Teachers' Perspectives on Using Technology to Promote Literacy in Children Between 4 – 6 Years in Saudi Arabia State Schools in Al-Baha

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ABSTRACT:

The study aimed to explore the perspectives of preschool teachers on the use of educational applications to teach reading and writing skills to pre-school children. The study was conducted on 10 pre-school teachers working in 6 schools in Al-Baha City, Saudi Arabia. The results showed teachers' positive opinions towards technology and educational applications in teaching reading and writing skills to pre-school children. Also, it presents different teachers' methods of integrating technology with teaching children reading and writing skills. Most teachers use educational applications on tablets such as Adnan, Lamsa and YouTube to teach reading and writing skills, while some teachers use computer software to teach writing like Word, Painter and Notes. Few of teachers preferred to use traditional methods more than technological methods in teaching writing, despite their support for the importance of technology in educating children now. Teachers reported using them during the daily program periods, especially in the main period and the last meeting individually and collaboratively. Also, teachers determine their uses of technology according to the educational activities whether for evaluation of children's progress or teaching writing and reading skills. However, teachers expressed some obstacles that prevent them from using digital technology effectively in teaching children the skills of reading and writing, such as lack of professional and financial support and equipment. Therefore, this study suggested that the Ministry of Education intensify should make an efforts to support pre-schools by providing training courses for teachers about using technology with children, providing technological devices and continuous

maintenance that support teachers during their academic practices in teaching children reading and writing skills.

المستخلص:

هدفت الدراسة إلى استكشاف وجهات نظر معلمي مرحلة ما قبل المدرسة حول استخدام التطبيقات التعليمية لتعليم مهارات القراءة والكتابة لأطفال ما قبل المدرسة. أجريت الدراسة على ١٠ معلمات لمرحلة ما قبل المدرسة يعملون في ٦ مدارس في مدينة الباحة بالمملكة العربية السعودية. أظهرت النتائج آراء المعلمين الإيجابية تجاه التكنولوجيا والتطبيقات التعليمية في تعليم مهارات القراءة والكتابة للأطفال في سن ما قبل المدرسة. كما عرضت أساليب المعلمين المختلفة لدمج التكنولوجيا مع تعليم الأطفال مهارات القراءة والكتابة. يستخدم معظم المعلمين تطبيقات تعليمية على الأجهزة اللوحية مثل عدنان ولينا ويوتيوب لتعليم مهارات القراءة والكتابة ، بينما يستخدم بعض المعلمين برامج الكمبيوتر لتعليم الكتابة مثل الرسام والمفكرة و قلة من المدرسين فضلوا استخدام الأساليب التقليدية أكثر من الأساليب التكنولوجية في تدريس الكتابة لأسباب مادية، على الرغم من دعمهم لأهمية التكنولوجيا في تعليم الأطفال الآن. أبلغ المعلمون عن استخدامها خلال فترات البرنامج اليومية ، خاصة في الفترة الرئيسية والاجتماع الأخير بشكل فردي وتعاوني. كما يحدد المعلمون استخداماتهم للتكنولوجيا وفقًا للأنشطة التعليمية سواء لتقييم تقدم الأطفال أو لتعليم مهارات الكتابة والقراءة. لكن المعلمين عبروا عن بعض المعوقات التي تمنعهم من استخدام التكنولوجيا الرقمية بشكل فعال في تعليم الأطفال مهارات القراءة والكتابة ، مثل الافتقار إلى الدعم المهني والمالي والتجهيزات. لذلك اقترحت هذه الدراسة أن تكثف وزارة التربية والتعليم جهودها لدعم رياض الأطفال من خلال توفير دورات تدريبية للمعلمين حول استخدام التكنولوجيا مع الأطفال ، وتوفير الأجهزة التكنولوجية والصيانة المستمرة التي تدعم المعلمين خلال ممارساتهم الأكاديمية في تعليم الأطفال القراءة و مهارات الكتابة.

INTRODUCTION:
1.1 Introduction:

As a result of digital technology developments, technology has contributed to the development of many educational digital tools such as computers, tablets and the Internet, which could help teachers to improve the educational process. Therefore, with these technological developments, it is necessary to know the extent of pre-school teachers' use of digital technology and to determine the pre-school teachers' views about using educational applications in education with young children.

The title of this study is: Teachers' perspectives on using technology to promote literacy in children between 4 – 6 years in Saudi Arabia state schools in Al-Baha.

There are four reasons that motivated me to choose this topic for my dissertation. Firstly, I have worked as a pre-school teacher during my internship. So, I experienced many challenges of teaching young children. Additionally, during that time, I observed that children are more attracted to use technology in classrooms. Therefore, I decided to investigate the factors influencing the use of technology in education from teachers' perspectives, which may help in developing strategies to provide educational content to preschool children via digital technology.

Secondly, there is not a lot of research related to teachers' opinions on integrating purposeful digital technology with education. Fallon (2014) states that there is a lack of studies that talk about using apps in educational process. Despite the widespread use of technology in education in the United States of America, its use is new in Saudi Arabia (LaBelle et al. 2016). Therefore, it would be logical to conduct some research to promote the educational process with digital applications.

Thirdly, given the increasing use of technology in education, it is important to work to increase awareness of digital technology and its appropriate tools that would be used with preschool

children. As a result of the increase in the number of educational applications produced, the use of these applications has risen, but there is no clear vision about the effective use of these applications for education (Howard et al., 2018). Fourthly, Studies would provide significant information about children's reactions and adaption to new educational technologies. Thus, this will allow the industry of applications developments to deliver more efficient and effective technology applications. This dissertation can help to make suggestions for enriching the concept of education with technology and enhancing methods of using it in kingdom of Saudi Arabia preschools.

This dissertation is structured as follows: In the first chapter, I briefly describe the importance of using technological applications in education for pre-school children and describe some applications that facilitate the learning process. In the second chapter, I provide a literature review about the topic and how it has been discussed so far and particularly I will explain previous opinions about the use of technological applications for teaching children, teachers' usage of technological applications in classrooms, and the teachers' efficiency and capabilities in using technology. In the third chapter, I will research design including the methodology of my dissertation. Fourthly, I will outline the study's finding supported with some extracts from the interviews' transcripts. Fifthly, the finding will be discussed with more details with answering the research questions' that the dissertation is based on. Finally, the sixth chapter will conclude the dissertation with considering the strengths and the limitations for this research.

