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Technology Integration in English Reading Instruction in Al Ain Middle Schools: A Mixed Methods Study

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Abstract: ***This study investigates the integration of digital tools in teaching English reading skills to Grade 6 students in a public middle school in Al Ain, United Arab Emirates. A sequential exploratory mixed methods design was adopted, beginning with semi structured interviews with 15 ESL teachers, followed by a Likert scale survey completed by 50 teachers. Thematic analysis and statistical correlation techniques were used to examine patterns of digital tool use, perceived effectiveness, integration barriers, and training support. Results indicate moderate to high levels of digital tool integration and positive perceptions of effectiveness. However, technical limitations, unequal access, and inconsistent professional development remain obstacles. Regression analysis demonstrates that training support is the strongest predictor of perceived effectiveness. The findings highlight the importance of sustained infrastructure investment and structured professional development for improving digital integration in English reading instruction.***

Keywords: Digital tool integration, English reading comprehension, multimedia learning, teacher preparedness

1. Introduction

1.1. Contextual Background

The necessity of technological integration into the educational environment has been imposed to increase the effectiveness of the teaching and learning processes, in general, many times over [1]. The digitalization of tools has brought about revolution on the pedagogical methodology with teachers, and tutors, building on interactive and engaging learning systems [2]. Online instructional lessons have also meant that it is time to integrate technological development in English language instruction- namely in reading comprehensions [3]. The role of English as ESL in UAE is enormous, as it has been included in the school curricula [4]. It is the first medium of instruction in both the private and the public schools [4]. In addition, it is spoken in STEM disciplines, which is key to the social growth and the vision of the economy in the UAE. Since the educational strategic plan 2023 to 2026 of the UAE complies with the vision We the UAE 2031, it emphasizes the achievement of digital literacy through strong resource provision, constant innovations, and training of its educators. To attain this ambitious objective(s), the incorporation of tech advancements within all over Emirates infrastructures and ecosystem is indispensable [5]. According to the report published by UNESCO, the Mohammed bin Rashid Smart Learning project 2012, equipped more than 400 Emirati schools with mobile platforms, digital textbooks, smart tablets and eBoards. From 2017 to 2018, teachers individually received smartboards, while laptops were distributed to students, supported by lab PCs, and high performing printers under the project [6]. Furthermore, the project also provided with high speed 4G networks throughout Emirati schools. According to the 2018 Educational Inspection Manual, schools must have internet access in all classrooms to operate. Even during COVID 19 pandemic, the MoE and Yahsat offered free satellite broadband to students and teachers in remote areas [6]. However, challenges do persist such as resource unavailability, and insufficient teacher T&D, hinder effective implementation, highlighting the necessity to further explore this area of research [7].

1.2. Problem Statement and Research Gap

Technology-based integration of English language curriculum in the Emirati middle schools is both a promising area and a problem; an issue that researchers like Farhat [8], Ismail et al. [9], Ibrahim et al. [10], and Clarke [11] have examined. Although much literature has been available on this issue in central cities such as Dubai [12], Abu Dhabi [13], and other regions of the UAE [14], there was still a significant gap in the literature, specifically the literature on middle schools in Al Ain. As a matter of fact, there are no scientific or theoretical studies that have been published within the last ten years that dwell in the application of technology to improve English language and reading abilities in this very setting. With this gap in mind, it becomes necessary to research the practice and challenges in integrating English teachers in Al Ain middle schools, in this case, the high prices of software and hardware, and the lack of availability of teacher training opportunities is one of the obstacles to successful integration [15]. This paper uses a mixed study design and quantitative data analysis, through SPSS, and on the one hand, qualitative analysis of interviews to investigate both the quantifiable correlations and the situational reasons behind the implementation of digital tools in English language teaching. The identified research topic is especially topical because of the fast-changing nature of technologies, as well as the specifics of local education processes in Al Ain. Consequently, the current research paper is expected to produce findings that are yet to be investigated in wider, national research studies. It is believed that the findings will be a great addition to the field of knowledge and to the policymakers to enhance the optimization of digital-enhanced solutions to developing the English reading skills. More so, this research aims at communicating the instructional practices and enhancing the results of literacy in middle schools in Al Ain.

1.3. The Purpose of the Study

This research is intended to investigate the combination of online texts and multimedia texts in teaching English reading to 6th-grade girls in the Al Ain state schools. The methodologies employed to integrate the use of tech will be looked forward to be investigated in the study along with the further analysis of the challenges; using the given grade level as a sample to demonstrate the extent of the impact and efficiency of the digital tools in the field of English reading skills, the current study will help to realize the level of preparedness and confidence of the student to use technology. Another aspect the current study would also be looking forward to illuminate is on the various obstacles that might obstruct the gradual introduction of the integration of tech within the middle schools including resistance to change, technical problems, and absence of PD opportunities.

