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Barriers to Implement ICT By Primary School Teachers in Private Schools Based in Muscat (Oman)

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ABSTRACT

Background: The development of technology in recent years has changed the ways humans used to live. Technology is undoubtedly contributing to enhancing the quality of lives of individuals, whereas Education is no exemption from it, as technology is also contributing to enhancing the quality of Education. The utilization of technology in Education increased during COVID-19, when pupils were taking their education through different electronic mediums. Therefore, the aim of this study was to investigate the barriers to implementing ICT by primary school teachers in private schools in Muscat, Oman. **Methods:** The five-scale Likert scale questionnaire was used as a data collection tool to collect the data from 200 recruited participants, and the collected data was analyzed using SPSS, and descriptive statistics were used for interpretation of the data. **Results:** The findings underline different factors like the absence of assets, lack of preparation, and protection from change that obstruct the viable execution of ICT. The meaning of this review lies in giving bits of knowledge about the difficulties faced by primary teachers in private schools in Muscat, consequently adding to the current writing on ICT reception in the training area. **Conclusion:** To increase ICT adoption, the study's conclusions emphasize the need for enhanced training programs. This study's future repercussions include influencing policy decisions and directing the creation of specific interventions to encourage successful ICT implementation in private schools.

Keywords: Diffusion of Innovation Theory; Social Learning Theory; Technology Acceptance Model; Information Communication Technology

1. Background

There is no doubt how much technology has changed in recent years. The standard of human life has dramatically improved, and what seemed impossible has become feasible. Each element of our lives has been influenced by technology. This is not unique to the sphere of Education, which has also been impacted by the enchanted nature of technology. Technology-based tools must be used in educational

procedures to meet this expanding need (Zoysa & Mohammed & Abeygunawardane, 2023; Ratna *et al*., 2023; Anmary & Mohammed, 2022). In addition to this obligation, the COVID-19 outbreak, which started spreading throughout the world in late 2019, has disrupted regular educational activities and made the use of electronic tools for academic purposes a critical need compared to a matter of preference. Due to the pandemic, several nations were forced to reconsider their educational policies. This led to the creation of distance education models and an unprecedented amount of technology usage. Various researchers have investigated the challenges and the factors affecting the student's satisfaction (Jayampathy, Mohammed & Anmary, 2023; Mohammed *et al*., 2022; Bharwani & Mohammed, 2023). For example, Ertmer, Ottenbreit-Leftwich & Tondeur (2014) suggests a two-level framework to emphasize the difficulties experienced in this process. The primary level is made up of internal barriers. These barriers include, for instance, teachers' unfavourable attitudes, low self-confidence, adverse assessments of technology use, current learning-teaching practices, instructional practices, innovations, and modifications. Hechter and Vermette (2013) indicated that the main obstacles to instructors integrating technology are a lack of funding and support, time, materials, training opportunities, and capabilities. Teachers' use of technology, as demonstrated by Nikolopoulou and Gialamas (2015), is constrained by a few issues, including inadequate funding, a scarcity of instructional upkeep, poor availability of managerial backing, a lack of adequate training, a deficiency of gear, and a lack of accessibility to that equipment.

The study observed that a shortage of ongoing training, equipment, technological plans, appropriate software, and labs for computers are some of the obstacles mentioned by instructors, aspiring educators, and professors (Goktas, Yildirim, & Yildirim, 2009). (Aslan and Zhu, 2015) insist that many teachers desire to incorporate technical advancements as a part of their lecture hall instruction. This idea is also emphasized by (Kimmons & Hall, 2016), but many are deficient in having the necessary skills. This is because many teachers believe that establishing technology is an advantage to achieving the objectives set out, as reported by (Wong, 2015) and (Miranda & Russell, 2012). Numerous studies have been conducted to figure out the obstacles to ICT use in schoolroom instruction. ICT continues to be utilised selectively in classroom education, according to (Leteane & Moakofhi, 2012), who intended to understand what educators at public elementary schools in Botswana thought about its utilization.

2. Methods

2.1 Literature Review

Technological and practical aspects have an impact on the usage of ICT in learning (Das, 2019). Understanding educators' motivations, outlooks, and thoughts about educational technology and instruction is essential since education involving technology is a complex subject. The barriers to integrating ICT into instruction are the focus of ICT usage.