1.2 The definition of technology in education

Technology has developed many areas of life as a result of our increase use of it in our daily life. There are several definitions of technology provided by social scientists. Solomon (2000) describes technology as the systematic use of sources of

structured knowledge. In addition, technology has contributed to the improvement of many educational opportunities for learners, as what called informal learning and distance learning has appeared due to technology improvements. Luppicini (2005) defines education technology as an area that focuses on designing, developing, using and evaluating resources for learning processes.

Despite the widespread use of technology devices and applications, understanding the meaning of applications will help in creating perceptions for users about the purposes of using applications in more useful ways. Cherner et al. (2014) describe applications as small computer programs that can be downloaded to electronic devices such as smartphones and tablets.

1.3 The impacts of using technology apps in education with children

Nasr (2018) notes that digital technology has an effective impact on learning because it affects the way children learn. The use of technology develops the learning process clearly, as it affects the learning of young children more than the use of traditional methods of learning, As Oakley et al. (2018) confirm that many opportunities for innovation and learning for young children are provided by digital devices. Also, Blackburn (2018) points to the role of positive technology in academic experiences, especially with who have dyslexia. As technology helps to facilitate learning with technological tools such as computers without affecting other types of learning. Additionally, Papadakis et al. (2017) state that using smart devices and educational applications might have a major impact on developing children's experiences. Additionally, young children need an appropriate environment that develops their thinking abilities and skills. Children's needs demonstrate the importance of kindergarten in providing digital tools to enhance their learning (Nasr, 2018).

Furthermore, Lazar (2015) emphasizes the educational value of applications that help to gain knowledge and that there is an interaction between them and the user to lead to positive educational experiences. also technology helps students learn educational materials independently and control the way they learn such as the repetition of ambiguous content. Additionlly, using technology in the classroom help students to work in groups, or individually, and enhance some skills such as solving problems, accessing educational content anytime and anywhere besides give learners opportunities to learn in formal and informal environments (Mehdipour and Zerehkafi, 2013). Also, playing in a digital context can develop learning social skills and problem-solving for children as well as using multimodal digital texts could develop oral skills and storytelling with appropriate vocabulary (Oakley et al. 2018).

However, Lanna and Oró (2016) stresses that some applications designed for children contain obstacles that prevent interaction with the content. Papadakis and Kalogiannakis (2017) argue that despite the production of many educational applications, but most of them lack to the educational value.

research questions

this research attempts to answer the following questions:

1. What are pre-school teachers' perspectives on using technological devices in their classrooms?
2. What are pre-school teachers' perspectives on using educational apps to promote literacy in young children?
3. What have pre-school teachers found most effective in using technology to promote literacy in young children?

Literature review:

2.1 introduction :

The early years of a child's life are important for their growth and development, and pre-school teachers have a positive impact on children's learning and development. Pianta and Stuhlman

(2004) stresses that pre-school teachers play an important role in developing academic achievement and social relations. Additionally, the use of technological devices has affected many areas of life such as education. Teachers' use of educational applications in classes could have significant impacts for enhancing the educational progress.

2.2 Teachers training and experiences:

Fenty and Anderson (2014) state that for effective use of technology, teachers should have technological skills and abilities that support children's use of technology in the classroom. Despite the efforts that educational developments contribute to learning that relates to student-centred learning, many teachers use technology in traditional direct teaching methods. Fenty and Anderson (2014) argue that the majority of teachers not knowing about the use of technology in the educational process is a challenge, despite knowing the possible benefits of educating children with technology. To some extent, pre-school teachers have knowledge about how to develop technological skills and integrate them into educational processes, but they have different opinions about the role of technology in educating young children.

White (2015) emphasizes the need for teachers to have experience about strategies for integrating technology into the educational process effectively. Meanwhile, teachers are unable to integrate digital technology into education efficiently, although these are available in schools (Hutchison and Reinking, 2011). Furthermore, Lancaster and Bain (2019) stress that the technological experiences teachers acquire in universities help them to adopt educational technology strategies.

However, Mohebi and David (2019) stress the importance of encouraging teachers to integrate technology in education by offering some job incentives, such as giving them positive assessments and discount on technology devices and increasing

teachers' salaries. Hancock (1999) states that having a sufficient understanding of the use of technology by teachers will make it easier for them to integrate into the curriculum. When teachers see the role of technology in the education process and its development, they become motivated to continue using it in the learning process (Blackburn, 2018). Meanwhile, Almutairi (2015) points out that as part of the Kingdom of Saudi Arabia's plan to provide high-quality education to students, the SA is working to develop the capacity of teachers and their professional performance.

2.3 Teachers usage of technology apps:

Regarding the extent to which teachers use technology, A study conducted by Alhumaid (2014) shows that teachers expressed positive views about using technology to teach Arabic language to learners. For instance, Thomas et al. (2013) point out that around 69% of teachers support using mobile phones in the classroom for educational purposes. Boudo et al. (2014) revealed that mobile technology creates a new environment for contacting teachers and learners which support learning literacy skills. Almekhlafi and Almeqdadi (2010) revealed that teachers use technology in different ways in the classroom. O'bannon and Thomas (2014) determine the technological tools that are used for educational and management purposes, like the Internet, applications and calculators. Also, St Hilaire (2019) stresses the importance of technological integration and the purposeful use of technology tools.

Regarding the time for the use of educational applications, most teachers use apps in free play period to interact with young children (White, 2015). Meanwhile, Wood and Ashfield (2008) found that teachers use learners-centred technology for interactive activities. Flewitt, et al. (2015) stress that using technology in education during the learning process could

motivate children to complete literacy activities individually and collaboratively.

2.4 The effectiveness of using technology in children's classrooms:

Learning young children through applications may have long-term effects on improving their skills and abilities (Hirsh-Pasek et al., 2015). Howard et al. (2018) state that children use widely available digital devices for educational purposes. Falloon (2014) revealed that educational content apps have a positive effect on learning. So, pre-school teachers must provide basic skills and information to help young children adapt to the use of technology (rehab, 2016). However, he also points out that there is a lack of research about using apps in classrooms.

Kermani and Aldemir (2015) mention that the application of a new educational plan that uses learning technology could be enhancing teachers' attitudes towards educational technology and promotes the integration of educational experiences for pre-school children.