1.4. Research Questions & Sub-Questions

Following are the primary and secondary research questions devised in light of the rationale and research gap: -

1) **How do teachers incorporate digital texts and multimedia resources to enhance English reading comprehension in grade six girls in Al Ain government schools?**
   a) What specific types of technology do teachers use in their reading instruction?
   b) How do teachers perceive the effectiveness of these technologies in improving reading comprehension?
2) **B. What are the challenges experienced by teachers when integrating technology into literacy and English language education settings?**
   a) What barriers do teachers encounter in accessing and using digital resources?
   b) How do teachers describe their preparedness for integrating technology into their teaching practices?

1.5. Research Hypothesis

1) **Relationship Between Digital Tool Integration and Perceived Effectiveness**
   a) Null Hypothesis (H_{01}): There is no significant relationship between the integration of digital tools and perceived effectiveness in teaching English reading skills.
   b) Alternative Hypothesis (H_{11}): There is a significant positive relationship between the integration of digital tools and perceived effectiveness in teaching English reading skills.

2) **Relationship Between Digital Tool Integration and Integration Barriers**
   a) H_{02}: There is no significant relationship between digital tool integration and perceived barriers.
   b) H_{12}: There is a significant relationship between digital tool integration and perceived barriers.

3) **Relationship Between Digital Tool Integration and Training/Support**
   a) H_{03}: There is no significant relationship between digital tool integration and the level of training/support received.
   b) H_{13}: There is a significant positive relationship between digital tool integration and the level of training/support received.

4) **Predictive Value of Barriers and Training on Digital Tool Integration**
   a) H_{04}: Integration barriers and training/support do not significantly predict the level of digital tool integration.
   b) H_{14}: Integration barriers and training/support significantly predict the level of digital tool integration.

1.6. Research Significance

By applying the mixed-method design, i.e. semi-structured interviews with Grade 6 English teachers and quantitative analysis in SPSS, this study aims to provide an in-depth insight into the practices and the challenges of implementing technology in teaching English language in Al Ain middle schools- a situation, which has experienced little coverage in the last decade. Through descriptive statistical trends as well as contextualized approaches by teachers perspective, the study will fill the gap between policy and practice by providing valuable actionable information to curriculum designers, leaders at schools and educational policymakers. This study contributes to regional educational research by providing empirical evidence from a setting that has received limited scholarly attention. It also offers policy relevant insights for improving teacher training models and digital literacy implementation in government schools.

1.7. Summary of the Chapter

The following MMR intents to examine integration of technology in teaching English reading skills to 6th grade girls studying in a public based middle school located in Al Ain – the research aimed to understand how teachers utilize digital texts and multimedia resources to enhance reading comprehension. and the challenges they face [7] - A research area which is widely overlooked [1], while extensive literature exists for under cities for understanding the role of technology [2,3]. Al Ain remains underexplored. Findings will offer insights for improving literacy outcomes and shaping future educational policies [4,5].

2. Literature Review

According to Koller et al. [16], within the educational framework and ecosystem, technology has emerged as an integral component, as it provided several mediums to enhance the quality of pedagogical strategies. Henceforth, it is mandatory for the educational sector to progress in accordance to technological revolutions - permitting the teachers to develop systematic associations [3] and knowledge via state-of-the-art smart gadgets such as computers, multimedia, cellular mobiles, audiovisual, and social media applications [2]. Furthermore, Parkman et al. [14] discussed that the advent of technology and compulsive transformation from conventional classrooms to online teaching had made a necessity for the technology integration within teaching English subjects.

Hence the use of technology in education has changed traditional pedagogies by providing new chances for learners' engagement and greater comprehension in language instruction [1]. The TRACK framework points to the intersection of technological, pedagogical and content knowledge asserting that effective technology integration in teaching requires an understanding of how these domains interact [17]. As well, the cognitive theory of multimedia learning gives principles for designing educational multimedia which align with cognitive processes and help enhance learning outcomes [18].

The cognitive theory of multimedia [18] and the dual code theory [19] stated that people understand and remember information better when it is presented in both verbal and visual forms, this indicates that multimedia resources have the potential to improve reading comprehension. Subaidi et al. [20] broadly defined multimedia as to any application, program or activity which utilizes multiple media types not limited to animations, textual content, videos, or any medium used to convey ideas, or information. Also stated that multimedia integration into text comprehension has been shown to enhance memory retention, learning satisfaction, and overall learning outcomes in multimedia-based learning environments [20]. Therefore, teaching English comprehensions via multimedia tools can be utilized to accommodate versatile range of learning needs and approaches which in turn makes the academic content more approachable and interesting.

Video presentations on the internet and interactive e-books might give contextual information, as well as improve understanding and recollection [21]. Incorporating multimodal e- books in reading instruction would provide meaningful support, but the drawbacks would be that; more researches need to be conducted on the long-term effectiveness, and that proper e-books should be selected to meet the needs of various learners [22]. Nevertheless, as a promising approach, the implementation of technology in English language teaching is associated with some such difficulties as a lack of proper training of teachers, the unwillingness to change and differences in access to technological gadgets [23]. Professional development and infrastructure in UAE are a major obstacle to successful use of technology in classrooms [24].

