources for real-world or academic purposes outside of routine tasks, indicating that their problem-solving skills were at the novice level. In a similar vein, over 59% of students in the cyber security course were classified as novices, demonstrating a lack of understanding regarding safe browsing practices, creating secure passwords, and protecting themselves from online threats. These results demonstrate the critical need for targeted instruction in sophisticated and significant areas of digital literacy.

Table 1: Proficiency of students in different ICT skills

Domain	Beginner (%)	Intermediate (%)	Advanced (%)
Microsoft Applications	30.4	62.3	7.2
Multimedia tool	34.0	57.2	23.1
Communication tool	13.0	20.3	66.6
Problem solving	89.1	7.2	3.6
Content access	19.6	57.2	23.1
Cyber security	59.4	30.4	10.1

Figure 1: Graphical representation of Proficiency of students in different ICT skills

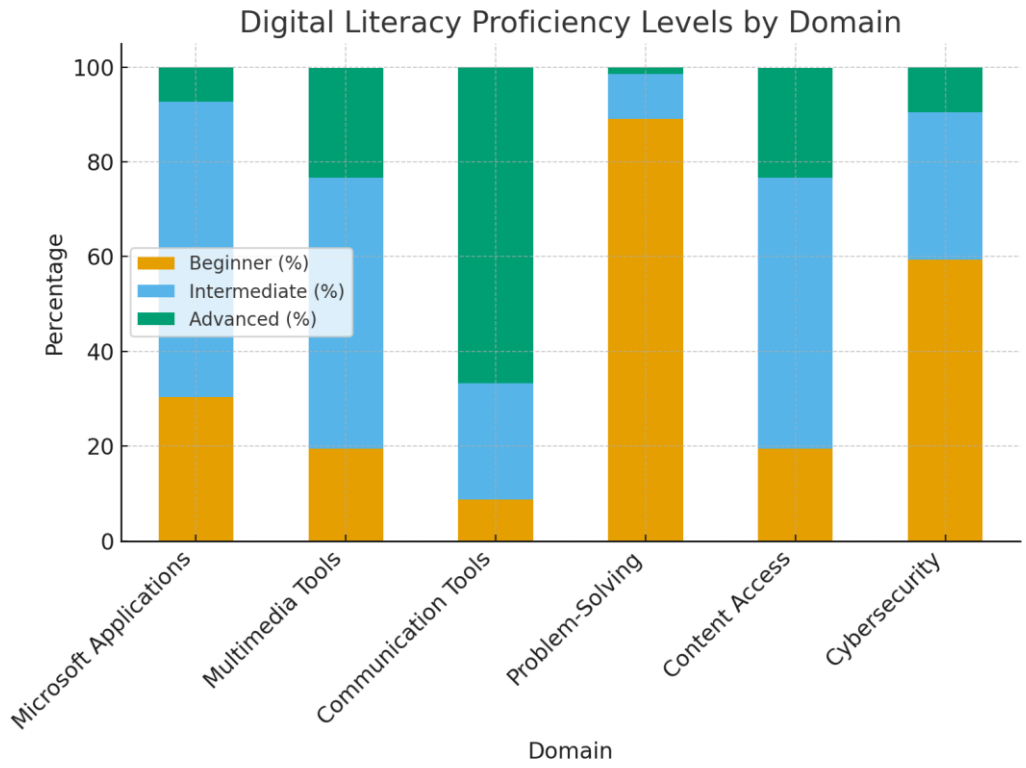
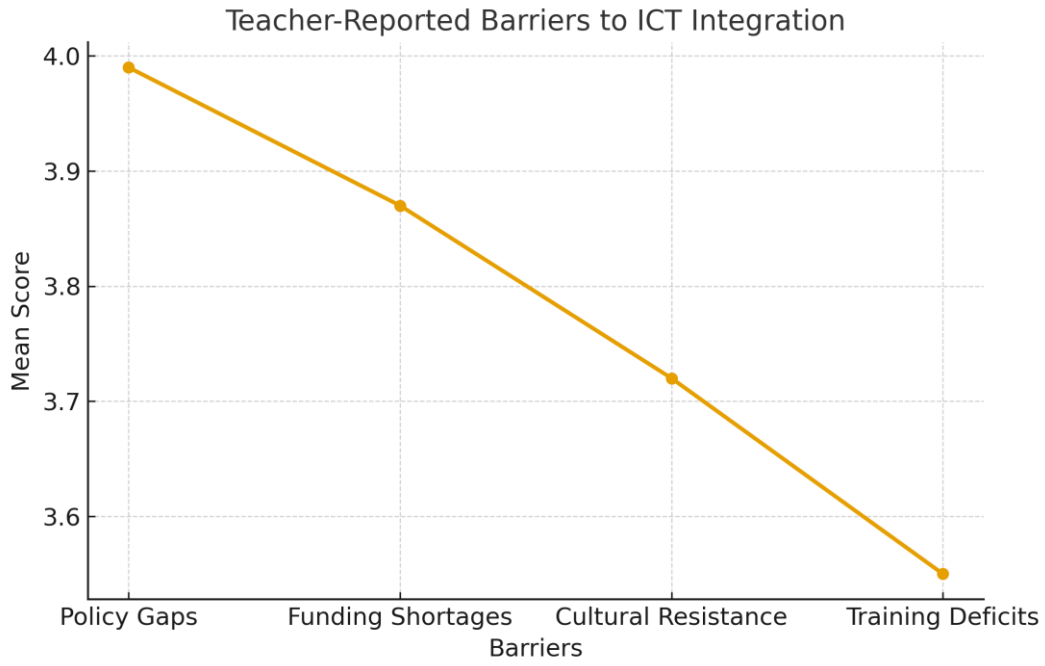