2.5 Summary

The majority of previous research show that a lot of known about the little use of technology in the educational process by teachers and potential challenge. However, little is known about how teachers deal with technology challenges and how they can enhance children's experiences through applications. Furthermore, through the previous literature, it can be concluded that teachers lack the necessary skills to use and integrate technology while working in kindergartens. In addition, it seems that teachers have positive opinions about learning applications and their benefits in enhancing the reading and writing skills of young children.

For this reason, this study may help to solve this problem and modify applications for children to become more educated than before. Also, it would help teachers to select suitable apps that

have meaningful contents. In addition, it may contribute to showing the challenges that pre-school teachers can face from applying digital technology and using digital applications in the classroom with young children, which may help to adopt new strategies by the ministry and teachers to develop the educational process and make it up to date with current technological developments.

RESEARCH DESIGN:

3.1 Methodology

this research based on the cumulative approach when obtaining the sample size, as it helps in accessing sufficient information on the subject without the need to add more sample (Denscombe, 2014).Polit and Beck (2010) State that a qualitative approach is a suitable method to gain more knowledge about human experiences. Therefore, I used a qualitative approach in this study that allows me to explore the effectiveness of using educational applications in classrooms confirmed by some of the pre-school teachers' real experiences. According to the research questions mentioned in the first chapter, semi-structured interviews were used to collect study data, analyse it and discussed the study's finding. Interview questions are designed to give a broader insight into the topic of the study. It gave a comprehensive overview of whether qualification and the experiences of different teachers have to do with the integration of technology in the educational classes for young children and how they feel support and encouragement of technological integration as mentioned in the second chapter.

3.2 Instruments

The research tools were the interview; semi-structured interviews, and pilot interviews.

3.3 Design and implementation of the semi-structured interviews

The interview design is based on supporting information from the literature, adding the researcher's experience in the field of teaching young children and the program of early childhood education in the KSA.

3.4 The sample

this study conducts with a group of 10 of pre-school teachers from different public schools in Al-Baha city. In addition to conducting a pilot interview with one additional preschool teacher. the voluntary participants were chosen randomly, I have specified a specific area (Al-Baha city) to conduct the study to obtain more accurate results.

3.5 Procedures

After getting ethical approval, I used the email as an official way to communicate with the potential participants. Then, I started to collect the data to explore perceptions and attitudes among pre-school teachers about using educational apps in their work with children. Before conducting the interview, I proceed pilot interviews. Conducting pilot interviews helped me identify the misunderstanding that might result from some questions. For example, in the pilot interviews I found some questions have been misunderstood, so these questions have been changed in order to gain a better understanding. After completing the edits on the interview questions, I conducted the semi-structured interviews for the final study.

Data for the qualitative study were collected between 8th of August 2020 to 15th of August 2020. Firstly, a Doodle link has been sent to the participants who want to involve in this study to choose the appropriate time for conducting semi-structured interviews. Using doodles helps me avoid any problem while interviewing participants and coinciding with the participants' agenda. Also, the timing difference between the KSA and the UK was also taken into consideration. Secondly, I have sent a link to conduct interviews via Zoom with the time of the

interviews via email to the study participants. Participants were able to access the interview meeting after clicking on the link that took them directly to the zoom's meeting. However, some respondents preferred to use WhatsApp to communicate and send files related to recruitment files (PIS and constant form), the zoom link, and Doodle, as they do not use emails to communicate. Also, per interview has taken between 30 minutes to one hour.

3.6 Delimitation of the Research

The boundaries of this research are defined as follows: The research topic discusses the views of 10 preschool teachers about the use of educational learning applications. Also, the research was conducted between June 10 to September 9, 2020. Data was collected between August 8, 2020, to August 15, 2020. Additionally, data was analysed between August 15 and August 20, 2020. Furthermore, the study conducted in different pre-schools in Al-Baha city in order to gain more reliability.

3.7 Data analysis

The data analysis is organized by the tool that was used in performing the research to present the data (Cohen, 2007). In this research, thematic analysis was used to analyze the collected data. All interviews have been transcribed, translated, and coded to conclude main themes. In the thematic analysis, the analysis of content elements is linked to the analysis of repeated codes and the analysis of their meaning. As a result, there will be more accurate during the qualitative analysis. Joffe and Yardley (2004) state that the main themes extract from the primary data of the interview after completing the inductive coding. However, Braun and Clarke (2006) state that the researcher's judgment and interpretations may affect the extraction of the subjects. In addition, I worked to make sure that sufficient details were provided to help explain how the study conclusions and findings

were reached, these details helped to provide evidence on the decision process and the conclusions. (Denscombe, 2014).

The qualitative data will be defined in six stages, beginning with data analysis and ending with data summarization. Those stages can be listed as: selecting data, generating the initial codes, creating themes, reviewing the created themes, identifying the themes, and finally producing the final results (Braun and Clarke, 2006).

3.8 Thematic coding

The interviews were audio-recorded and then transcribed in oral form. The transcriptions for the interviews were analysed thematically according to an open coding approach. Also, I derived the coding themes from the interviews using open coding to provide more details. I translated the interviews from Arabic into English after a copy of the transcript was sent to the interview participants to ensure that there was no misunderstanding of what was previously mentioned in the interviews. After that, I identified emerging topics that reflected teachers' views on the use of educational applications in kindergartens (see Appendix 4 for a version of an interview).

3.9 Summary

This chapter outlines a qualitative methodology for pre-teacher beliefs about the use of literacy applications in the classroom. Also, semi-structured interviews were conducted online via the Zoom app. I have followed every protocol required by the schools and teachers who participated in the study. Additionally, the next chapter will illustrate the results to come up with generalizations that relevant with the research questions.

FINDING:

4.1 Introduction :

The primary aim of conducting this study is to examine teachers' perspectives of using academic applications for educational purposes and to determine the suitable way teachers' use

applications in their classrooms. Meanwhile, the study has assessed teachers' familiarity with using applications and technology in general in their work with children.

4.2 Educational applications and promoting literacy

All the pre-schools teachers revealed that they are using a set of educational applications for promoting literacy that during their work in kindergartens. Those teachers have used the applications for different educational purposes. As some have expressed their use of educational applications to provide educational content to children, while some have used it as a tool to assess children's learning.