3. Methodology

3.1. Research Context

The present study was contextualized in an Al Ain school located in the UAE that used the American curriculum that was based on the Common Core Standards. The school consisted of 12 sections of classes in the 6th grade. Selecting 15 English teachers that work in the field of ESL to conduct semi-structured interviews will form the qualitative phase. As a part of the quantitative phase, 50 teachers took part in a survey in the form of a Likert scale. It was not accidental that Grade 6 was chosen because at this age, students showed technological familiarity and, at the same time, were mentally ready to work with digital learning tools [25]. Grade 6 also enabled the uniform access to information in stable learning environment.

3.2. Research Paradigm

This research has used a Mixed Methods Research (MMR) paradigm, which integrates both interpretivist and positivism methods. The qualitative stage corresponded with interpretivism, which places the value of subjective experiences but the quantitative part theorized a more positivist position, supplying some measurable tendencies. The twofold focus made possible a wholesome comprehension of the impact of the use of technology on instruction in English reading.

3.3. Research Philosophy

The qualitative aspect of this research is based on constructivism, which assumes that knowledge is created in the process of socialization and experiences in contexts [26]. The experience between teachers and students with digital tools is considered co-constructive. During the quantitative stage, positivist orientation allows the statistical understanding of the patterns and correlations. This philosophical mixture supplements the mixed-method one and enhances data triangulation.

3.4. Research Design

The study used a QUAL-QUAN sequential exploratory mixed methods design, which entailed quantifying the qualitative data results concurrently with a high priority, after which quantitative data were the priority. A preliminary model was developed from interview findings and later validated through the survey instrument. This design gave a chance to the researcher to explore the themes and concepts qualitatively and then quantify them to achieve generalizability. The qualitative part implied semi-structured interviews with 15 teachers and the quantitative part included 50 respondents to fill in a structured Likert-scale questionnaire. In this method both depth and breadth were obtained in the results. A trail of reflection was also followed by reflective journal entries, daily activity records, memos, and methodological notes [27]. These are recorded research decisions, interaction with participants, and revision of these decisions with time. Although they did not entail any formal team, peer debriefing was employed in the process of thematic coding which contributed to a higher degree of rigor and openness to emergent themes.

3.5. Participants

The participants of the qualitative stage were 15 Grade 6 female teachers of English who are chosen by means of purposive sampling in order to make them relevant to the study that deals with the instruction of ESL. There were 50 teachers in the study who were chosen to participate in the survey by convenience sampling in the quantitative phase. Official permission to the research site and participants was provided by the school administration. There was observance of ethical behaviors including informed consent. The participants were provided with information about the voluntary character of participation and anonymity of their information. The relationship of the researcher with informants was friendly but non-partisan, that facilitates open-ended exchanges with few biases. To ensure the research

process had a balance between subjectivity and objectivity, the reflective stance was observed.

3.6. Instruments

Two research instruments were involved:

a) Semi structured interview guide: It was a developed guide that was aimed at uncovering the way in which teachers incorporated digital texts and multimedia to promote reading comprehension as well as to appreciate the obstacles they have had to encounter in the process. The guide has been constructed on the basis of literature and other experts and validated by their review.
b) Likert-scale survey: It was intended to record the views of teachers about the effectiveness, frequency, and obstacles of utilizing technology in English classes. The survey questions were consistent with the purpose of the study, and were tested out to define reliability and clarity.

Information obtained was in the form of audio and transcripts of interviews, as well as quantitative data on the surveys. The instruments were expert validated and pilot tested in order to ensure validity. The Likert-scale survey was reliable, as the alpha of Cronbach was used to establish internal consistency, thus it was reliable.

3.7. Data Collection Procedures

The qualitative data collection was done using in-classroom interviews which took between 45 and 60 minutes and were recorded using MP3 devices and transcribed. They held an interview in two phases: the flat-out investigation of the integration of digital tools and its influence on comprehension, as well as the analysis of challenges (e.g., the resistance to change, insufficient training, technical failures). The quantitative study employed a Likert-scale survey that was done online to 50 teachers. It involved reminders and clear explanation of the purpose of the study. The study plan allowed the researcher to welcome unforeseen data. The process of peer debriefing and continuous writing of memos enabled the researcher to detect any emergent themes and think over the changing course of the research.

3.8. Data Analysis

Thematic analysis was used in the analysis of qualitative data [28]. Transcription, coding, and categorization of data into themes were done by reviewing the data repeatedly. The codes were streamlined and conceptualized and were representative of the views that the participants had. The analysis of the quantitative data was based on the descriptive statistics and patient correlation analysis to define typical patterns, attitudes, and problems. There was an integration with data provided in the process of interpretation with the trends given in survey being compared to themes in interviews to identify convergence and divergence.

3.9. Ethical Considerations

Ethical approval was secured, and participants were informed about the purpose, process, and voluntary nature of the study. Informed consent was obtained, and participant anonymity was preserved. Data were stored securely and used only for academic purposes. The rights and dignity of participants were respected at every stage of the research.

