

Teacher and Parent Perspectives on Educational Learning Applications

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LLT 575 Methods of Research

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April 30, 2021

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Abstract

Currently, young students are saturated with new technologies and screen time. Teachers and school districts often purchase licenses to utilize specific apps that align with the curriculum to utilize on one-to-one (1:1) iPads. Parents also may independently purchase and utilize learning applications on home devices and there is a potential for conflict or misuse. Research is limited as to how aligned the parent and teachers' views, opinions, and usage are with regards to educational learning applications and the screen time usage of our youngest learners at an age and stage of development when it is crucial to many areas of development. The student will benefit educationally from parents, teachers, administrators, and application developers all being informed users and purchasers of education applications utilized on 1:1 devices.

Introduction

Learning in the early years, kindergarten to third grade, has changed significantly over the past few decades from learning in centers with manipulatives, to learning on portable electronic devices. In addition, parents continue to take on the role of their child's first teacher, especially in the early years when the most assistance with learning and school work is needed at home. According to the Pew Research Center for Internet and Technology (2020) , 96% of Americans own cell phones and additionally nearly three-quarters of U.S. adults now own desktop or laptop computers. Portable digital devices, such as tablets, are now commonplace in early childhood education and the demands for creating a digital learning environment on children's devices are a priority for children and parents. The role of digital learning devices comes in many forms; a literacy enhancement tool that fulfills informative, communicative, or entertainment roles (Sergi et al., 2017). The integration of the iPad in education, is thought to bring a paradigm shift and transform the twenty-first-century classroom (Retalis et al., 2018). Parents play an important role at the home of monitoring their children's devices and helping with schoolwork to ensure academic success. Teachers and other stakeholders also have a vested interest in the educational applications of technology on devices, especially when they are owned and issued by the school.

Topic Statement and Purpose

Research continues to be conducted on digital technologies and screen time usage with young children. Applications and developers are designing and creating digital learning applications at an enormous rate and many times without consideration for developmentally

appropriate usage. There are currently an overwhelming number of apps available to teachers and learners. While some of these have been developed primarily for educational use, others used outside of education have been appropriated for their educational relevance (Stevenson et al., 2015). From the parent's perspective, portable electronic devices are used at home for both entertainment and educational purposes. Teachers and administrators investigate and implement specific applications for learning based on a children's' interest as well as relation to the curriculum and developmental needs. The purpose of this study is to examine the teacher and parent perspectives on developmentally appropriate learning applications with 1:1 devices in grades K-3.

Relevance

Research suggests that there are both benefits and risks to media usage and screen time with young children. According to the American Academy of Pediatrics (2016), risks include negative health effects on weight and sleep; exposure to inaccurate, inappropriate, or unsafe content and contacts; and compromised privacy and confidentiality. Parents face challenges in monitoring their children's and their media use while serving as positive role models. In contrast, some benefits of digital devices include improvements in knowledge, language capabilities, problem-solving skills, eye-hand coordination, and engagement in creative activities (Sergi et al., 2017).

Ultimately, electronic device usage with young children is a team effort and there is no "one size fits all" approach when it comes to using technology for educational purposes. Parents, teachers, administrators, and other stakeholders all share the responsibility to research educational applications and their developmental appropriateness, monitor their usage and purpose, and

ensure proper growth and development of young learners is of the priority. Through examining, teacher and parent perspectives, views, and opinions on educational technology usage, best practices, at home and school can be developed.

Definition of Terms

Portable Digital Devices- PDD's are typically tablets and smartphones.

Early Childhood Education- ECE refers to the learning period from birth to 8 years old.

Applications- Apps prepare students to use technology effectively and appropriately in school, in the workplace, or everyday life. An app most frequently refers to a mobile application or a piece of software that is installed and used on a computer.

Review of Literature

For children in kindergarten through grade three, there has been an increase in the introduction of educational learning technologies. Preschoolers have transitioned from watching educational television to having a 1:1 device with a multitude of learning applications designed to enhance learning. Young children of all socio-economic status, have access to Portable Digital Devices (PDD) and are using them both in the school and home setting for learning. Parents and educators have a vested interest and a responsibility to ensure appropriate usage.

Appropriate and Purposefully Digital Learning Applications

Young children are becoming increasingly inundated with digital technologies. Research remains limited as to the educational benefits and the fears of continued over-usage and health concerns. The American Academy of Pediatrics 2020 policy statement concluded:

Multiple developmental and health concerns continue to exist for young children using all forms of digital media to excess. Evidence is sufficient to recommend time limitations on digital media use for children two to five years to no more than 1 hour per day to allow children ample time to engage in other activities important to their health and development and to establish media viewing habits associated with a lower risk of obesity later in life.

Children from zero to five years of age are at a time of critical brain development, building secure relationships, and establishing healthy behaviors. Many apps that may be listed as “educational” cause some confusion with parents and educators as they may have no evidence of efficiency and are often created with little or no input from specialists or educators. According to the Council on Communications and Media (2016): research suggests...