"Most of the lesson content ... Also, I do not always use it for letters and numbers. We can use it for general information, such as teach behaviors, such as if we have a presentation, I can teach children how to use the device, sometimes I provide my laptop, to teach how to write in Word" – things word is intended to learn to use digital technology –. (Teacher 1, school 1)

"*It is not entirely a hundred per cent, but it is given for a short time to the children because it does not replace for writing with practice. When the child hold of the device, he cannot write continuously, but if this aspect is taken to teach some concepts to read and repeat some letters on the child's ears, he will understand more when he holds the pen and starts writing".* (Teacher 2, School 2).

"I used the electronic board to write dotted words and also used programs for teaching the correct pronunciation". (Teacher 3, School 1)

In Addition, the majority teachers emphasized that they use educational applications for different purposes and not just one goal, as their use of technology depended on the goal of the lessons, to combine entertainment and learning by use apps games and presenting stories related to the topics of the lessons.

"... To review lessons that have been taken in a more enjoyable way and learn more about educational content and break the boredom and monotony of teaching"(Teacher 6, School 5).

"*It is possible by explaining the lesson using a story or reviewing the lesson using an end to the lesson or teaching the Quran by repetition through applications*" (Teacher 8, School 4).

While most of the teachers used technology collaboratively with the children due to the absence of devices or a large number of children in the classroom in addition to combine the two methods, a minority of teachers used them to teach the children individually.

"Individual teaching for evaluation, but little used because many children are often. So, I use it collaboratively and to display content" (Teacher 3, School 1).

"as groups at the beginning of the teaching letter when learning a new letter, so each child helps his friend... Individual when I want to evaluate them, to evaluate the skill of each child for the sound and shape of the letter and the way it is written" (Teacher 4, School 4).

"I use it often collaboratively because there are no devices available for the number of children in the class. I can show them or give them two iPads that they use to write letters in circulation between them". (Teacher 5, School 3)

"*According to the children needs, I determine the way of using, I choose most of the time to be cooperative*" (Teacher 6, School 5).

Meanwhile, some teachers have expressed their way of combining the traditional physical method with technology.

There is also an educational corner in the workshop section called Reading and Writing, so there will be sanding of the alphabet because it is palpable for the child and worksheets that the child writes to write letters" (Teacher 10, school 6).

However, the minority of the teachers prefer to use the sensory method to teach children, At the same time, some digital technology is being used to teach children writing and reading skills, along with the use of traditional methods of learning.

"*I do not use technology at the beginning of education for a specific thing. I use the sensory method until he becomes aware of what is being learned … Anything sensory, even if a game, will affect children learning. As for technology, my use is limited on using computers and Projector"* (Teacher 4, School 5).

About the method of using technology to enhance literacy skills, YouTube is often used in addition to a group of specialized educational applications to teach literacy skills .

Teacher 2, School 2 expressed her way of using technology *"Through YouTube, projector presentations, educational stories and songs, for example, about study units or a specific topic, and subsequently, they are displayed by the projector."*

"*Mazen and Thalloub, as well as Fawaz and Nora, are uploaded by the ministry to YouTube. Designed by the Ministry of Education, it is educational and purposeful."* (Teacher 6, School 5).

Regarding to common educational applications, by analysing interview data, it seems that the application of Adnan is the most common among teachers, as six of the teachers identified it among the applications that they use frequently to teach reading and writing skills in addition to teaching some of the Holy Quran.

(Teacher 3, School 1), when asked about the apps that teachers recommend using to teach children reading and writing skills, *"Lamsa, Abjad, Fun School, Adnan."*

"*Adnan is an Arabic language teacher, a teacher of teaching letters and words, also my funny letters. Honestly, these apps are great"* (Teacher 5 School 3).

"Applications of letters and numbers are many, but there is the best among them. In addition to that, there are applications of shapes and colours" (Teacher 6, School 5).

"There is a sea of applications, the best of which is the application of the school of fun, education, fun, Siraj cartoon, the first Arabic words" (Teacher 7, School 3).

Also, Teacher 8, School 4 determine some applications that she use as she said, *"Like the Adnan app, the virtual kindergarten, and Lamsa."*.

Furthermore, most of the teachers expressed the ministry's tendency to provide some assistive technology to the teacher in the process of teaching children literacy skills, which were identified by one of the teachers.

"There is a program from the ministry, Mazen and Thalloub, and also Fawaz and Nora, which the ministry uploads to YouTube from the Ministry of Education" (Teacher 6, School 5).

4.3 Pre-schools teacher's usage of technology with children

The most thing that encourage pre-schools teachers to use technology with children during the educational process are the positive impressions of children, as All teachers feel that children were attracted and gave it more attention to the educational contents that were presented by technological materials.

"Children enjoy with technology more than normal learning of writing. According to their age, the children that I have their age from 4 years to 6. Thus, practical things attract them more than normal, so I used this method with them more ..." (Teacher 1, School 1).

"Kids are so happy, and their attention attracted more than not using technology apps and they ask me to reuse them at sometimes the next day" (Teacher 5, School 3).

Regarding the usage periods of applications and technology to teach children reading and writing skills, most of the teachers –

7 pre-school teachers – agreed to use them during the main period usually, while 5 of all pre-school teachers determine their use of technology during the final meeting, and 4 during the workshop period.

"Use it to confirm information, at the final meeting. And in the main period, use it to present a story or present it with my voice" (Teacher 1, School 1).

Also, Teacher 5, School 3 expressed she often use technology in the free play period in addition to use it on the main period and the final meeting, as she states that *"I use it mostly in the main period and mostly in the final meeting period, and sometimes in the free play or workshop"*.

"… the ministry uploads to YouTube from the Ministry of Education, and it is purposeful and educational to be run after free play period or in the waiting period …" (Teacher 6, School 5).

Some barriers prevent preschool teachers from using educational apps. The presence of many children in classrooms may not allow the teacher to use it due to the lack of equipment or sufficient time to use.

Teacher 5, School 3 explained the reason for using applications cooperatively due to the scarcity of electronic devices in the school environment. *"I use it often collaboratively because there are no devices available for the number of children in the class. I can show them or give them two iPads that they use to write letters and pass it on between them"*.

"The large number of children, and therefore the teacher is not able to distribute all the attention to children, and therefore it is difficult to use technology with them, unlike if there are ten or 15 children" (Teacher 2, School 2).