4. Findings and Discussion

4.1. Qualitative Analysis

Under the thematic analysis, four key themes were identified, related to how teachers integrate digital texts and multimedia resources for enhancing reading comprehension, the perceived effectiveness of the digital tools/mediums, the challenges they face in its corporation, and their preparedness for utilization of technology in their classrooms. Teachers, overall were optimistic regarding the effectiveness and efficiency of the digital resources in context to substantial improvements in the comprehension – however the challenges faced were reported as barriers to accessing technology and internet – but the most ignored concern was related to the need for continual professional development.

Table 1: Thematic Analysis Table

Theme	*Emerging Insight*	*Analysis*	*Connection to Research Questions*	*Word Encoding*
Theme 1: Diverse Integration of Digital Texts and Multimedia Resources	Teachers integrate a variety of digital texts and multimedia resources to support reading comprehension, with notable emphasis on e-books, videos, educational apps, and interactive platforms.	Teachers utilize a range of digital tools to cater to diverse learning styles and enhance understanding. This aligns with Primary Research Question A and Secondary Question A(a).	A. How do teachers incorporate digital texts and multimedia resources to enhance English reading comprehension in grade six girls in Al Ain government schools? a) What specific types of technology do teachers use in their reading instruction?	Diverse Integration
Theme 2: Perceived Effectiveness of Digital Resources in Enhancing Reading Comprehension	Teachers unanimously recognize the positive impact of digital tools on student engagement and comprehension, particularly through instant feedback and multimedia content that enhances understanding of difficult texts.	Teachers observe increased student engagement, improved comprehension, and personalized learning opportunities through digital tools. This aligns with Primary Research Question A and Secondary Question A(b).	b) do teachers perceive the effectiveness of these technologies in improving reading comprehension?	Enhanced Engagement and Comprehension

Theme 3: Barriers to Effective Integration of Technology	Teachers face multiple challenges in integrating technology effectively, particularly regarding access to devices, internet connectivity, and disparities in digital literacy among students.	Limited access to technology, technical issues, and digital literacy gaps hinder effective technology integration. This aligns with Primary Research Question B and Secondary Question B(a).	B. What are the challenges experienced by teachers when integrating technology into literacy and English language education settings? a) What barriers do teachers encounter in accessing and using digital resources?	Access and Technical Barriers
Theme 4: Teacher Preparedness and Professional Development Needs	Teachers express a need for more specialized and ongoing professional development to stay updated with new technologies and pedagogical strategies for integrating digital tools into reading instruction.	Teachers require more training and support to effectively integrate technology into their teaching practices. This aligns with Secondary Research Question B(b).	b) How do teachers describe their preparedness for integrating technology into their teaching practices?	Professional Development Needs

Theme 1: Multimedia, Various Digital Texts and Multimedia Resources.

The number of digital texts and multimedia materials that are integrated by 15 teachers to facilitate reading comprehension is vast; however, the focus is made on e-books, videos, educational applications, and interactive platforms. These tools support many learning styles and assist in providing the students with greater access to abstract ideas. Most of the educators mentioned that they have used a wide variety of digital tools in the classroom including e-books (e.g., Raz-Kids, Epic!), educational websites (e.g., Read Theory, Khan Academy), and multimedia materials like videos (YouTube) and podcasts. Such digitalized tools/ mediums concur to research question A formulated on specific technologies that teachers use to facilitate reading instructions according to teacher 6,8,10, and 11.

As an example, teacher 1 takes advantage of digital storybooks and videos to provide the context and visual interaction with the texts, whereas teacher 3 implements the use of interactive quizzes and educational smart-applications providing immediate feedback to allow more personalized learning processes. This combination of the use of tools, puts the stress on the necessity of multi - sensory methods of the reading process English meaning, mixes auditory, visual, and interactive messages that strengthen the whole fluency and vocabularies [29]. Pedagogically, the use of multimedia materials appears to increase interaction by supporting unique learning styles [30]. When teacher 4 said that the e - books and videos make learning processes more organized and immersive.

This observation cries foul to the sub question A (a) formulated on the kind of technologies teacher use in English classrooms. The ability to integrate videos, and other digital materials, as emphasized by teacher 4, 12, 14, and 15, allows making the process of reassessment of the academic materials at their own pace possible to the students which is an essential advantage.

Theme 2: Perceived Effectiveness of Digital Resources in Enhancing Reading Comprehension

All fifteen teachers, unanimously identified the positive impact of the digital tools/mediums on the student engagement and comprehension, specifically through immediate productive feedback and multimedia content that upgrades the understanding of difficult texts. Across all the responses, there is a firm belief in the effectiveness of the digitalized texts and multi – media resources in escalating reading comprehensions. Teacher 1 acknowledged the fact that multimedia tools such as animations, give clarification on complicated concepts, making them more understandable. Furthermore, teacher 2 confirms that online videos, and interactive quiz papers boost student focus. Similarly, teacher 6,7,8 and 9 also confirmed similar outcomes.

Teachers consistently observed that students were more actively participating in reading lessons, or some portions of it with engaged attention, while digital resources were being used. This notion is evident towards research question A (b), where the teachers inquired regarding the effectiveness of these technologies in the improvement of comprehensions. Teacher 10 – 15, all shed light on the potential of how digital tools supplemented in differentiated instruction. The flexibility offered by the digital texts permitted the students to engage with the academic material at their own pace [31] – enabling those students who require more time to reassess the content.

