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The Influence of Early Technology Exposure on Early Childhood Learning

An Analysis through Literature Review

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Abstract

As we are living in this 21 century and here it is not possible to omit the persuasion of equipment in every field of life. Certainly, this is the world of technology and with an increase in the development of technology, its effect is also increasing. In this era, the born children are known as 'digital natives'. As a result of this growing technology and habit of children of using it has created a research question to check the impact of advanced technology on young children of the modern era. On one hand, some instructors have faith that general growth of children improves with the help of such technology and it helps them in in their adulthood and in future career through these skills. However, other educators believe that this technology has a negative impact on young children. This research is conducted to check the effect of technology exposure on the learning of children. For this research purpose, extensive literature was reviewed. With the help of the wide literature suggested that in this modern world, technology has expelled the student from learning along with disturbing their playtime and interacting with others but it is not supported by many researchers. While on the other hand, many researchers advocated the positive impact of technology on childhood learning abilities. Modern teaching methods in which technology is infused for learning purposes increase the efficiency and bring positive results on learning of student if they are compared with traditional methods. Use of technology has adverse effects on physical and mental health if it is continuously used for a long period of time. In addition, if there is no supervision on children when they are playing with modern gadgets it may be harmful to children. Hence it is concluded that the use of technology by young children brings a positive impact but if it is properly supervised by caretakers and this use is in limits like it is not used in an excessive manner. There is need to investigate the investment that this structure needs along with the kind of technology that should be infused in classrooms of young learners. In addition to this, it should be also focused that how a blend of technology along with outdoor plays can be introduced.

Keywords: children, technology, learning.

ملخص البحث

نظرًا لأننا نعيش في هذا القرن الحادي والعشرين ، فلا يمكن هنا تجاهل إقناع المعدات في كل مجال من مجالات الحياة. بالتأكيد ، هذا هو عالم التكنولوجيا ومع زيادة تطور التكنولوجيا ، يتزايد تأثيرها أيضًا. في هذا العصر ، يُعرف الأطفال المولودين باسم "المواطنين الرقميين". نتيجة لهذه التكنولوجيا المتنامية وعادات الأطفال في استخدامها ، فقد خلق سؤال بحث للتحقق من تأثير التكنولوجيا المتقدمة على الأطفال الصغار في العصر الحديث. من ناحية ، يؤمن بعض المدربين بأن النمو العام للأطفال يتحسن بمساعدة هذه التكنولوجيا وتساعدهم في مرحلة البلوغ وفي المستقبل الوظيفي من خلال هذه المهارات. ومع ذلك ، يعتقد معلمين آخرين أن هذه التكنولوجيا لها تأثير سلبي على الأطفال الصغار. يتم إجراء هذا البحث للتحقق من تأثير التعرض للتكنولوجيا على تعلم الأطفال. لهذا الغرض البحثي ، تمت مراجعة الأدبيات واسعة النطاق. بمساعدة الأدبيات الواسعة التي اقترحت أنه في هذا العالم الحديث ، طردت التكنولوجيا الطالب من التعلم إلى جانب إزعاج وقت اللعب والتفاعل مع الآخرين ، لكن ذلك لا يدعمه العديد من الباحثين. بينما من ناحية أخرى ، دعا العديد من الباحثين إلى التأثير الإيجابي للتكنولوجيا على قدرات التعلم في مرحلة الطفولة. طرق التدريس الحديثة التي يتم فيها غرس التكنولوجيا لأغراض التعلم تزيد من الكفاءة وتحقق نتائج إيجابية على تعلم الطالب إذا ما قورنت بالطرق التقليدية. استخدام التكنولوجيا له آثار ضارة على الصحة البدنية والعقلية إذا تم استخدامها بشكل مستمر لفترة طويلة من الزمن. بالإضافة إلى ذلك ، إذا لم يكن هناك إشراف على الأطفال أثناء اللعب بالأجهزة الحديثة ، فقد يكون ذلك ضارًا للأطفال. ومن هنا استنتج أن استخدام التكنولوجيا من قبل الأطفال الصغار له تأثير إيجابي ولكن إذا تم الإشراف عليها بشكل صحيح من قبل القائمين على رعايتهم وهذا الاستخدام في حدود مثل عدم استخدامه بطريقة مفرطة. هناك حاجة للتحقق من الاستثمار الذي يحتاجه هذا الهيكل جنبًا إلى جنب مع نوع التكنولوجيا التي يجب غرسها في الفصول الدراسية للمتعلمين الصغار. بالإضافة إلى ذلك ، يجب التركيز أيضًا على كيفية تقديم مزيج من التكنولوجيا جنبًا إلى جنب مع المسرحيات الخارجية.