"The lack of devices for the child at home, the dispersion of children, it is difficult for a teacher to focus on them all, the

weak internet network in the school, and a large number of students in the class" (Teacher 7, School 3).

Teacher 8, School 4 agreed that when she has been asked about the exitance of the technology tool in classrooms "*Almost everything the teacher brings with her, such as laptops and projectors*".

4.4 Pre-schools teachers training and education ministry supports

Regarding to professional developments, most of the teachers took professional training courses while their working in kindergarten as more than five teachers have expressed their registration in short-term training courses and online courses. Additionally, some of those courses are related to the field of technology.

Teacher 1, School 1 answered when asked whether the training courses belong to an official administration or they are specific to the technology industry? "*Belong and approved by the Technical Training Corporation of the Education Ministry*".

"*The courses belonged to an official administration, which is the Ministry of Education*" (Teacher 5, School 3).

Regarding the support provided by the Ministry of Education, recently, the education ministry is moving towards learning through technology. Also, it provides some courses related to the field of technology and education for teachers.

"*Currently the Ministry of Education is heading to technology training. I expect it will be compulsory for teachers to use technology. I joined a mandatory course on designing videos and educational presentations last summer. The trend is now for electronic things*" (Teacher 1, School 1).

"*There is nothing special for kindergarten ... I have never attended a course on the use of a specific technology for children, such as how to create flash magazines for children. The*

course I attended was very wonderful, but it is not aimed at children". (Teacher 4, School 5).

"In the field of kindergarten, there are no courses in the same field, but the university used to give courses in different fields. But there is often field training in the last semester of the university" (Teacher 2, School 2).

However, Teacher 3, School 1 argue that *"There are many courses related to kindergarten, there are skill and knowledge training on the use of some technological applications and devices".*

Some teachers also expressed some obstacles that prevented them from enrolling in the training courses, such as lack of transportation or inappropriate time for the training courses and the lack of training courses that related to pre-schools stage or technology.

"Most of the courses that it offers are through lectures, so the teacher is responsible for the children and there is no assistant teacher who supervises the children in teacher's absence…" (Teacher 4, School 5).

"Sometimes the obstacle is the difficulty of moving, and sometimes I have to sit with the children in the kindergarten. I cannot leave them every week for two days" (Teacher 4, School 5).

Also, Teacher 8, School 4 commented on the reason that hinders her for joining the training courses as *"There are not many courses in kindergartens, and they may be limited to limited regions"* and refer to the regions of the Kingdom of Saudi Arabia.

With regard to attending the courses, teachers 'preferences varied regarding the appropriate place for them to attend the courses.

"I honestly prefer personal attendance at courses and workshops and the best workshops over courses … because I feel the

interaction in workshops, via the Internet, I do not prefer them very much" (Teacher 6, School 5).

"I would rather be a 100% personal presence, be 100% present and focused, and there can be work in groups" (Teacher 9, School 2).

However, most teachers revealed that they have positive attitudes towards the online training courses, which are a useful educational approach. *"The best ones are via the Internet online, because it is easier to communicate and understand and shorten the time"* (Teacher 3, School 1).

"The best style of courses is through the Internet, as it achieve the purpose and saves a lot of effort, and it provides working mothers with finding a nanny for children" (Teacher 5, School 3).

Also, Teacher 8, School 4 when asked about the type of courses she would prefer to join in the future, answered *"Via the Internet"*.

Additionally, the participants' opinions showed that the Ministry of Education provides support for all public schools but it gives special support to model schools.

"I hope to provide full support, such as the internet and electronic devices, to all schools, and not to be limited to model schools" (Teacher 7, School 3).

"*Often the Ministry of Education gives technical and technological support to some international and model schools and does not provide support for all schools"* (Teacher 5, School 3).

When asked about Teacher 10, School 6 about the availability of equipment in kindergartens, she explained that *"Kindergartens are seeking to provide them because I have moved between several kindergartens and there are integrated kindergartens with a smartboard, a computer and a bright pen"*.

Moreover, two of the participants expressed the lack of support from government agencies or the Ministry of Education for private kindergartens. Where support is provided by the owners of private kindergartens according to their ability.

"think that it is not supported yet, especially in the private sector. Some schools have not supported the existence of smartboards or iPads, and the advanced tools that serve the child and the teacher to innovate more, but the tools and educational activities are present" (Teacher 2, School 2).

"Public schools may be the ones who receive support, but being a private teacher, the school owner is the one who takes care of providing educational tools, and if it does not happen, the teacher is the one who provides it herself" (Teacher 6, School 5).

"Private schools are owned by their owners, so the government does not interfere in supporting private schools ... There are female employees from government agencies but follow-ups with the privates section, so they come to evaluate private kindergartens" (Teacher 9, School 2).

4.5 Future expectations and recommendations:

The participating teachers expressed positively about the situation with the integration of technology in the educational process.

"Considering the technological and knowledge explosion, I advise them to use technology in education to keep pace with developments and attract children to the educational process ... I advise them to use it because it has great effectiveness in attracting children, communicating information" (Teacher 7, School 3).

The minority of teachers also expressed the role of current global situations and the effects the world is experiencing with Corona virus on the educational process, which may have a

positive impact on the process of introducing technology to education.

"With Coronavirus, there has become a trend for distance education, and the ministry has created the application of the virtual kindergarten, and the teacher teaches mothers by using it". (Teacher 3, School 1).*"For the education Ministry, now, it will rely on the application of the virtual kindergarten, and the ministry is the one who established it, and the child is registered into it in his name"* (Teacher 9, School 2).

"With distance learning, the Ministry of Education downloaded the virtual kindergarten application, so the child himself opens the application and learns letters, numbers and everything through this application. The teacher only teaches mothers and guardians how to download it to electronic devices and iPads and how the child enters the application" (Teacher 10, School 6).

Furthermore, teachers have mentioned some suggestions that may help in adopting good ways to teach young children the skills of reading and writing with technology.

"The teacher does not need many courses on technology, only she needs to learn how to use a specific technology in order to save her time, helping her to fix information in children ..." (Teacher 1, School 1).

"Initially, the courses are intensified by the Ministry of Education, and every kindergarten teacher joins a course on how to use technology for children. The second thing is to provide equipment in every school to support the educational process and to provide financial support that helps in maintaining the devices and downloading programs and activities that are financially costly" (Teacher 2, School 2).