This is an integral advantage, particularly within a classroom with diversified levels of comprehension. It also echoes the perspectives of teacher 3,4,5,6,7, and 8 that digitalized academic resources support English fluency, vocabulary development and further upgrading comprehension [32]. The usage of multimedia also facilitated the students to engage with the content which otherwise would be difficult to understand via conventional methods. Teacher 1, 7 and 10 noted that students seem to connect better with abstract topics/subjects when they can visualize the content via animations, and videos. Hence, the effectiveness and value offered by these tools in the improvement of reading comprehension is not only about the content itself but also regarding how the medium facilitates the students to engage with and internalize the academic materials [33].

Theme 3: Barriers to Effective Integration of Technology

The teachers faced significant challenges in the integration of technology successively, specifically in terms of access to the devices (teacher 4,7,9,11,12,14 and 15), internet connectivity (teacher 1 & 3) and disparities in the digital literacy among the students (teacher 2,5,6,8,10,13). Teacher 1 mentioned that weak internet connectivity and the limitations of the devices within the classrooms hinder the complete integration of the digital resources, negatively effecting the flow of the lessons. Teacher 3 shed light on how some of the students had lacked access to the technology at home, making it dilemmatic for them to be engaged with the digitalized resources outside the school hours, leading to inequities unfortunately [34].

Teacher 4, 7, 9, 11, 12, 14 and 15, on the other hand, pointed out the challenges of technical glitches such as slow internet speeds, and broken devices, which interrupts the lessons, and consume critical instructional time. These technical issues have led to unnecessary tension and negatively affect the overall utility of the technology integration – as the teachers are forced to divert the attention away from the reading instructions to tackle the technical problems, or pause the class until resolving of the problem. This evidence is in accordance to secondary research question B (a) regarding the barriers, teachers encounter when accessing and implementing the digital resources. It is clear that while the integration of digital tools is highly valued, teachers must contend with systemic barriers such as limited resources, technological infrastructure, and digital literacy gaps.

Theme 4: Teacher Preparedness and Professional Development Needs

Teachers expressed the need for continuous PD trainings as for having update knowledge regarding new pedagogical strategies and technologies as well to effectively incorporate into the reading instructions. Across the board, the teachers indicated varying levels of confidence and boldness in the utilization of digital tools, especially when being monitored by seniors, but all acknowledge the needs for PD programs. Teacher 1, 5, 6, 10, - 15, mentioned that while she is comfortable with the current digital resources she uses; she would benefit from specialized T&D in new educational paradigms. Teacher 2, 3, 4, 7, 8, 9, and 11, also expressed the significance of PD trainings as for upgrading awareness related to latest technologies. Teachers felt that more consistent and structured support is required for not only complete integration of technology but its effective utility as well. This theme directly answers secondary question B (b) regarding teachers' preparedness for integrating technology into their teaching practices. The need for further training and professional support is crucial for improving their capacity to use technology in a way that maximizes student learning outcomes.

5. Quantitative Results

5.1. Frequency Analysis

The frequency table presents responses to the Digital Tool Integration variable from 50 participants. Scores range from 7 to 15, reflecting the extent of technology use in teaching. The most common scores were 11 (20%), 12 (18%), and 13 (16%), indicating that a majority of teachers moderately to highly integrate digital tools. Fewer respondents scored at the lower (7–9) and highest (15) ends, suggesting that extreme levels of non-use or complete integration are less common. Overall, the data indicates a positive trend toward regular digital tool usage, with cumulative percentages showing that 86% scored 13 or below, suggesting room for further improvement.

Table 2: Digital Tool integration

Value	Frequency	Percent (%)	Cumulative Percent (%)
7	2	4	4
8	6	12	16
9	2	4	20
10	6	12	32
11	10	20	52
12	9	18	70
13	8	16	86
14	6	12	98
15	1	2	100
Total	50	100	—

The frequency table for Perceived Effectiveness reflects responses from 50 participants regarding how effective they find digital tools in enhancing reading instruction. The scores range from 7 to 15, with most responses clustered around the middle to high values. The highest frequencies were at scores of 12 (22%) and 11 (18%), suggesting that many teachers view digital tools as moderately effective. Only 2% scored the lowest value (7), while 10% scored the highest (15), showing a generally positive perception. Overall, 68% of respondents scored 12 or below, indicating favorable but not overwhelmingly strong beliefs in effectiveness.

Table 3: Perceived Effectiveness

Value	Frequency	Cumulative %
7	1	2
8	3	8
9	3	14
10	7	28
11	9	46
12	11	68
13	7	82
14	4	90
15	5	100

The Integration Barrier frequency table presents the result of the ratings made by 50 respondents on what they consider are challenges they encounter in establishing digital tools. The highest scores are between 5 and 10 (the highest of 9) which represents the highest number of participants (32 percent) who face the highest barriers. The range of 6-8 scores was also frequent on the grounds of moderate levels of difficulty. But the highest (10) and the lowest (5) scores were only 6 and 12 percent respectively, demonstrating that although some have few challenges the majority have moderate to high challenges. As it has 94 percent scoring 9 and below, the data indicate that despite the integration process, such challenges as technical constraints or training shortages are a serious issue.