الكلمات مفتاحية : الأطفال ، التكنولوجيا ، التعلم .

Introduction

As we are living in this 21 century and here it is not possible to omit the persuasion of equipment in every field of life. Certainly, this is the world of technology and with an increase in the development of technology, its effect is also increasing (Amos, 2016). In this era, the born children are known as 'digital natives'. They are extremely evident to technology in both cases whether they look for it or not (Prensky, 2001). As their growth is along with technology, therefore, live with this technology and using it is included in their nature: they always have laptops, smartphones, tablets, digital cameras, etc. around their surroundings.

As a result of this growing technology and habit of children of using it has created a research question to check the impact of advanced technology on young children of the modern era. While on the other hand, some instructors have faith that general growth of children improve with the help of such technology and help them in in their adulthood and in future career through these skills. While on the other hand, some educators believe that this technology has a negative impact on young children. This group of researchers believe that this negative impact is due to an increase in screen time of children that has decreased the physical activity of children, socially they separate themselves. Other disadvantages of this technology include slow cognitive, speech delays, etc. These opposite views of researchers created an urge to research this area of study to check whether it has a positive impact or negative impact on young children.

Therefore through this research, the inquiry question here is: ***What is the impact of early technology on the learning of children in their early childhood?***

This research consists of three parts: the first part is about the method that is selected to improve the understanding of this topic. The next part consists of a widespread literature review about the topic that includes 30 research papers and it is the basic part of this research. The next part is about the conclusion in which an important explanation regarding the research question is made.

The Problem of Study

As a future instructor in this technology-based world, it is vital to recognize the effects of early technology usage on young children's development and learning as it will benefit in altering the future teachings, matched with present situations.

Research Questions

How learning of young children is impacted by the technology?

Does literacy achievement and learning of children is helped with the use of technology?

Objectives

The basic objectives of this study are;

1. To evaluate the effect of technology on learning of children.
2. To check the importance of technology in the literacy accomplishments of children.
3. To realize how the social skills and cognitive ability of children are impacted by screen time.

Importance of Study

Here it is important to check that to which extent the different opinion regarding this topic of study are on merit; whether early technology impact the learning of children in a positive or negative manner. It is also important to resolve this issue of different opinions as it will create a foundation regarding system of education.

Inquiry Approach

This research is conducted to check the effect of technology exposure on the learning of children. For this research purpose, extensive literature will be reviewed. Different journal databases are explored e.g. Google scholar, science direct while on the other hand along with these databases local literature is also explored to resolve the research question. Following terms of searching and their combination is used for a research purpose:

- effects of technology on learning.
- technology impacts on learning in childhood of children.
- The swipe of technology with playing in children.
- early education in children with the help of technology.
- mixing of in education of children.
- adverse effects of technology on children.
- role of play.
- children, technology, and learning.
- children and digital media.

Various materials are explored that are related to our topic of research. But all these materials were not relevant to early childhood that is the focus of this study. Different researchers focus on different age groups like some of them focused on college-level students while some others focused on secondary-level students. These studies were not included in this research as they do not fulfill the basic objective of this research. However, the impact of technology on students of higher education can be explored but our focus of the study is to check its impact on fixed age-group children i.e. 0-8 years.