2.1.1 ICT Challenges

The importance of researching the obstacles elementary teachers in Muscat, Oman's private schools, encounter while attempting to integrate ICT is substantial on many levels. Initially, it can help improve learning by discovering the barriers to effective classroom technology use, allowing for the creation of specific strategies to raise educational standards. Furthermore, it can make it easier to create efficient professional development plans that meet instructors' needs for enhancing their digital competence. Subsequently, by educating learners about the changing needs of the modern workforce and encouraging investments in educational institutions.

2.1.2 Theoretical and Analytical Framework

The TAM (Technology Acceptance Model), the DOI (Diffusion of Innovation) theory, and the SLT (Social Learning Theory) all laid the foundation for the theoretical framework that underlies the current study field. The elements that affect teachers' adoption and use of technology in elementary schools can be explained using TAM. The DOI can be used to describe whether technology adoption happens in an educational setting as well as the elements that influence it. SLT can be used to clarify how teachers' connections to other educators, individuals, and the broader public impact their ideas, attitudes, and behaviours about technology. The adopted theoretical perspectives served as the framework for the analytical process.

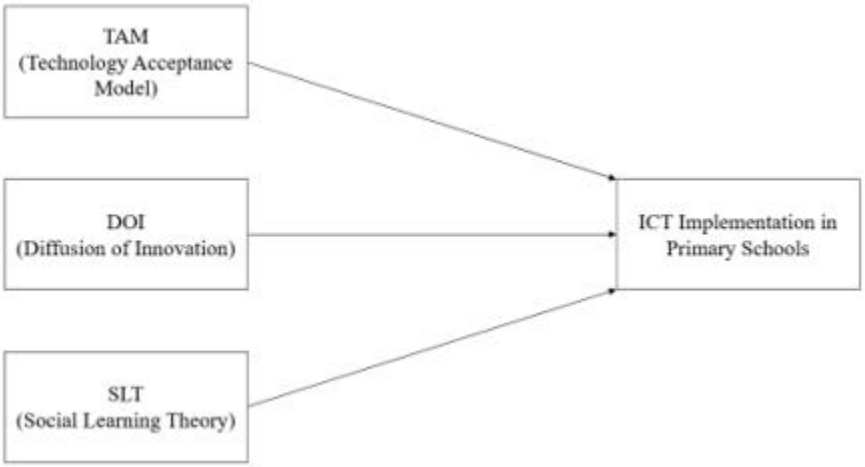

Figure 1: Theoretical Conceptual Model
(Own Illustration)

2.2 Research Methods

2.2.1 Research Design

To better understand the barriers to ICT adoption in private schools, this research article examines how teachers use ICT in professional settings and whether they believe in it. The information has been gathered and analyzed using quantitative methodology. The research onion developed by Saunders is being used as a blueprint for designing a comprehensive and thorough research procedure. The obstacles that prevent private schools in Muscat from adopting ICT might be investigated with the use of a survey method. Following the selection of the schools by purposeful sampling, those participating and the schools themselves were chosen using a process of random sampling.

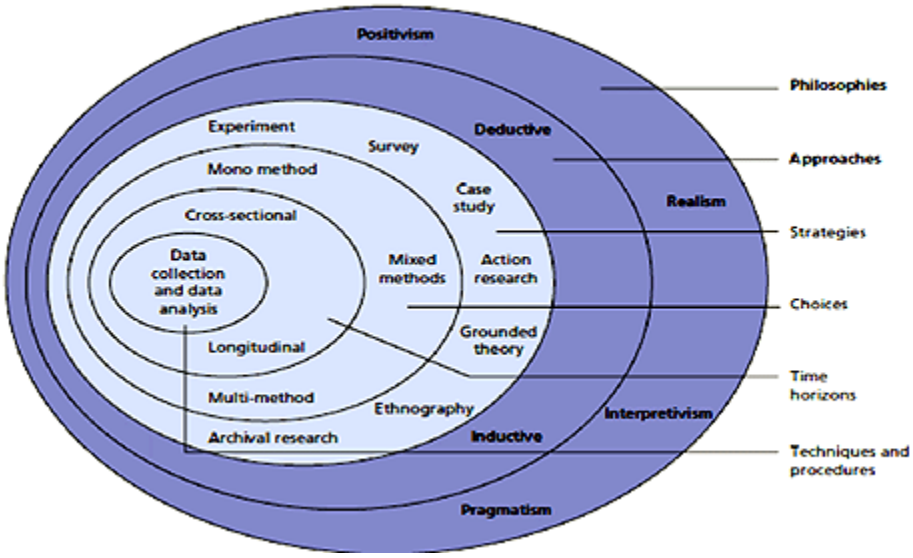

Figure 2: Saunders Research Onion
Source: (Bauer, 2017)