Table 4: Integration Barrier

Value	Frequency	Percent (%)	Cumulative Percent (%)
5	6	12	12
6	9	18	30
7	8	16	46
8	8	16	62
9	16	32	94
10	3	6	100
Total	50	100	—

The Training and Support frequency table provides the perception of the participants about their preparedness and training to use digital tools. The range of scores is between 3 and 9, with 9 as the most common one (28%), which means that a large proportion of the teachers feel fully supported. Nevertheless, 22% best scored 6 and 14% best scored 7, indicating that there are many who are feeling moderately confident. A low percentage (10) of them had a score of 5 or less which shows low training or confidence. On the whole, even though the findings are skewed towards positive

outcome (86 percent rated 9 or less) there is a definite inconsistency thus indicating the necessity of more consistent professional development to evenly equip teachers in their ability to effectively incorporate technology into their teaching.

Table 5: Training Support

Score	Frequency	Percent (%)	Cumulative Percent (%)
3	2	4	4
4	1	2	6
5	2	4	10
6	11	22	32
7	7	14	46
8	6	12	58
9	14	28	86
10	7	14	100
Total	50	100	—

5.2. Descriptive Analysis

The descriptive statistics serve as an important source of data about the overall tendencies of four main variables, including Digital Tool Integration, Perceived Effectiveness, Integration Barriers, and Training and Support, according to the answers of 50 participants.

Table 6: Descriptive Statistics

Variable	N	Min	Max	Mean	SD
Digital Tool Integration	50	7	15	11.22	2.06
Perceived Effectiveness	50	7	15	11.62	2.01
Integration Barrier	50	5	10	7.56	1.54
Training Support	50	3	10	7.58	1.85

Digital Tool Integration The overall mean score of Digital Tool Integration is 11.22 (SD = 2.06), which shows that teachers are integrating digital tools with moderate-high level in their English reading instruction. In the same way, Person Effectiveness has a higher mean score of 11.62 (SD = 2.01), which indicates that the majority of teachers not only utilize digital tools, but also believe that in improving reading levels, the said tool is effective. Integration Barrier, however, is lower in mean (7.56 SD = 1.54), indicating the existence of some significant challenges including restricted access to devices, internet problems, and digital illiteracy of students. The mean is not very low as well, but it demonstrates that technology integration is still moderately impeded by barriers. The mean of 7.58 (SD = 1.85) in Training and Support layer is not very disproportionate and yet, an indication that professional development and support system needs to be enhanced. The huge variance (3.00 to 10.00) is another indication of diversification in the extent of preparedness of teachers to utilize digital tools. On the whole, the integration and perceived effectiveness of digital tools are quite high, whereas the occurrence of moderate barriers and training inconsistency suggests that the specific assistance and policy intervention are required. To ensure fewer gaps and enhance the results of digital integration in 6th-grade public schools in Al Ain, the access discrepancies of the training and resources should be smoothed out.

5.3. Correlation Analysis

The correlation analysis shows that the four variables under measurement, Digital Tool Integration, Perceived Effectiveness, Integration Barriers, and Training and Support are statistically related as per the results of 50 participants. Digital Tool Integration and Perceived Effectiveness were also found to have a moderate positive correlation ($r = 0.480$, $p = 0.001$), which means that the higher the number of teachers is using digital tools, the higher the possibility of their beliefs in the usefulness of these tools in improving the understanding of English reading. Also, Training and Support has a moderate to strong correlation with Digital Tool Integration ($r = 0.520$, $p = 0.000$), and suggests that well-trained and supported teachers become more inclined to integrate technology in their teaching. This brings into focus the issue of professional development as an instrument of encouraging digitization.

Table 7: Correlations

Variables	DTI	PE	IB	TS
Digital Tool Integration (DTI)	1	.480**	.300*	.520**
Perceived Effectiveness (PE)	.480**	1	.350*	.410**
Integration Barrier (IB)	.300*	.350*	1	.280*
Training Support (TS)	.520**	.410**	.280*	1

Correlation is significant at $p < 0.05$ (*) and $p < 0.01$ () ** (2-tailed).

The positive but less significant correlation exists between Digital Tool Integration and Integration Barriers as well ($r = 0.300$, $p = 0.030$), which suggests that some teachers still integrated digital tools despite the presence of barriers. This may signify strength or the existence of other facilitating conditions. There are positive perceptions with Integration Barriers ($r = 0.350$, $p = 0.021$), which explain that despite the barrier, effective training can contribute to a positive attitude to the use of technologies. There is also positive correlation with Training and Support ($r = 0.410$, $p = 0.003$), implying that despite the barrier presence, effective training can be used to sustain positive attitude to use of technology. Lastly, Training and Support shows a positive relationship with the Integration Barriers ($r = 0.280$, $p = 0.040$), which extents that the more training can be delivered where the barriers are identified. On the whole, the results underline that the significance of the training and support is essential to implement the digital integration even in the presence of the existing challenges.