While the selected researches were then divided to realize the type of technology that addresses the education of children during early childhood. At a large scale, five different categories were explored that can be merged in order to have a clear grip to solve the research question: **How learning of young children is impacted by technology?** Following are the five different categories:

- Positive effects of technology on the education of children in childhood .
- Role of teacher and understanding of the topic.
- The selection of technology defines its effect.
- Modification in the environment of learning.
- Play and overall wellbeing of children.

One of restriction of this research is that it is totally made on the basis of the literature of previous researches while no data collection, analysis, interviews are conducted to check the impact of technology usage of learning of children in their early childhood. The duration of literature included was of 10 years i.e. 2009 to 2018 that included the different point of views of different researchers while the literature prior to 2009 also helped in understanding. However, the availability of literature in abundance shows the importance of this issue for people belonging to the education sector and psychologists who are continuously trying to resolve it by taking updated data and knowledge to conclude results on the basis of recent data.

Literature Review

It is generally known that education and performance in children are impacted by technology. Here question is that this impact is positive or negative. This question is an area that creates difficulty for workers that are working in the education sector or who are in the domain of psychology. While on the other hand, it is not possible to separate technology from our lives, and in this modern era growth of children is impossible without technology usage (NAEYC & FRC, 2012), therefore it is very essential to have a good understanding of the fact that how this technology can be used in a good and productive manner, decreasing its bad effects on children. It is only possible with the help of caretakers of children that are parents and teachers of children. But it is essential to check which educator favors the exposure of technology in children and what their research says.

Positive Impacts of Technology

Summary of positive impacts
1. Initiation of technology develops arithmetic skills – tablet based training
2. Education based websites enhances literacy learning
3. Offers way in to more material on the websites
4. Sharp engagement with the help of ‘trans-literacy’ web 2.0 platforms
5. Can be pooled with traditional ways to demonstrate both digital and face to face communication assistances

Summary of obstacles
1. Teacher opposed: absence of support, PDs and general computer skills
2. Can be proved disturbing if use is unfettered
3. Needs noteworthy finance in some countries
4. Unproductive computer series are really like outdated pen-and-paper exercises
5. Unable to change according to needs – undiscriminating acceptance of ICT for the purpose of keeping up with trends

Many researchers have favored the effects of technology on the learning of children. One of them includes Ven, et. al. (2017) who include one of the tablet games in the students of Grade 1 students to check whether initiation of technology in students improve their arithmetic skills. The results show that with the help of such training arithmetic skills of children improves and children become more efficient. Pruet, Ang, and Farzin's (2016) worked on the students of Grade 2 from Northern Thailand. Researchers concluded that with the help of the intervention of tablets learning in students improves at a significant level. This effect was more in those children that belong to neglected areas. As in such children's use of technology is very less and when they are taught such technology usage their engagement is more than that of other students and they feel more confident. This reason was felt by researchers that it may be reason slow learners improve at a great level. On the basis of the conclusion of this research, the researchers suggested the pedagogical development in which the syllabus will be modified to include tablet-based learning. One of the same suggestions was given by Oliemat, Ihmeideh, and Alkhawaldeh (2018) in their research that was rooted in Jordanian schools. In this research they studied 40 students of Grade 2, the researchers believe in the use of technology in childhood learning and suggested that in the education system

of the studied country tablet-based learning should be initiated in schools. Researchers trusted in the influence of technology in the learning of children and suggested that caretakers of children i.e. teachers and parents should play a positive role in the development of technology-based learning by guiding their children properly in the usage of tablets at home and in classrooms.

Schacter and Jo (2016) examined the impact of tablet-based learning on the performance of students of preschool in the case of Mathematics. The results of the study were optimistic which suggested that technology-based learning is effective for the childhood learning of students. While on the other hand, another research by Schmitt, et al. (2018) worked on the research question that how learning skills in the students of kindergarten are affected by educational websites. Basically learning was playing with the help of web-based games. With the use of technology learning of children in many areas improve like knowledge of alphabets, vocabulary, reading, etc. While on the other hand researchers also believe that even with the least involvement of parents' use of technology enhances childhood learning. While this learning can be enhanced with the involvement of parents to avoid interruption.