"The teacher has to research and investigate everything new about kindergartens, learning methods, learning strategies, and technical devices ... I want all kindergartens in the KSA to be

supported by smart devices and new technologies..." (Teacher 10, School 6).

4.6 Summary

The results of this research indicated positive perceptions of preschool teachers about the effects of using technology and educational applications, especially in teaching young children literacy skills. Ways of teachers to integrate technology into the educational process are reported to enhance literacy skills. Some methods of using it were also mentioned, such as practising writing dotted letters, using tablets, or shading letters on the board, or using a smart board. Also, some educational apps that preschool teachers use with young children, the activities that they aim to use with children, be it literacy or other teaching skills, and the primary goals for the teacher to use technology were mentioned. Also, the lack of electronic equipment and technical support and the lack of professional training may be barriers to the use of technology in kindergartens as most teachers have expressed that they face those types of problems. Some teachers also referred to the role of technology and the direction of the Ministry of Education to use it to confront the current global conditions and reduce its impact on the educational process. The analysis of the data resulted in the views of many educators on the use of educational applications to enhance reading and writing skills, the challenges they face during use, and future expectations about its role in enhancing the educational process of pre-school teachers.

DISCUSSION AND RECOOMONDATION :

5.1 introduction

The first four chapter of the study have provided the rational for the research, the literature review, the research design and the result of the study. This chapter discuss the data collection and the findings with details, the study limitations and the implication for the future.

5.2 Technology and applications usage for enhancing literacy skills

The increasing spread of technology has led to many developments in children's developmental and cognitive needs. Given these developments, technology must be integrated into the educational process for children. Therefore, the technological materials must be provided in the learning environment to help the development of children and increase their motivation to learn (Can-Yasar et al. 2012). The results of this study indicate teachers effort to prepare children for the information age as teachers have positively expressed their way of introducing technology and being considerate to children's needs. teachers use technology according to what the educational situation required, regardless of the difficulties they faced in applying technology. The interviews data provides additional insight into the educational applications and technologies usage in classrooms as pre-school teachers emphasized that the children's reactions to the use of digital technology is what made them continue to use it frequently, as it worked to increase their attention and interaction with the information and skills provided to them.

It is clear that teachers have used digital technology in a number of ways to teach reading and writing to young children, as they have been used as visual means to display content with the projector or various educational applications, as audio means to display songs and audio stories for the alphabet, and audio-visual means such as using YouTube to display videos from specialized channels to teach letters and words to young children. The educational videos enhance children's learning of many basic concepts such as sounds and names, animals, colours and shapes (Aziz et al., 2011). The majority of pre-school teachers expressed their positive opinions regarding the use of educational applications to teach young children, where they

indicated their continuous use of digital technology during the educational process for various purposes, especially to enhance Arabic language skills for children between 4-6. Cuban (2001) describes the use of technology in the children's classrooms as a good addition. In other words, it means that digital technology worked as a supplement that can be used to cover the lack of educational tools in educational environments.

However, the interviews data indicates teachers concerns on over usage of technology, which motivate a few teachers to reduce the use of digital technology in actual writing practices, where those teachers expressed their preferences for the use of sensory methods in teaching children reading and writing skills, On the other hand, the majority of teachers think that the use of educational applications to teach writing does not change the traditional practices of children learning reading and writing skills as it does not hinder the use of traditional methods which develops children's senses and strengthens their small muscles.

Despite the challenges that teachers face in integrating technology to teach children reading and writing skills, they are working to understand the best methods of teaching with technology to develop the learning process. As in some schools, the teachers provide some technological devices themselves. Also, teachers take into account students' needs and define the goal of technology being used, since if there are assessment objectives to evaluate children's learning of letters and numbers, technology could be used individually. Whereas, if the use of technology is to teach children to read and write, technology is often used for learning as groups or to display educational content. Gokhale (1995) stresses that in cooperative learning, the learners are responsible for their own learning and the learning of the group as a whole for the success of the learning process.

Regarding the time of use for educational and technological applications to enhance reading and writing skills, most teachers

used them in the main period for the purpose of presenting the lesson, alphabets, words and stories, or to train children in writing and reading skills, It seems that the teachers' use of applications is more comprehensive than what is mentioned in the literature, as Hirsh-Pasek et al. (2015) has identified some ways to use the applications such as the free play period and their use for directed instructions.

Digital technology is often interpreted as computers and their basic accessories in addition to projectors, smart panels and tablets. Also, the teachers did not use other technology tools like virtual reality devices. Samuelsson (2001) notes that technology can be used for pre-schools to make the learning process creative. For example, the electronic board was used to write words by connecting points, use correcting pronunciation programs, use various educational applications to teach reading and writing skills, displaying videos from YouTube for letters and words stories and other sources and creating presentations and stories using computer programs. Aziz et al. (2011) confirms the positive opinions of teachers and parents in the educational videos on YouTube that target young children. applications helped teachers use them to create an enjoyable atmosphere when learning literacy skills. A variety of educational applications used by pre-school teachers to enhance children's reading and writing skills were revealed in this study(Papadakis, et al. 2017).

5.3 The support pre-school teachers receive

Furthermore, this study found some barriers preventing pre-school teachers from educational technology practices, which can be summarized in the insufficient support provided by the Ministry of Education, which includes funding support, lack of professional support and guidance for teachers on how to use educational technology to teach children reading and writing skills and what is it, and the lack of professional development for

kindergarten. Ihmeideh (2009) stresses that the lack of programs, funding issues, time, and technological skills are among the main barriers to using technology in educational practices in kindergartens.

In detail, there are some difficulties in obtaining appropriate training, Therefore, the minority of the pre-school teachers preferred to physically attend the training courses as it helps them to interact and focus, while most preferred to join the online courses because it is easier to communicate and save time and has the same effectiveness as the actual attendance of the courses. Also, online courses have several advantages as it enhance active learning geographically, facilitate access to learning resources, and improve the quality of learning (Cravener, 1999).

Additionally, the lack of resources and technological tools in schools reduces teachers' motivation to use technology to teach children the skills of reading and writing using technology in line with the current era. As advanced technological tools are limited to some model schools in the Al-Baha region, while some technological tools are provided in other schools and private schools.