Table 1 Current Study Research Methodology

Research Philosophy	Positivism
Research Approach	Deductive
Research Strategy	Survey-Questionnaire
Research Choice	Mono Method (Quantitative)
Time Horizon	Cross-Sectional
Data Analysis Technique/Procedure	SPSS

Source: (Own Illustration)

2.2.2 Sampling

The private schools served as the sample, and the research participants were mainly teachers, head teachers, and/or IT staff. There were 200 people from the entire population to sample. Schools, with a 95% confidence level sample size and a 5% margin of error. The non-probability sampling technique was applied so that every individual had an equal opportunity to respond to questionnaires.

2.2.3 Instrument and Procedure of Data Collection

The research used questionnaires with structured questions, and the participants were given copies of the questionnaires to fill out and send back to the researchers. There was room for inquiry about the individual's degree of Education, as well as their ICT habits, beliefs, and present use of ICT. The study also inquired about beliefs or convictions that stand in the way of an efficient implementation of ICT in educational settings. The poll employed a Likert scale with five points, with one representing "Strongly Agree, two representing Agree, three representing Neutral, four representing Disagree, and five representing Strongly Disagree". There is space for a total of sixty surveys to be handed out. The Statistics Package for the Social Sciences (SPSS) is a programme that was used to do an analysis of the survey data. The percentages were used in the description of the research to indicate the levels of associated ICT proficiency as well as the hurdles that prevented the adoption of ICT in schools.

2.2.4 Research Philosophy

The type of data being collected, and the research question being asked should influence the research philosophy that is selected. Positivism, interpretivism, pragmatism, and critical realism are a few prevalent research philosophies (Jennifer & Harris, 2016). In the current study, the positivism philosophy is used, and it was selected by the researcher. A research philosophy known as positivism holds that knowledge can be acquired through the scientific method and that the world is made up of observable, quantifiable facts (Mogwe & Balotlegi, 2020). Moreover, positivism could be a helpful research philosophy in the context of the research question.

2.2.5 Research Approach

Any type of research study can use one of three research approaches: inductive, abductive, or deductive (Mehmet, 2021). Deductive research is the most appropriate for this research study because it begins with data collection based on established theories (Almalki & Williams, 2012). In the current study, the researcher wants to know what obstacles primary teachers in private schools in Muscat, Oman, face when attempting to implement ICT. The researcher decided to conduct this study using a deductive approach.

3. Results

3.1 Quantitative Data

3.1.1 Reliability Test for Study Variables

Table 2: Reliability Test for ICT

Reliability Statistics	
Cronbach's Alpha	N of Items
0.930	8

Source: (Own Illustration)

According to the data shown in Table 2, the Cronbach alpha value for information and communications technology is 0.930, and the value for teachers in primary schools is 0.775, both of which are more than 5. This demonstrates that the data that was obtained on ICT may be trusted.

3.1.2 Demographics Variables

Table 3: Age Frequency of Research Participants

Age					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	25-30	43	21.50	21.5	21.50
	31-35	35	17.50	17.5	39.00
	36-40	78	39.00	39.0	78.00
	41-45	44	22.00	22.00	100.00
	Total	200	100.00	100.00	

Source: (Own Illustration)

The ages of the individuals who took part in the research are shown in Table 3, which can be seen above. The ages of the participants vary from 25 to 30, 31 to 35, 36 to 40, and 41 to 45, respectively. According

to what has been learned from the data, participants who are between the ages of 36 and 40 have an elevated incidence and proportion of (78) 39.0% in comparison to those in other age groups. In addition, those between the ages of 41 and 45 have a percentage and rate of 44%, which is higher than those between the ages of 25 and 30 (43%, 21.5%) and 31 and 35 (36%, 17.5%).