While on the other hand, the idea of interruption is also discussed by many educators. Bando, et al. (2017) suggested through their research that laptops can be a source of interruption in learning which may also hinder the growth of social skills, while they also concluded that laptops have a

positive impact on the learning of students. This conclusion was the same as suggested in outdated books. However, this research stayed indecisive regarding the understanding of the advantages of technology on the learning of students. Laptops are the source of knowledge but at the same time, they are also a source of distraction through games, social networking sites, music, etc. While the number of studies favoring the use of technology in learning is far greater than that of other perspectives. Cahill and McGill-Franzen (2013), Yilmaz (2016), Schacter and Jo (2016), Pruet, Ang and Farzin (2016), Ven, et. al. (2017), Schmitt, et. al. (2018), Oliemat, Ihmeideh and Alkhawaldeh (2018), and many other researchers worked on the positive role of technology on development and learning in young children.

Yilmaz (2016) suggested that playing is an essential portion of the growth of children and children must be involved in it during the early childhood era. For research purposes, educational magic toys (EMTs) were made and their impact on the attitude of students and teachers towards technology-based learning was examined. Such toys included puzzles, flashcards, match cards, etc. They were used to teach the students of the 5-6 years age group about different shapes, colors, vegetables, fruits, numbers, etc. After a complete analysis, the researcher suggested that positive behavior in teachers and students was examined. Even though not very good cognitive skills were there in children but the positive impact of technology was examined with the help of this research. While on the other hand, another research worked on how picture books affect the language and literacy skills of children (Cahill & McGill-Franzen, 2013). The basic intention of the researcher here was to check that how electronic texts stimulate young children to learn and read. While on the other hand in the

selection of electronic text a very wise decision is needed to be made. The researchers used the notion of "trans-literacy development" that is education with the help of different ways and platforms. Normal electronic books may improve the vocabulary and prosper conventional learning, while innovative digital books that need more student interaction are more effective in improving comprehension and communication skills in students. Therefore the researchers suggested that apps and technology web 2.0 elements should be selected as they have interactive material for more engagement of children and it will improve comprehension, vocabulary, etc. So caretakers i.e. teachers and parents should focus on the careful selection of apps.

Plowman, et al. (2012) also suggested that the use of technology has a positive effect on the learning of children but in the case when the right technology is selected by the family for their child and good practice is also adopted at home. While on the other hand if negative means of technology are used by children like watching TV then in such cases results will be adverse in case of both health-related issues and in the learning of children. While at the same time the researcher suggested that observing others is another means of learning in children. They learn by observing and copying others. Hence such a culture must be adopted by families that support positive learning through technology. If positive use of technology is adopted it will show many positive outcomes like enhancing knowledge, increase in operational skills, emergent learning moods, etc.

Exposing the notion that an increase in the use of technology can move away from children from crucial playtime, Fairlie and Kalil (2016) studied the behavior of around 1000 students from different schools of California

and concluded that there was no impact of the use of technology in decreasing playtime or sports of students. As a matter of fact, the research showed that how the use of technology improves social skills, face-to-face interaction, and communication skills than that of victimizing them of inactivity. While on the other hand it is also suggested that it will not be a good approach to swipe all traditional methods of learning with modern technology-based learning methods as results of technology-based learning are not sure but traditional learning is still remarkable (Richter & Courage, 2017). While on the other hand, it is also correct that learning through technology like electronic books improves engagement, suggested by Richter and Courage (2017), and it should be used along with traditional means of learning instead of replacing them. Also supported by teachers and parents as they think that traditional learning is also important and should not be completely swiped by technology-based learning. Therefore it is essential to balance ICT with traditional ways of learning. In which role of a teacher is also very essential (NAEYC & FRC, 2012).