However, teachers expressed the positive role that the Ministry of Education plays during the global conditions with the Corona virus. The teachers explained about the education ministry's tendency to provide an electronic application called (the virtual kindergarten) to teach young children reading and writing skills, in addition to developing some other skills.

Digital applications and information technology are suitable for the development and growth of children, Therefore, pre-school teachers should search for appropriate ways to introduce digital technology and join the training courses that help them perform their educational tasks which would be suitable for the recent technological developments.

Meanwhile, the Ministry of Education should pay more attention to educational age between 4 – 6 years, which forms the basis for the lives of individuals in society. The Ministry of Education should encourage pre-school teachers to be creative in work and motivate them by providing all educational methods, Also, the Ministry of Education should support the professional growth of preschool teachers by providing training courses related to literacy and technology to help them perform academic tasks better.

5.3 Directions for Future Research

I suggest that teachers' perceptions, experiences, could be in comparison with children's practices and academic progress. Neither evaluations or actual teachers practices were explored.

Although there are many educational applications to teach children literacy skills, no research has been found about this specific area.

CONCLUSION AND FUTURE RESEARCH :

6.1 Introduction :

During the interview, the responses expressed by the participants were summarized to allow an opportunity for further explanation and a reformulation of their ideas. In addition, some quotes from the ideas that the participants expressed during the interviews were presented.

6.2 Recommendations

the research suggested reviewing the education budget to provide financial support to pre-schools and provide the necessary equipment, providing continuous maintenance and replacing old devices with modern, advanced devices.

the Ministry of Education should support pre-school teachers to participate in professional and technological development activities and provide technology support in schools.

6.4 Future research:

Based on the data collected, I think it is interesting to conduct similar studies on the educational process and keep in contact with technological developments and knowledge the extent to which pre-understanding of technology and continuous support of technological tools for preschools' teachers affect the process of teaching young children the skills of writing and reading. explore the factors that help to fully integrate technology and the educational process in the pre-school stage in the Kingdom of Saudi Arabia. identifying the factors that need to be considered when making these developments in the educational system. hope that other researchers will expand my study to a larger sample and use more than one research method when appropriate conditions exist to present a complete picture of the actual use of educational technology applications in teaching literacy skills to children between 4 – 6 years.

References:

المنصور، أريج بنت محمد عبد العزيز, ٢٠١٦. برامج ركن الحاسب الآلي ودورها في إكساب طفل الروضة مهارات القراءة والكتابة: مشروع بحث مقدم لاستكمال متطلبات الحصول على درجة الماجستير في قسم السياسات التربوية ورياض الأطفال بكلية التربية بجامعة الملك سعود.*Journal of* *Faculty of Education-Benha University*, ٣٥٢ (٤٠٦٧), pp.1-87.

رحاب حسين علي, ٢٠١٦. أتجاهات معلمات رياض الاطفال نحو استخدام الحاسوب. *العلوم النفسية*, (٢٢), pp.36-60.

محمود حميدات, ٢٠١٣. درجة توظيف الكفايات الحاسوبية and يوسف عيادات المكتسبة من مساق برامج الأطفال المحوسبة في التدريس من قبل معلمات التدريب الميداني ومعوقات توظيفها

Alhumaid, K.F., 2014. *Perspectives and Usage of Technology of Arabic Language Teachers in the United Arab Emirates* (Doctoral dissertation, University of Kansas).

Almutairi, A.S., 2015. Technology education in Saudi Arabia in comparison with New Zealand: a study of policy, curriculum and practice in primary education.

Aziz, Z., Nor, S.H.M. and Rahmat, R., 2011. Teaching strategies to increase science subject achievement: using videos for year five pupils in primary school. *World Applied Sciences Journal*, *14*(SPL ISS 4), pp.8-14.

Blackburn, M.F., 2018. *Teachers' perceptions on the use of technology in the classroom to teach students identified with dyslexia* (Doctoral dissertation).

Blackwell, C.K., Lauricella, A.R., Wartella, E., Robb, M. and Schomburg, R., 2013. Adoption and use of technology in early education: The interplay of extrinsic barriers and teacher attitudes. *Computers & Education*, *69*, pp.310-319.

Braun, V. and Clarke, V., 2006. Using thematic analysis in psychology. *Qualitative research in psychology*, *3*(2), pp.77-101.

Boudo, L., Cavallaro, D., Hurtado, D., Pisano, K.R., Rutkowski, P., Smayda, S. and Chase, P., 2014. Children's early literacy development and adults' positive disposition toward reading through E-books and apps. *New England Reading Association Journal*, *49*(2), p.23.

Can-Yasar, M., Inal, G., Uyanik, O. and Kandir, A., 2012. Using Technology in Pre-School Education. *Online Submission*.

Cherner, T., Dix, J. and Lee, C., 2014. Cleaning up that mess: A framework for classifying educational apps. *Contemporary Issues in Technology and Teacher Education*, *14*(2), pp.158-193.

Cohen, D. and Crabtree, B., 2006. Qualitative research guidelines project.

Cohen, L., 2007. Lawrence Manion, and Keith Morrison. *Research methods in education*.

Cravener, P.A., 1999. Faculty experiences with providing online courses. Thorns among the roses. *Computers in Nursing*, *17*(1), pp.42-47.

CUBAN, L., 2001. Oversold and underused: computers in the classroom.-Harvard College. 250 p.

Denscombe, M., 2014. *The good research guide: for small-scale social research projects*. McGraw-Hill Education (UK)

Ertmer, P.A., 1999. Addressing first-and second-order barriers to change: Strategies for technology integration. *Educational technology research and development*, *47*(4), pp.47-61.

Ertmer, P.A. and Ottenbreit-Leftwich, A.T., 2010. Teacher technology change: How knowledge, confidence, beliefs, and culture intersect. *Journal of research on Technology in Education*, *42*(3), pp.255-284.

Falloon, G. (2014). What's going on behind the screens? Researching young students' learning pathways using

iPads. *Journal of Computer Assisted Learning*, 30(4),318–336. https://doi.org/10.1111/jcal.12044.

Fenty, N.S. and Anderson, E.M., 2014. Examining educators' knowledge, beliefs, and practices about using technology with young children. *Journal of early childhood teacher education*, *35*(2), pp.114-134.

Gokhale, A.A., 1995. Collaborative learning enhances critical thinking.