3.1.2.2 Education

Table 4: Education of Research Participants

Education					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	University Graduate	51	25.50	25.50	25.50
	Postgraduate	73	36.50	36.50	62.00
	Doctorate	49	24.50	24.50	86.50
	Others	27	13.50	13.50	100.00
	Total	200	100.00	100.00	

Source: (Own Illustration)

It displays the participant's credentials at various levels, such as "university Graduate, Postgraduate, Doctorate, and Others". The participant's qualifications are shown in the Table 4. This table indicates the educational background of the participants who participated in the study. The frequency and proportion of participants who have a post-graduate degree are relatively high, coming in at 73.5% of the total. Second, individuals who have graduated from a college or university and received a degree have a high proportion and frequency, namely 51.25%. Conversely, the participants with a doctorate degree show a (49) 24.5%. The low percentage and frequency of (27) 13.5% have been demonstrated by participants belonging to the other category.

3.1.2.3 Designation

Table 5: Designation of Research Participants

Designation					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Primary Level	90	45.00	45.00	45.00
	Secondary Level	49	24.50	24.50	69.50
	Higher Level	39	19.50	19.50	89.00
	Others	22	11.00	11.00	100.00
	Total	200	100.00	100.00	

Source: (Own Illustration)

The participant designations that are included in the study may be seen in Table 5, which can be seen above. These participant designations include primary, secondary, higher, and other classifications. According to the findings, most of the respondents from the primary level took part in the investigation. This is shown by the high proportion and frequency of their involvement in comparison to the participants

from other categories. In addition, respondents from secondary school have shown a higher frequency and ratio of (49), 24.5%, compared to those at the high level (39), 19.5%.

3.2 Results

Table 6: Descriptive Statistics of Study Variables (N = 200)

Statistics			
		ICT	**PRS**
N	**Valid**	200	200
	Missing	0	0
Mean		29.4700	14.8250
Std. Error of Mean		0.59372	0.28921
Median		33.0000	16.0000
Std. Deviation		8.39652	4.08999
Variance		70.502	16.728
Skewness		-0.760	-0.750
Std. Error of Skewness		0.172	0.172
Kurtosis		-0.783	-0.317
Std. Error of Kurtosis		0.342	0.342
Range		29.00	16.00
Minimum		11.00	4.00
Maximum		40.00	20.00

Source: (Own Illustration)

The descriptive data of the ICT and PRS (Private Schools) were compared in Table 6. All the independent and dependent variables' standard deviations, mean values, kurtosis values, and skewness values are included in the statistical analysis. The mean values of the study variables that are presented in the table came out to be 29.4700 and 14.8250, respectively. In addition, the value of skewness for ICT was -0.760, which was a negative number. The PRS, on the other hand, reveals a skewness score of -0.750. Therefore, based on the skewness value, it is possible to deduce that the data has been distributed in an even manner. On the other hand, the PRS has informed ICT about the high variance value that was found in the data. Both variables, which have values of -0.783 and -0.317, respectively, have shown a negative value of kurtosis, which is indicative of an even distribution of data. In addition, the standard deviation of each of the variables is much lower than the mean value for all three variables.

Table 7: Correlational Analysis of Studied Variables

Correlations			
		ICT	**PRS**
ICT	Pearson Correlation	1	0.856**
	Sig. (2-tailed)		0.000
	N	200	200
PRS	Pearson Correlation	0.856**	1
	Sig. (2-tailed)	0.000	
	N	200	200

Source: (Own Illustration)

Note: ** *Correlation is significant at the 0.01 level (2-tailed). *p < 0.05, **p < 0.01, ***p <0.001*

The results of the correlational examination of the study variables, including ICT and PRS, are shown in Table 7. One of the types of statistics known as correlation analyzes the degree to which two or more variables are connected to one another. On the other hand, the Pearson correlation coefficient is also presented in the table, which states the connection strength and direction between the researched variables. Both aspects of the relationship were described. A value of 0.856 for the Pearson correlation between ICT and PST can be seen in the table, which demonstrates that there is a strong association between the two variables. There is a significant positive relationship between ICT and PRS, as shown by the fact that p is less than 0.05. Conversely, PRS has a 0.856 correlation with ICT, indicating a strong positive relationship between the two. Based on the findings of the correlational study, it seems that ICT has had a significant impact on the private institutions in Muscat.