Role of Teachers and knowledge

In today's modern environment the role of teachers is still very important. As the environment has totally changed so traditional methods of teaching cannot serve the basic purpose of teaching in this era (Prensky, 2001). In this era, students are acquainted with the use of technology like tablets, laptops, etc. As it is not possible to separate these technologies from the lives of children so its effect must be discussed that how to use them in such a way that reduce its adverse effects and increase the learning of student which depends on teachers.

Meaningful integration of technology: positive attitudes required

But Blackwell et. al. (2013) explained that although teachers have more access to technology than teachers of the previous generation still are not

using it in schools. On the basis of this fact, the researcher worked to find out the fact behind this fact that why teachers are not using technology in their teachings when having access to this technology and digital methods along with improvement in this technology in recent times. For research purposes, they used the data of 1329 teachers of preschoolers to check the causes behind this under-usage of technology. The basic reason behind this fact was the core beliefs of teachers and their non-recognition towards the importance of technology. At the same time, deficiency in training and development of teachers is also an obstacle in the way of the usage of technology. Therefore increase in training of teachers may enhance the usage of technology in classrooms.

While there are many other types of research that are based on the same conclusion about teachers which includes Ertmer, et. al. (2012), Gialamas and Nikolopoulou (2010), Kale (2018), Christensen and Knezek (2018), Blackwell et. al. (2014, 2016), etc. All of them are based on some notion that can be described as the *use of technology depends upon the supposed value of technology in the point of view of teachers.* Therefore firstly teachers must understand the fact that the use of technology improves learning in young children so they may incorporate it in their teaching methods. Their acceptance will help them in incorporating them in their teaching methods that will also enhance their knowledge about technology, academic knowledge, and content knowledge. These together become the acronym TPACK which is also discussed by many researchers in their studies like Belo, et. al. (2016) and Kale (2018).

Diffusion of ICT in schools should be expressive and properly organized, otherwise if it is diffused in a chaotic manner then there is no benefit of it. Kale (2018) concluded very clearly that if you wanted to make technology-based learning successful in schools then teachers of schools should consider the social aspects of TPACK. The demonstration was given to the contributors about technology-based learning and they were asked to show its usefulness. This study concluded that with the development of teachers' TPACK they can use technology more efficiently for teaching purposes. But for efficient use of technology they should understand its worth and should incorporate it in their teaching methods. Belo, et. al. (2016) concluded that it is also helpful for teachers of preschoolers.

Ertmer et. al.'s (2012) observed that teachers' own opinion about the use of technology in childhood learning is very essential and its success depends upon the attitude of teachers. If developed countries are considered, with enhanced investment in ICT the external problems have decreased at a large scale like unreachability and insufficient support for it. Hence teachers of this modern era have easy access to technology.

\Still, the researcher concluded that teachers complaint about less external support from management. This conclusion is also made by Blackwell, et. al.'s (2014).

Support is vital in serving mature teachers navigate digital world

Blackwell et. al. (2014) suggested that after teachers' opinion about technology impact of support on the use of technology is the biggest factor. While in the case where support is scarce it also affects their attitude towards its use. The interruption in using technology like errors in operating any program may lead towards old teaching methods. Hence support is a factor that has a significant effect on the adoption of technology by old teachers in their schools. While at the same time behavior of teachers is also an important factor regarding using technology in classrooms especially in the case of teachers of preschoolers. Here positive behavior is needed for

incorporating technology in classrooms. The same conclusion is also repeated by researchers in their research of 2016.

Selection of technology

When instructors show good behavior with the help of outward support, they can make a good decision regarding the selection of technology in their classrooms. If we talk about the impact of technology is either good or bad on young students then there is a lot of research on this topic but the conclusion here is that if technology is selected in a proper manner then its impact will be positive. In preschoolers it is found that the use of technology has a positive impact on their learning if the technology is selected wisely (Bose, 2009; Bers, et. al., 2014; Belo, et. al., 2016; Sharkins, et. al., 2016; Outhwaite, Gulliford & Pitchford, 2017).Christensen and Knezek (2018) concluded that older teachers are more hesitant in adopting new technology in their classrooms. They used mobile learning readiness as a learning variable and suggested that it has a direct correlation with the capability of teachers. Hence with an increase in the capability of teachers they can more efficiently incorporate technology in their teaching methods. While the growth of capability is only possible with the help of training and development as controlling different technology gadgets is a quite difficult task.