Table 2: Teacher-Reported Barriers to ICT Integration

Barriers	Mean Score
Lack of clear ICT policies	3.99
Limited teacher training	3.78
Insufficient budget	3.83
Cultural resistance	3.81
Limited internet access	3.62
Limited access to devices	3.29
Tools not aligned with curriculum	3.32
Lack of digital content	2.36
Teachers confidence in ICT	2.24

Figure 2: Graphical representation of Teacher reported barrier In ICT integration



The teacher poll provided valuable insights into the systemic barriers preventing the spread of digital literacy. An study of mean ratings revealed that the absence of a clear ICT policy was seen as the largest barrier (M = 3.99). Teachers often emphasized that because there were no official institutions or provincial norms, schools lacked a coherent approach for incorporating ICT.

Funding constraints were the second biggest barrier, with teachers reporting insufficient funds for ICT equipment, upkeep, and internet access (M = 3.87). Cultural opposition was the third obstacle (M = 3.72), reflecting parents' and some teachers' skepticism of ICT as a learning tool rather than a distraction Finally, it was shown that poor teacher preparation was a common problem (M = 3.55), with many educators reporting that professional development programs were either nonexistent or overly technical in nature rather than pedagogically integrated.

In a nut shell, funding explicit that students of secondary schools of Quetta have good communication skills that may be required by usual use of social media or mobile phones , study also depict that mostly students lack in higher order skills like critical thinking, problem solving, cyber security, and critical evaluation of relevant information. On other side in addressing a barriers of digital literacy we find out the lack of funding, limited access to devices, poor infrastructure, legislative gap, and lack of teachers ICT training hamper a path of digitalization in secondary schools of Quetta, eventually or collectively lacking of our students in digital literacy is not an individual failure but a systematic causes of deficits.

Discussion

The findings of this result will add up a literature into degree of Digital literacy among secondary school students of Quetta Baluchistan. The results of this study clearly show that the skills level of students in 6 different ICT domains, where in communication skills students' scores really good while scores really bad in problem solving and cyber security skills. On second terms this study reveals prominent barriers of a integration of ICT skills among Secondary school students which highlights towards low funding issues, limited access to devices, poor infrastructure, poor teacher training and awareness with device, and legislature gaps are to blame for these deficiencies.

Students' high levels of proficiency with communication technologies and skills highlight the significant influence of informal digital learning and use of mobile phones and devices outside of the classroom, students frequently get these abilities by their own social media, and smartphones. Same results have been reported in Chile (Cabello-Hutt et al., 2018) and the UK (Martzoukou et al., 2020), where students exhibit a strong interest in communication skills but are less or un proficient in its critical or academic skills.

Problem-solving abilities are the study's most obvious weakness, with 89% of students categorized as beginners. Problem-solving is a higher-order skill that requires both technical know-how and the ability to apply ICT tools in creative and difficult ways.

Since it allows students to generate knowledge through practical projects, the capacity to solve issues in digital environments is crucial for meaningful learning, according to Jonassen (2000).

Globally, similar problems have been recorded. Koryakovtsev and Kulikov (2023) found that while Russian secondary students were good at the basics, they couldn't use digital tools in practical settings. According to Hatlevik and Christophersen (2013), Norwegian students were comfortable with ICT, but they struggled with non-routine digital problem-solving activities and critical evaluation. These parallels suggest that the problem is exacerbated by Baluchistan's structural challenges rather than being unique to the region.