Table 8: Model Summary of Study Variables

Model Summary									
Model	R		Adjusted R Square	Std. Error of the Estimate	Change Statistics				
		R Square			R Square	F Change	df1	df2	Sig. F Change
1	0.856[a]	0.733	0.732	2.11921	0.733	543.222	1	198	0.000
a: Predictors: (Constant), ICT									

Source: (Own Illustration)

The 8 summarizes a model of regression with a single predictor variable named “ICT.” Several statistical indicators that characterize the model’s ability to predict the outcome variable are included in the table. The correlation between both the outcome and the predictor variables is shown in the “R” column. The 0.856 value for the correlation coefficient between these two variables is indicative of a robust positive relationship between them. To see how well the predictor variable accounts for the variation in the outcome variable, have a look at the “R Square” column. Since the outcome variable varies by 73.3%, the predictor variable has a high R-squared value of 0.733. The R-squared value is adjusted for the number of predictor factors in the “Adjusted R Square” column. The modified R-squared value in this instance is 0.732, which is close to the actual R-squared value. The “Std. Error of the Estimate” column shows the standard error of the residuals, which is a measure of the model’s accuracy in predicting the outcome

variable. In this case, the standard error of the estimate is 2.11921. The "Change Statistics" section shows the results of a hypothesis test that compares the current model to a null model with no predictor variables. The "Sig. F Change" column shows the p-value for the hypothesis test, which is very small (0.000), indicating that the predictor variable significantly improves the model's performance.

Table 9: Testing the Overall Significance of the Regression Model

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2439.644	1	2439.644	543.222	0.000[b]
	Residual	889.231	198	4.491		
	Total	3328.875	199			
a: Dependent Variable: PRS						
b: Predictors: (Constant), ICT						

Source: (Own Illustration)

In Table 9 above, the ANOVA test presented the accuracy of regression equation data. The sig here delivers the P value, which is less than 0.05 and reveals that the regression model predicts the outcome variable significantly.

4. Discussion

4.1 TAM (Technology Acceptance Model)

The TAM (Technology Adoption Model) is a commonly used paradigm in the discipline of IT (Information Technology) that describes the elements that impact people's adoption and usage of technology. According to the model, PU (Perceived Usefulness) and PEOU (Perceived Ease of Use) are the main elements that influence how quickly technology is adopted (Hervilia, Singasatia & Sunandar, 2022) (see Figure 3). Primary teachers in Muscat may be less likely to adopt ICT if they do not see the value of it in these fields. The degree to which a person anticipates that using a particular technology can be simple and uncomplicated is known as perceived ease of use. If primary teachers in Muscat believe ICT is challenging to use, they might be reluctant to adopt it (Siemund, Al-Issa & Leimgruber 2021, Mohammed *et al*., 2022).

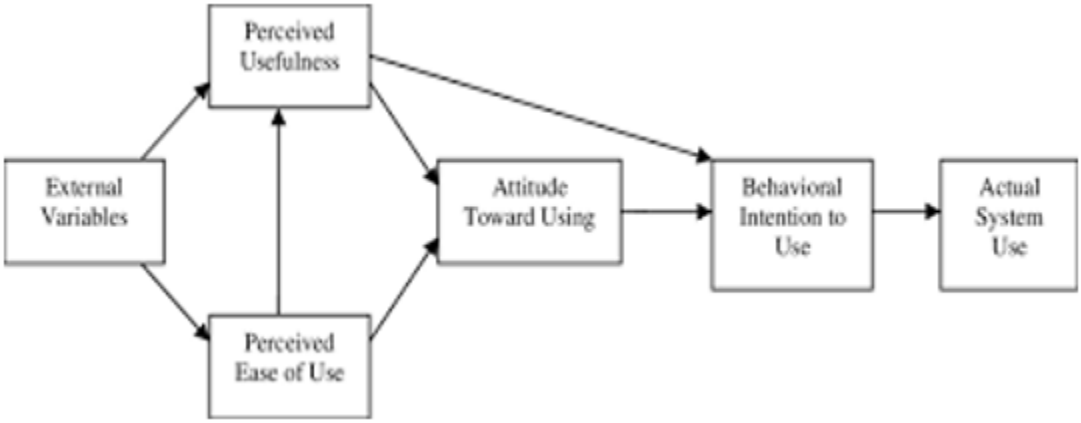

Figure 2 Technology Acceptance Model.
Source: (Hervilia, Singasatia & Sunahurdle, 2022)