Selecting the accurate ICT – evidence for interactive and complementary programs

Belo, et. al. (2016) suggested through their research that different types of software applications and computer programs including those that teach phonics, reading, writing, vocabulary, etc. are the kinds of ICT united substantial that can be helpful for educating early education. From these applications and software that are easier to use and are more interactive, they are more effective in learning of early learners. While on the other hand Papadakis, Kalogiannakis, and Zaranis (2018) concluded that such applications and software are even interactive but they have only one correct

answer i.e. that are of closed-type are almost type of traditional learning exercises and their efficiency rate is also low. Rather than close-ended there must be open-ended questions so the student may express their opinion. In this way, they will feel motivated and learn more efficiently.

Bose (2009) worked on Developmentally Appropriate Technology in Early Childhood (DATEC) in order to determine the acceptance rate of technology in case of instructors of preschoolers in Botswana in order to check which kind of technology is viable there and in order to check the deficiencies in support system in implementing this technology in teaching methods of instructor. Internet was considered as most feasible and viable in this case. Here it is recommended by the researcher that those applications should be developed that help early educators.

Bers et. al.'s (2014) used an exceptional method to describe that how preschoolers can learn with the right kind of technology. In three classrooms of preschoolers TangibleK Robotics Program was integrated and after completion, it was concluded that such programs increase engagement in students. It is also suggested that positive learning outcomes are the result of properly selected technology and for proper selection of technology TPACK is needed (Belo, et. al., 2016). While on the other hand Papadakis, Kalogiannakis, and Zaranis (2018) suggested that those applications and software that claim good results not always show them but while the selection of applications and software a wise and careful decision should be made in order to achieve good results with incorporating such applications and software in classrooms. Therefore here it is .

Sharkins et. al. (2016) concluded that about 41% of parents give their children cellphone or iPods to keep them busy in restaurants. As they are not supervised by anyone there so much use of technology can create problems for parents in long run. In addition to it, it also gives an impression to children that this technology is made for entertainment purposes. Sharkins et. al. (2016) suggested through their research that instructors play a vital role in creating proper media, technology, and screen time (MeTS) practices. While on the other hand parent also considered the use of MeTS till they are

not harmful. But to know their results either they are harmful or not they must be properly supervised. It is the duty of caretakers of children to select the right technology for their children in order to bring a change in this changing environment.

Transformation in learning environments

It is important here to mention here that many researchers have studied the impact of interactive learning session of children on its results (Eagle, 2012; NAEYC & FRC, 2012; Belo, et. al., 2016; Richter & Courage, 2017; Papadakis, Kalogiannakis & Zaranis, 2018). When caretakers of children are involved in learning sessions of children and selection of right technology, the learning environment completely changes.

Digital Didactical Design (DDD) was the structure that was incorporated by Jahnke, et. al. (2017) in order to check that which kind of technology works best in the case of the educational sector. In this structure, student, instructor, and content were used to produce results. The results will show the efficiency and effectiveness. Hence a little modification in settings will bring a change in result.

Byers, Imms, and Hartnell-Young (2018) suggested that it is an innovative learning environment (ILE) by which instructors shift from traditional teaching methods to modern technology. While on the other hand it is also suggested by researchers that 3-D technology of ILEs works on shared and energetic teaching methods than that of traditional teaching methods as in this environment a student can use many ways to reach

content. DDD is the structure that may be incorporated to develop the right technology for learning purposes. Eagle (2012) supported such technology that is interactive for the student to enhance their learning ability. The researcher supported "joint imaginative play" whose creation is possible if you are "designers of environments"

Play and overall wellbeing of children
Making sense of the changing nature of play in the 21st century