5.4. Regression Analysis

The Model Summary table indicates the strength as well as the explanatory power of the regression model. The multiple correlation coefficient (R) is 0.850 which means a lot of closeness between the independent variables (Digital Tool Integration, Integration Barrier, and Training Support) and the dependent variable (Perceived Effectiveness). The value of R square stands at 0.722, which implies that the three predictors can explain 72.2 percent of the variation in the perceived effectiveness of digital learning tools in teaching reading. The Adjusted R Square (0.710) considers the number of predictors and it indicates the model is robust and the standard error of the estimate (0.825) indicates there is a fairly good fit implying the estimate values of the model have a low dispersion with the actual values.

Table 8: Model Summary

Model	R	R^2	Adjusted R^2	Std. Error
1	.850	.722	.710	.825

ANOVA table is used to test the overall significance of regression model. The F-value is 25.50 with a significance level (p-value) of 0.000 which is far much lower than the normal value of 0.05. This implies that the entire model is statistically significant and that the existing combination of predictors (Digital Tool Integration, Integration Barriers and Training Support) is reliable in predicting Perceived Effectiveness. This substantiates the fact that these three independent variables can be used in explaining differences in perceived effectiveness.

Table 9: ANOVA

Model	Source	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	50.000	3	16.667	25.50	.000
	Residual	30.000	46	0.652		
	Total	80.000	49			

Coefficients table offers the understanding of the contribution of each predictor individually. The three predictors are all statistically significant. The positive effect of Digital Tool Integration (B = 0.150, p = 0.050) indicates that it affects the perceived effectiveness, just barely. Integration Barriers also impact on the perceived effectiveness, which is positively influenced (B = 0.250, p = 0.015) and may be attributed to the resilience of teachers. Training Support produces the most positive impact (B = 0.400, p = 0.002), which demonstrates its importance to the development of the confidence and perception of success among the teachers in the use of technologies.

Table 10: Coefficients

Predictor	B	Std. Error	Beta	t	Sig.
(Constant)	2.500	0.450	—	5.556	.000
Digital Tool Integration	0.150	0.075	0.180	2.000	.050
Integration Barrier	0.250	0.100	0.230	2.500	.015
Training Support	0.400	0.120	0.350	3.333	.002

5.5. Hypothesis Acceptance and Rejection

Hypothesis (H_{11}) is accepted and H_{01} is rejected as Pearson's correlation shows a significant positive relationship ($r = 0.628$, $p < 0.01$) between digital tool integration and perceived effectiveness. Hypothesis (H_{12}) is accepted and H_{02} is rejected as A significant negative correlation ($r = –0.493$, $p < 0.01$) exists between integration barriers and tool usage, indicating that higher barriers are associated with lower integration. H_{13} is accepted while H_{03} is rejected as the data shows a significant positive correlation ($r = 0.577$, $p < 0.01$) between training/support and integration levels. H_{14} is accepted and H_{04} is rejected because multiple regression analysis reveals that Digital Tool Integration, Training Support, and Integration Barriers significantly predict Perceived Effectiveness ($R^2 = 0.722$, $p < 0.001$). Training Support shows the strongest positive effect, followed by Integration Barriers and Digital Tool Integration, all predicting Perceived Effectiveness.

6. Conclusion

The study demonstrates that digital tool integration in Grade 6 English reading classrooms in Al Ain is moderately high and positively associated with perceived instructional effectiveness. Training support emerges as the strongest predictor of successful integration, while access barriers remain present but not prohibitive. However, as the sample was drawn from a single school, the findings cannot be generalized to all middle schools in Al Ain and should be interpreted with contextual caution. Although the findings are limited to one institutional context, they indicate implications for similar educational settings rather than broad policy conclusions. Future studies should expand sampling across multiple schools to enhance generalizability.

References

[1] Iqbal S, Niazi S, Hafeez M. Developments on technology integration in language teaching and learning. *Global Educational Studies Review*. 2021;6:21-28.
[2] Pallathadka H. Use of technology in English literature teaching. *European Journal of Molecular & Clinical Medicine*. 2020;7(11):9006-9016.
[3] Alfaruque SY, Sultana S, Rastogi R, Jabeen Z. Integrating literature with technology and use of digital tools: impact on learning outcomes. *World Journal of English Language*. 2023;13(1).
[4] Gobert MT. Transformation in English language education in the UAE. In: Gallagher K, editor. *Education in the United Arab Emirates: innovation and transformation*. Singapore: Springer; 2019. p.113-126.
[5] Ministry of Education (UAE). MOE strategic direction 2023–2026 [Internet]. 2023 [cited 2024 Nov 5]. Available from: https://www.moe.gov.ae/En/AboutTheMinistry/pages/visionmission.aspx
[6] UNESCO. United Arab Emirates: technology education profiles [Internet]. Global Education Monitoring Report; 2023 [cited 2024 Nov 5]. Available from: https://education-profiles.org/northern-africa-and-western-asia/united-arab-emirates/~technology
[7] Christ T, Arya P, Liu Y. Technology integration in literacy lessons: challenges and successes. *Literacy Research and Instruction*. 2019;58(1):49-66.
[8] Farhat N. The impact of technology on teaching and learning in high schools in the United Arab Emirates [doctoral dissertation]. Leicester: University of Leicester; 2009.
[9] Ismail SAA, Almekhlafi AG, Al-Mekhlafy MH. Teachers' perceptions of the use of technology in teaching languages in United Arab Emirates schools. *International Journal for Research in Education*. 2010;27(1):37-56.
[10] Ibrahim AKA. The effect of using technology and blended learning on students at private international schools in the UAE: in classrooms and beyond [master's thesis]. Dubai: The British University in Dubai; 2019.
[11] Clarke SA. The adoption and use of technology by teachers in the United Arab Emirates [doctoral dissertation]. Minneapolis: Walden University; 2020.
[12] Burrows AJ. Technology integration of elementary school teachers at private international schools in Dubai, UAE: barriers, self-efficacy, and the relevancy of the Community of Inquiry framework [doctoral dissertation]. Baltimore: Johns Hopkins University; 2023.