4.2 DOI (Diffusion of Innovation) Theory

The DOI (Diffusion of Innovation) is a conceptual framework that describes how new ideas or technical advancements spread and get integrated into a specific social system. Several variables influence the rate at which new technology is adopted, including the characteristics of the innovation, the channels used to spread the inventiveness, the characteristics of the adopters, and the social structure in which the emerging technologies are being incorporated. (Asianoa *et al*., 2022) (see Figure 4). Adoption may also be influenced by the Age, expertise, perspectives, and motivation of people who use technology. Primary teachers, for example, may be hesitant to use ICT if they fear it will increase their workload or jeopardize their ability to perform their tasks. Finally, the social structure in which the invention is employed may impact its acceptance. Primary teachers may find it difficult to use technology if the school culture opposes its use during instruction or if the leadership does not offer the required infrastructure and resources (Al Aghbari, 2019).

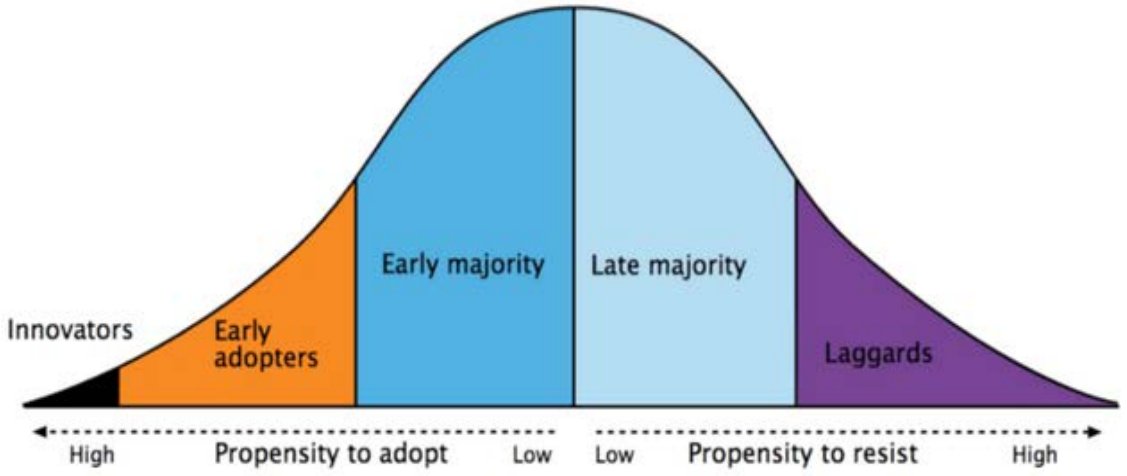

Figure 3: Diffusion of Innovation Theory
Source: (Asianoa et al., 2022)

4.3 SLT (Social Learning Theory)

An explanation of how people learn from their environment, including through observation, imitation, and modelling, is provided by the Social Learning Theory (SLT) (Ghadyani, Tahririan & Afzali, 2020). The SLT can be a helpful framework for comprehending the factors (attention, retention, motivation) that influence the adoption and use of technology (Uwerhiavwe, (2023) (see Figure 5) regarding the challenges faced by primary teachers attempting to implement ICT in private schools located in Muscat, Oman. The SLT contends that people learn by taking note of other people's behaviour, copying it, and experiencing the results of their actions. The adoption and use of technology by primary teachers in Muscat may be influenced by their colleagues' actions and attitudes as well as by the results of implementing ICT in the classroom. For example, if a few teachers in a school adopt ICT early and use it effectively in their instruction, it might inspire other teachers to do the same. Similarly, encouraging other teachers to use ICT in the classroom is possible if ICT teachers are recognized or applauded for their efforts (Balliammanda, 2021).