As in this modern era, the teaching methodologies have completely changed the learning atmosphere in which various technical tools have been incorporated for the students of this technical era therefore some researchers have worked on the changing meanings of 'play' in this modern environment. Conventional games have decreased in this modern world among children. On the other hand, this reduced numbers of outdoor games have very negative effects on the health of children like decreased cognitive, fatness, problems of mental health, etc (Whitebread, 2012) while it is also noted that this decrease in outdoor play is not due to technical advancement but it is due to environmental issues, security reason, over-sensitive caretakers (Whitebread, 2012). Though excessive use of gadgets is harmful for mental and physical health of children but on the other hand if they are properly used not crossing the limits then it shows benefits on mental growth like enhanced social and cognitive skills, good reaction time, etc.

On the other hand, a wide literature is also available on worthy playtime, emotional welfare of children, and their cognitive development (Van Schie and Wiegman, 1997; Feldman, 2007; Fearn & Howard, 2011; Whitebread, 2012; Prskalo, 2015). While research by Prskalo, Horvat, and Hraski (2014) and Prskalo (2015) outdoor plays increase the learning abilities of children. The researchers also suggested that it is the duty of tutors to raise the spirit for such plays in students. A wide literature is available on the significance of play while some of them have also focused on the nature of play that has totally changed in this century (Whitebread, 2012). Rather than swimming it is more useful to set technology-based games in order to enhance learning abilities.

Conclusion

With the help of the above-mentioned wide literature suggested that in this modern world, technology has expelled the student from learning along with disturbing their playtime and interacting with others but it is not supported by many researchers. While on the other hand, many researchers advocate the positive impact of technology on childhood learning abilities. Modern teaching methods in which technology is infused for learning purposes increase the efficiency and bring positive results on learning of student if they are compared with traditional methods. Even when technology is not used for learning purposes still its results are not always negative. With the help of many gadgets, social interaction enhances in children.

Use of technology has adverse effects on physical and mental health if it is continuously used for a long period of time. In addition, if there is no supervision on children when they are playing with modern gadgets it may be harmful to children. Hence many researchers that advocate the use of technology have clearly mentioned in their studies that it is the responsibility of caretakers to supervise their children to bring a positive impact of technology. As all kinds of technologies are not good for enhancing the learning abilities of children hence tutors must play a key role here in a selection of appropriate technology.

Technical gadgets are used to increase the efficiency of learning but teachers must have a good command of the use of such technology. While on the other hand, it is also noted that older teachers are not incorporating modern technology in their classrooms. It shows that they have not adequate TPACK skills in this century. They still have old beliefs and their behavior is technology averse as they are not identifying the importance of modern technology for the education of young children. While on the other hand,

those who believe in the worth of technical gadgets have adopted technology-based teaching methods to enhance the learning abilities of their students. For the acceptance of this modern technology by early childhood tutors, they should have external support along with proper training and professional development. So they may select the right technology, applications, and software for creating a proper learning atmosphere.

While along with this technical advancement, the role of outdoor games is also highlighted in the literature that brings cognitive skills to children. In this modern world, the playtime of outdoor games has decreased to a large extend. While no significant proof is found about the reason for this reduction in outdoor games is the use of technology. Instead of the use of technology, the scholars have considered the security reasons, over-sensitivity of parents, atmospheric issues as the main reasons for the decrease in outdoor playtime. Again here it is the duty of caretakers of children i.e. parents and teachers to balance outdoor playtime and technology-based games to enhance learning skills along with good physical and mental health.

Hence it is concluded that the use of technology by young children brings a positive impact but if it is properly supervised by caretakers and this use is in limits like it is not used in an excessive manner. Playtime is not decreased by technology but this playtime has reshaped due to advancement in technology. Consequently, the researchers should focus on the type of technology that brings a positive impact on the learning abilities of children instead of simply checking the impact of technology on the learning abilities of children. So here the need is to investigate the investment that this structure needs along with the kind of technology that should be infused in classrooms of young learners. In addition to this, it should be also focused that how a blend of technology along with outdoor plays can be introduced. Therefore for the student of this century by this research, they are helped to develop in this technical environment.

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