Students' low cyber security awareness—nearly 60% at the basic level—is another important conclusion. Digital safety is an essential literacy in today's digital world, when online disinformation, identity theft, and phishing are common cyber threats. Alkhateeb (2021) discovered comparable shortcomings in Jordanian pupils, highlighting the fact that school curricula frequently ignore digital safety. Students in Pakistan are at risk of exploitation since cyber security is rarely covered in secondary education. Baluchistan's disregard for cyber security education highlights what Pangrazio (2016) refers to as the "critical" aspect of digital literacy, which is the necessity of enabling students to participate in digital culture actively, safely, and critically in addition to being consumers. Without interventions, there is a risk of both personal injury and wider social vulnerabilities in a society that is changing due to digitalization.

A different viewpoint is offered by the teacher survey, which identifies structural obstacles as the primary reason why students' skills differ. The most highly ranked barrier was the lack of defined ICT policy ($M = 3.99$), which was followed by cultural opposition, limited funding, and inadequate training. These results support the observation by Batool and Mehmood (2012) that Pakistan's ICT policies frequently fall short during the implementation phase.
Teachers' worries about inadequate training serve as a reminder of how inadequate professional development approaches are. Instead of integrating ICT pedagogically, many programs concentrate on providing fundamental technical skills. According to Ertmer and Ottenbreit-Leftwich (2010), educational approaches, teacher confidence, and beliefs are essential for effective ICT use. ICT does not function as an integrated learning tool but rather as an add-on in the absence of ongoing, context-specific training.

Another barrier which hinders a digitalization is cultural and institutional barrier which shows a mistrust of society upon technology and fears to get dependent on that. Parents usually consider technology as destruction rather than instructive products, similarly a research done in Kenya (hennessy et al., 2010) shows an opposition of educators into implementation of ICT in classroom and consider it as destruction for students learning, to cope with this situation community engagement and awareness is deadly needed. Comparing Baluchistan to other provinces, Baluchistan is really far behind

than other provinces in this way highlights an injustice it faces, their better infrastructure, vocational training programs, better facilities, legislative measures encourages relatively greater abilities, competencies, and skills among students of other district specifically Punjab, as research of (Ashraf et al., 2020; Farkhanda et al., 2021). Although rural areas are neglected but at least urban areas are reformed with current trends same case with districts of Sindh where urban areas like Karachi has relatively greater academic success in terms of digital literacy, In contrast Baluchistan urban areas are still not at that level where it expected to be.

A comparative research of Warschauer (2003) shows a relative comparison of regional differences where certain areas were provided with same devices and connectivity but still their results, outcomes, and abilities differ, that further highlight many barriers which hinder regional differences. Baluchistan is also facing the regional differences with social and economic injustices as well even in this district comparatively same level of resources are not provided facing injustice, which risk of Baluchistan falling further behind. According to Pangrazio (2016), digital literacy enables students to critically analyze an information or content In contrast like other nations and district, Baluchistan students skills are only limited to social networking or entertainment which is really an alarming situation for a youth of Baluchistan.

Thus, it is not only an educational issue but also a political and societal necessity to incorporate digital literacy into curricula. Essential digital skills help students resist misinformation, participate in democratic life, and promote sustainable development.

Conclusion

This research assesses digital literacy skills of secondary school students in Quetta district of Baluchistan through a digital literacy assessment tool (https://europa.eu/europass/digitalskills/) available for online assessment. This tool assess the skills of students in 6 different domains of ICT which are: Microsoft skills, Multimedia skills, cyber security skills, content access, communication skills and problem solving skills on a second part of this research highlights or Address a Barriers which hinder a integration of ICT skills among secondary school students, this survey was conducted by educators or teachers of same school in order to get a relevant data the findings shows that he ICT skills of students are really art risk especially in higher order skills like problem solving skills, cyber security and critical thinking skills, while overall good in communication skills or multimedia use mainly due to informal use of devices for a purpose of entertainment outside a classroom. These results are in a line with global researches that our youth is mainly getting engaged for informal use like communication skills and for social media use for a purpose of entertainment but really lacking behind in academic digital skills or competencies specially a school students same as with a students of Quetta but here we can say that a situation is more worst then other provinces and nations due to systematic failure and inequalities. The findings lend credence to the idea that digital literacy encompasses more than just technical know-how. Constructivist theories emphasize the importance of integrating

ICT into problem-based, real-world work, yet this isn't the case in Baluchistan. While socio-cultural approaches emphasize how local contexts and systemic inequities affect digital chances, critical literacy frameworks emphasize the urgent need to address cyber security, information evaluation, and digital citizenship.

Inequities between Baluchistan and other parts of Pakistan, especially Punjab and Sindh, which have more developed ICT infrastructure and policy execution, are highlighted in the study at the provincial level. In the absence of focused measures, this digital divide could hinder students' future prospects for higher education, employment, and political engagement while also sustaining educational inequity. In the end, digital literacy needs to be acknowledged as a socioeconomic requirement as well as an educational entitlement. Without access to organized digital training, Baluchistan students cannot be expected to compete in the information economy of the twenty-first century. The urgency is increased by the speed at which technology is changing, where employability, democratic engagement, and social inclusion all depend on abilities like problem-solving, cyber security, and critical information evaluation.