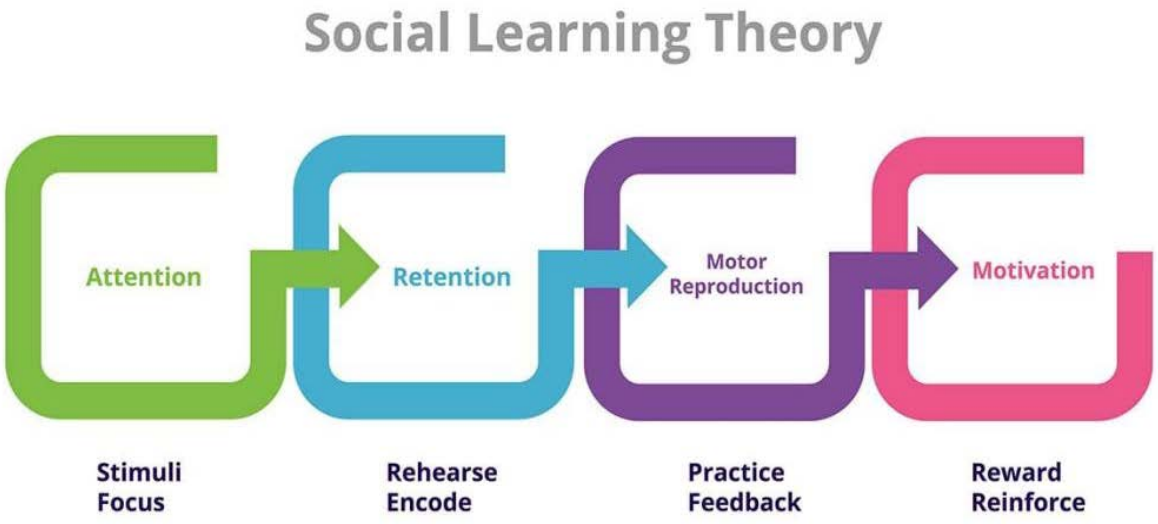

Figure 4: Social Learning Theory
Source: (Uwerhiavwe,2023)

4.4 Empirical Aspect

4.4.1 The ICT Adoption Situation and Barriers in Oman Private Schools

During their research for the study, Al-Mekhlafi Al-Mashkoor (2018) spoke with 1,120 Omani teachers working in a variety of settings, including elementary schools. Most teachers polled were aware of the potential advantages of incorporating ICT into the classroom, which include enhanced levels of student engagement and improved learning outcomes. However, teachers reported coming up against a variety of obstacles while trying to include technology in their classes. All these problems may be traced back to a lack of technological advancement, poor knowledge, and unsatisfactory levels of technical assistance. In an identical manner, Al- Hunaiyyan (2016) surveyed fifty Omani faculty members from various educational levels, including primary schools, and discovered that most of them were optimistic about incorporating ICT into their teaching; however, they continued to face obstacles such as a lack of resources, unclear regulations, and outdated equipment. These findings are consistent with those of the previous study. In another research, (Kilani, *et al*., 2019) surveyed 108 Omani educators working in a variety of contexts, including elementary schools, and found that the great majority of those questioned thought that ICT had the potential to raise educational standards, even though they were confronted with several challenges. According to the findings of the research by (Al-Rahmi *et al*., 2020), educators working in elementary schools in Oman's private schools face the same challenges in terms of ICT adoption and integration as their peers working in different educational environments and grade levels.

It may be possible to increase the acceptability of ICT in Oman's primary schools by lowering these hurdles. Some of these barriers include providing access to technology, adequate training, and technical assistance. Al-Shehri and Al-Khalidi (2017) conducted a study on the e-learning program of the Omani Ministry of Education and the deployment of ICT in private schools throughout the country of Oman. The poll of 174 private school educators found that even though they had access to ICT tools and technology, they still had trouble using the online educational system. Al-Ghaithi and Behforouz (2023) investigated the factors that impact ICT adoption in Omani schools, particularly private educational institutions. The study, involving 250 instructors from various levels of school, revealed that sentiments amongst educators assessed ICT benefit, as well as perceived ICT usability, were the most critical factors influencing ICT adoption. The study also found that if teachers were provided more help and instruction, they were more likely to adopt and use ICT effectively. These studies emphasize the need for teachers to receive appropriate training and assistance to accept and use ICT properly. It may be feasible to promote the effective implementation and utilization of ICT in Oman's primary schools, especially private schools, by

eliminating the challenges that teachers have while using ICT, such as technical difficulties, a lack of learner participation, and insufficient training. To increase ICT uptake and efficient usage, instructors' attitudes and impressions of the technology's practicality and usability may be critical (Al-Senaidi, Lin & Poirot, 2009).