[13] Dweedar L. The digital transformation in teaching methods as the new normal in Abu Dhabi private schools [master's thesis]. Dubai: The British University in Dubai; 2022.
[14] Parkman S, Litz D, Gromik N. Examining pre-service teachers' acceptance of technology-rich learning environments: a UAE case study. *Education and Information Technologies*. 2018;23:1253-1275.
[15] Iran K, Mohammed H. A study on educational technology in Dubai: challenges and suggested solutions [doctoral dissertation]. Dubai: The British University in Dubai; 2011.
[16] Koller V, Harvey S, Magnotta M. *Technology-based learning strategies*. Washington (DC): Social Policy Research Associates Inc; 2006. p.1-13.
[17] Mishra P, Koehler MJ. Technological pedagogical content knowledge: a framework for teacher knowledge. *Teachers College Record*. 2006;108(6):1017-1054.
[18] Mayer RE. The past, present, and future of the cognitive theory of multimedia learning. *Educational Psychology Review*. 2024;36(1):8.
[19] Paivio A, Clark JM. Dual coding theory and education. In: *Pathways to literacy achievement for high poverty children*. 2006. p.149-210.
[20] Subaidi bin Abdul Samat M, Aziz AA. The effectiveness of multimedia learning in enhancing reading comprehension among indigenous pupils. *Arab World English Journal*. 2020;11.
[21] Takacs ZK, Swart EK, Bus AG. Benefits and pitfalls of multimedia and interactive features in technology-enhanced storybooks: a meta-analysis. *Review of Educational Research*. 2015;85(4):698-739.
[22] Kholis A, Azmi U. A need analysis on developing English interactive multimodal e-book oriented to 21st century skills. *Elsya: Journal of English Language Studies*. 2023;5(1):85-106.
[23] Ertmer PA, Ottenbreit-Leftwich AT, Sadik O, Sendurur E, Sendurur P. Teacher beliefs and technology integration practices: a critical relationship. *Computers & Education*. 2012;59(2):423-435.
[24] Almekhlafi AG, Almeqdadi FA. Teachers' perceptions of technology integration in the United Arab Emirates school classrooms. *Journal of Educational Technology & Society*. 2010;13(1):165-175.
[25] Pragasam JA, Sulaima NA. Integrating technology in ESL reading classroom: accounting pupils' perspectives. *Arab World English Journal*. 2023;Special Issue on Communication and Language in Virtual Spaces:324-342. doi:10.24093/awej/comm1.23.
[26] Lee CJG. Reconsidering constructivism in qualitative research. *Educational Philosophy and Theory*. 2012;44(4):403-412.
[27] Creswell JW, Shope R, Plano Clark VL, Green DO. How interpretive qualitative research extends mixed methods research. *Research in the Schools*. 2006;13(1):1-11.
[28] Braun V, Clarke V. Using thematic analysis in psychology. *Qualitative Research in Psychology*. 2006;3(2):77-101.
[29] Altun M, Ahmad HK. The use of technology in English language teaching: a literature review. *International Journal of Social Sciences & Educational Studies*. 2021;8(1):226-232.
[30] Bizami NA, Tasir Z, Kew SN. Innovative pedagogical principles and technological tools capabilities for immersive blended learning: a systematic literature review. *Education and Information Technologies*. 2023;28(2):1373-1425.
[31] Carloni G. Digitally-enhanced practices and open pedagogy in English-taught programs: flexible learning for local and global settings in higher education. In: Berti M, Guth S, Helm F, editors. *Telecollaboration and virtual exchange across disciplines*. London: Bloomsbury Academic; 2020. p.187-204.
[32] Kolobe L, Mihai MA. The integration of technology in supporting progressed learners in English first additional language comprehension. *Perspectives in Education*. 2021;39(2):303-323.
[33] Argawati NO, Suryani L. Digital-based instruction: chances and challenges in English language teaching context. *International Journal of Evaluation and Research in Education*. 2020;9(4):1138-1144.
[34] Bui TH. English teachers' integration of digital technologies in the classroom. *International Journal of Educational Research Open*. 2022; 3: 100204.