Recommendations

In view of the study's results and global best practices, the following recommendations are made:

Curriculum Reform and Integration

- ICT should be a compulsory part of our curriculum commencing from a elementary level and so on to give basic and fundamental skills to students.
- In addition to basic skills higher order skills and operations should also be a part of our curriculum.
- We can also apply or adapt international framework as well for better reforms like European DIGCOMP framework in Pakistani settings.

Teacher Training and Professional Development

- We should move from traditional training programs to CPD (continuous processional development) programs for proper training of teachers particularly in ICT integration.
- It's a high time we should move from traditional teaching methods to ICT teaching techniques to make students and community comfortable with technology in terms of education.

Investing in Resources and Infrastructure

- There should be proper ICT labs, teachers, devices, and reliable connectivity of internet.
- Attract international and national investments for ICT programs, and technical assistance.
- Reliable electricity/power outages and backup system should be installed in school specifically in ICT labs.

Governance and Policy

- The integration of ICT in educational policy is necessary or deadly needed for Baluchistan with proper accountability system
- Make sure that programs and initiatives should be implemented and should have progressive measures
- Under a district education authorities there should be decentralize leadership in schools specifically regarding ICT integration to meet with local level needs.

Cyber security and digitalization

- As a part of curriculum: Cyber security should be indulge in our school curricula along with proper usage, safety measures, data protection, cyber bullying, preventive measures and laws.
- Practical Training: Schools should routinely hold workshops on safe digital practices so that students can use their skills in real-world situations.
- Critical Digital Citizenship: Children must be taught how to critically evaluate digital content and engage in online communities responsibly, in addition to safety.

Mobilization of Resources and Funding

- Greater Budget Allocation: To avoid diversion, the federal and provincial governments should set aside specific monies for ICT in education, ring-fringed budgets.
- Collaborations: Financial and technical assistance can be obtained through partnerships with NGOs, international organizations (such as UNICEF and UNESCO), and the commercial sector.
- Low-Cost Solutions: To lessen reliance on pricey proprietary software, schools should investigate low-cost, open-source digital tools.

Prospective Research Paths

- Longitudinal Studies: To gauge the effectiveness of interventions, future research should monitor the evolution of digital literacy over time.
- Rural-Urban Comparisons: Studies should examine the differences in digital literacy between isolated rural areas of Baluchistan and urban areas such as Quetta.
- Qualitative Insights: Ethnographic research may offer more profound understandings of cultural beliefs, pedagogical approaches, and ICT-related student experiences.

These suggestions have the potential to change digital literacy in Baluchistan from an unorganized, unstructured skill set to a fair, organized, and future-ready competency if they are put into practice. Overcoming the digital divide is a socio-political commitment to equity, empowerment, and advancement rather than just a technical problem. Baluchistan can enable its students to flourish in the digital era by adhering to

international best practices while attending to local demands. This will enhance Pakistan's contribution to the global knowledge economy as well as provincial development.

Bibliography

1. Ashraf, M., Riaz, M., & Hussain, A. (2020). Teacher professional development and digital literacy in Pakistan. Journal of Education and Practice, 11 (4), 45–56.
2. Batool, S., & Mehmood, K. (2012). Information literacy challenges in Pakistan: An overview. Pakistan Journal of Library & Information Science, 13 (1), 1–12.
3. Buckingham, D. (2010). Defining digital literacy: What do young people need to know about digital media? Nordic Journal of Digital Literacy, 4 (1), 21–34.
4. Chaudhary, S. (2018). ICT integration in Indian education: Rural-urban challenges. *Asian Education Journal, 15 (2), 120–135.
5. Ferrari, A. (2012). Digital competence in practice: An analysis of frameworks. European Commission.
6. Knobel, M., & Lankshear, C. (2010). Digital literacies: Concepts, policies, and practices. Peter Lang.
7. Koryakovtsev, D., & Kulikov, S. (2023). Assessing students' digital literacy skills in real-world tasks. International Journal of Educational Technology, 14 (2), 55–68.
8. Martzoukou, K., et al. (2020). Digital competence for everyday life: Self-assessment and perceptions. Journal of Documentation, 76 (4), 931–961.
9. Rahman, M. (2019). ICT and literacy in Bangladesh: Opportunities and challenges. Asian Education Review, 10 (2), 88–102.
10. UNESCO. (2021). ICT in education: Policy, infrastructure, and practice.