4.4.2 Overcoming ICT Adoption Challenges in Private Schools: Approaches and Potential Benefits

Following are some suggestions for eliminating some of the hurdles to implementing information and communication technologies in private schools: Investment in ICT infrastructure in educational institutions, such as supplying whiteboards that are interactive, tablets, and workstations for teachers, may increase access to technology. Encourage a culture of innovation and experimentation: Schools can establish an atmosphere that motivates teachers to try out new tools and methods of instruction. This can be done by praising and rewarding creative teaching methods and giving teachers a chance to share their insights with their peers. Schools can consider workload and scheduling issues that may affect teachers' capacity to integrate ICT into their lessons successfully. Incorporate technology-based projects and activities that give students the opportunity to develop their digital literacy and take control of their learning to increase student involvement in the learning process.

4.4.3 Form Partnerships with Tech Companies and Other Organizations: Schools can work with companies in the technology sector and other organizations to share best practices, gain access to new tools and resources, and promote innovation in teaching and learning.

4.4.4 Adequate Training: Teachers who have received adequate training are more likely to feel competent and confident when utilizing technology, creating more effective and enjoyable learning environments (Das, 2019). This increases teachers' effectiveness and satisfaction. ICT tools enhance student and teacher collaboration and communication both inside and outside of the classroom.

4.4.5 Wider Access to Resources: Students who use technology may have access to a broader range of educational resources, such as interactive simulations, online libraries, and learning games.

4.4.6 More Prepared Workforce: Students can acquire the digital literacy skills required to succeed in the modern workforce by integrating ICT into teaching and learning strategies (Anmary & Mohammed, 2022; Ratna *et al*., 2023). Heightened competition among private schools can become more competitive in the education market, entice more students, and enhance their reputation by successfully integrating ICT into their teaching and learning practices. Thus, removing obstacles to ICT adoption in private schools in Oman can result in a more interesting, successful, and fulfilling learning experience for students and teachers, as well as give them the abilities and knowledge required for success in the twenty-first century.

5. Conclusion

After accomplishing research regarding the topic of barriers to implement ICT by the primary school teachers in private schools based in Muscat, Oman, some significant conclusions, and recommendations may be reached. It has been found from the current research findings that primary school teachers working in private schools in Muscat face several barriers that prohibit them from adequately integrating ICT, including limited access to technology, insufficient training, and insufficient assistance from the school administration.

The following recommendations have been made concerning the subject matter from the current study findings. It has been recommended to Muscat primary schools that they should be providing teachers with access to sufficient technology and tools, such as laptops, tablets, and dependable internet connections.

- Moreover, to keep instructors current with the most recent technological developments, schools should engage in continual professional growth.

- School administration should foster an environment that is favorable to ICT integration, particularly giving teachers the resources, time, and equipment, they require to plan and prepare their ICT- enabled classes.

- Educators should be supported in forming good beliefs and views about ICT, with an emphasis on the advantages it may offer to students as well as teachers.

These recommendations can help primary teachers in private schools in Muscat, Oman, overcome the obstacles to utilizing ICT and provide their students with high-quality, efficient, and engaging instruction. Moreover, from the present study limitations, the suggestions have been given to future researchers for further study about obstacles to ICT implementation by primary teachers in private schools located in Muscat, Oman:

- Develop an expanded investigation with a more varied sample of elementary teachers in Oman's private schools.

- Examine how cultural and social aspects affect primary school teachers views on using ICT in the classroom.

- Examine, whether instructors' desire to adopt ICT is influenced by their gender, Age, or socioeconomic level.

- Investigate the effectiveness of different training and professional development programs aimed at supporting primary teachers' integration of ICT into their teaching practices.

- Examine how ICT integration in Oman's primary schools is facilitated by school management and leadership.

6. Declarations

6.1 Ethics Approval and Consent to Participate: When collecting quantitative data, there are several ethical considerations that the current study researchers consider. Informed consent from participants before collecting any data is obtained from the participants. Informed consent involves informing participants about the purpose of the study, the nature of the data to be collected, and any potential risks or benefits associated with participating in the study. Besides, it has been ensured by the researchers that the private data of the included participants are saved as confidential data and that their privacy is protected. This includes protecting participants identities and ensuring that their data is kept secure and not shared with unauthorized individuals.

6.2 Conflict of interest: Not applicable.

6.3 Acknowledgement: Gratitude to supervisors for the immense support extended by her throughout the preparation of this manuscript.

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