Hancock, J., 1999. *Teaching Literacy Using Information Technology: A Collection of Articles from the Australian Literacy Educators' Association*. Order Department, International Reading Association, 800 Barksdale Road, PO Box 8139, Newark, DE 19714-8139; Web site: http://www. reading. org.

Hirsh-Pasek, K., Zosh, J.M., Golinkoff, R.M., Gray, J.H., Robb, M.B. and Kaufman, J., 2015. Putting education in "educational" apps: Lessons from the science of learning. *Psychological Science in the Public Interest*, *16*(1), pp.3-34.

Howard, S.K., Yang, J., Ma, J., Maton, K. and Rennie, E., 2018. App clusters: Exploring patterns of multiple app use in primary learning contexts. *Computers & Education*, *127*, pp.154-164.

Hutchison, A. and Reinking, D., 2011. Teachers' perceptions of integrating information and communication technologies into literacy instruction: A national survey in the United States. *Reading Research Quarterly*, *46*(4), pp.312-333.

Ihmeideh, F.M., 2009. Barriers to the use of technology in Jordanian pre-school settings. *Technology, Pedagogy and Education*, *18*(3), pp.325-341.

Islam, R., Islam, R. and Mazumder, T., 2010. Mobile application and its global impact. *International Journal of Engineering & Technology (IJEST)*, *10*(6), pp.72-78.

Joffe, H. and Yardley, L., 2004. Content and thematic analysis. *Research methods for clinical and health psychology*, *56*, p.68.

Kermani, H. and Aldemir, J., 2015. Preparing children for success: integrating science, math, and technology in early childhood classroom. *Early Child Development and Care*, *185*(9), pp.1504-1527.

LaBelle, D., Alsulami, J. and Leone, J., 2016, September. Effects of using iPads on First Grade Students' Achievements in Arabic Language Classes In Saudi Arabia. In *Proceedings of the 5th Annual Conference on Research in Information Technology* (pp. 25-28).

Lancaster, J. and Bain, A., 2019. Designing University Courses to Improve Pre-Service Teachers' Pedagogical Content Knowledge of Evidence-Based Inclusive Practice. *Australian Journal of Teacher Education*, *44*(2), p.4.

Lanna, L.C. and Oró, M.G., 2016. An analysis of the interaction design of the best educational apps for children aged zero to eight. *Comunicar. Media Education Research Journal*, *24*(1).

Luppicini, R., 2005. A systems definition of educational technology in society. *Journal of Educational Technology & Society*, *8*(3), pp.103-109.

Lyman, S., 2017. Comparison of Early Literacy iPad Applications: Children's Engagement.

Mehdipour, Y. and Zerehkafi, H., 2013. Mobile learning for education: Benefits and challenges. *International Journal of Computational Engineering Research*, *3*(6), pp.93-101.

Mohebi, L. and David, S., 2019. Pre-service teachers' perspectives on their preparedness to use technology in classrooms in the United Arab Emirates: A qualitative approach. *Available at SSRN 3421431*.

Morgan, D.L., 1997. *The focus group guidebook* (Vol. 1). Sage publications.

Nasr, N., 2018 فعالية بيئة الروضة المستندة إلى ألعاب تعليمية إلكترونية على تنمية الإبداع لدى الأطفال.

Neumann, M.M., 2014. An examination of touch screen tablets and emergent literacy in Australian pre-school children. *Australian Journal of Education*, *58*(2), pp.109-122.

Neumann, M.M., 2018. Using tablets and apps to enhance emergent literacy skills in young children. *Early Childhood Research Quarterly*, *42*, pp.239-246.

Neumann, M.M. and Neumann, D.L., 2017. The use of touch-screen tablets at home and pre-school to foster emergent literacy. *Journal of Early Childhood Literacy*, *17*(2), pp.203-220.

O'bannon, B.W. and Thomas, K., 2014. Teacher perceptions of using mobile phones in the classroom: Age matters!. *Computers & Education*, *74*, pp.15-25.

Oakley, G., Wildy, H. and Berman, Y.E., 2018. Multimodal digital text creation using tablets and open-ended creative apps to improve the literacy learning of children in early childhood classrooms. *Journal of Early Childhood Literacy*, p.1468798418779171.

Papadakis, S., Kalogiannakis, M. and Zaranis, N., 2017. Designing and creating an educational app rubric for preschool teachers. *Education and Information Technologies*, *22*(6), pp.3147-3165.

Papadakis, S. and Kalogiannakis, M., 2017. Mobile educational applications for children: what educators and parents

need to know. *International Journal of Mobile Learning and Organisation*, *11*(3), pp.256-277.

Patton, M.Q., 2002. Two decades of developments in qualitative inquiry: A personal, experiential perspective. *Qualitative social work*, *1*(3), pp.261-283.

Pianta, R.C. and Stuhlman, M.W., 2004. Teacher-child relationships and children's success in the first years of school. *School psychology review*, *33*(3), pp.444-458.

Polit, D.F. and Beck, C.T., 2010. Generalization in quantitative and qualitative research: Myths and strategies. *International journal of nursing studies*, *47*(11), pp.1451-1458.

Samuelsson, R., 2001. *Early childhood education and ICT in Sweden*. Retrieved 13/9/2008 from: http://www. ioe. ac. uk/cdl/datec/datecfrml. htm.

Solomon, D.L., 2000. Toward a post-modern agenda in instructional technology. *Educational Technology Research and Development*, *48*(4), pp.5-20.

St Hilaire, R., 2019. Enhancing Instruction in a Changing World: Kindergarten Educators Implementing Technology to Support Student Reading Development.

Thomas, K.M., O'Bannon, B.W. and Bolton, N., 2013. Cell phones in the classroom: Teachers' perspectives of inclusion, benefits, and barriers. *Computers in the Schools*, *30*(4), pp.295-308.

Whelan, T.J., 2007, October. Anonymity and confidentiality: Do survey respondents know the difference. In Poster presented at the 30th annual meeting of the Society of Southeastern Social Psychologists, Durham, NC.

White, H.S., 2015. Early childhood teacher perspectives of developmentally appropriate use of computer applications.

Wood, R. and Ashfield, J., 2008. The use of the interactive whiteboard for creative teaching and learning in literacy and mathematics: a case study. *British journal of educational technology*, *39*(1), pp.84-96.