Both benefits and risks of media use for the health of children and teenagers. Benefits include exposure to new ideas and knowledge acquisition, increased opportunities for social contact and support, and new opportunities to access health-promotion messages and information. Risks include negative health effects on weight and sleep; exposure to inaccurate, inappropriate, or unsafe content and contacts; and compromised privacy and confidentiality. (Pediatrics November 2016, 138 (5))

With older children there is no one size fits all relationship between digital technology and positive growth and development. An individual *family media plan* should be designed that prioritizes and addresses sleep, health, temperament, age, developmental stage, physical activity, break time from screens, and many other families, educational and health goals. This will ensure

balance and safety with digital exposure. Younger children benefit from parental involvement with digital E-books that have interactive elements just as they would with print books. Older children need parental rules about media and boundaries on content as their usage leads to patterns of being “constantly connected”, issues with cyberbullying and sexting, sleep deprivation, and depression among many other risks associated with digital over-usage. The American Academy of Pediatrics (2020) primarily supports the parent-doctor relationship while the Department of Education guides teachers and families. Technology can be a tool to engage, motivate, and empower interactive learning experiences. Digital tools also have many benefits for tracking and monitoring progress and data. “Digital tools can provide multiple ways to engage your child in personalized learning. Learners can be motivated to learn in different ways, and a wide variety of factors can influence learning engagement and effectiveness.” (Department of Education, 2020). Digital content and learning platforms are designated by individual school districts, and the Department of Education clearly states “...you [the parent] are also responsible for guiding your child on how to use technology safely and appropriately.” Many parents today may not be aware of their expected responsibility for this.

Parents Role and Views in Digital Learning

Sergi et al. (2017) examined parents' perspectives on PDD's with children ages four to seven. From the parent's perspective, several themes of usage arise concerning daily habits and practice. Devices used at home are used for educational purposes, entertainment, and social networking or communication. Sergi et al., (2017) stated that PDD's are tools used to enhance language and literacy and should not take the place of social interactions. Home app usage on

PDD's in children three to five use multiple modalities such as images, music, writing, gesture, and speech; these multi-modal experiences appeared to contribute to children's enhanced literacy practices. Five families and five children were surveyed, observed, and interviewed and one notable routine mentioned was that the PDD's traveled with the children to restaurants and social gatherings. Parents reported it was to prevent them from being bored. All parents recognized the educational capabilities. The parents surveyed expressed concern over uncontrolled use and social interaction influence however they believed the PDD's helped improve memory, attention, reading, and math skills.

According to the Pew Research Center for Internet & Technology (2020), 96% of Americans own a cell phone of some kind. Nearly three-quarters of U.S. adults now own desktop or laptop computers, while roughly half now own tablet computers and roughly half own e-reader devices. Elish-Piper (2019), discussed how parent communication apps with schools and teachers helped enhance learning and engagement efforts. Specific apps helped to connect to the curriculum, extend learning and celebrate success. "As more teachers embrace using texting and social media to communicate and connect with their students' families, more robust and useful applications will continue to be developed." (Elish-Piper, L. 2019) To further parents' roles and participation in their child's use of technology, Eutsler et al. (2018), examined parents' perceptions based on gender and grade level PDD usage. Data showed that gender was significant with entertainment apps and devices, while grade was significant with learning apps. Boys used more entertainment apps and devices, in addition to more learning devices. As a result teachers, parents, and app developers need to be cognizant of the differences in gender and age usage in educational technologies. Parents in multiple surveys and interviews express concern

over screen time and negative effects while also noting concern for ‘falling behind’ academically amongst those who use technology more effectively and efficiently.

Teachers Roles and Views on Digital Learning

The introduction of technology into teaching and learning offers new and exciting opportunities for educators.

The use of mobile technologies in the classroom is a new practice with significant promising educational impact. Mobile devices may increase students’ engagement in learning and boost their confidence, critical thinking, and collaboration. Also, mobile technologies support students to engage in learning experiences for acquiring a solid understanding of core subjects apart from unleashing students’ creativity, making learning more enjoyable and offering both teachers and learners an opportunity to customize their classroom teaching and learning. (D’Angelo, as cited in Retalis, S. 2018)

The 1:1 integration has grown exponentially in recent years and considerably given the current pandemic situation. Retalis, S. described the benefits of technology integration from a teacher's perspective as enhancing motivation, supports presentations, strengthens reading ability, supports writing, cultivates creativity, optimizes scaffolding, and facilitates organization. There is only a minor concern of distracting influence and overuse for some students. In Retalis, (2018) study 1332 students, 455 parents, and 53 teachers participated in investigating iPad use, satisfaction, attitudes, engagement, and learning experience. Findings showed that students and teachers view 1:1 devices in an overall positive way acknowledging the learning potential of the tool while parents were more skeptical about engagement and over-usage.

Policy-makers, school administrators, and educators should bear in mind when introducing new technologies in the classroom (e.g., “1:1” iPad) that implementation should be well-designed and gradually delivered. In other words, teachers, parents, and students should participate in

workshops to realize and be familiarized with the functionalities of the tool. During the implementation, stakeholders should attend workshops to share their experience and learn how to make full use of its advantages. Retalis, S. (2018)

Marsh (2018) examined the use of tablet apps among children ages zero to five and how design features of such apps can lead to the support or inhibition of play and creativity. Results indicated that students are more satisfied and engaged with learning via an iPad where their parents remain skeptical. Students had an overall positive experience and opinion about learning apps and were excited to learn and engage with the tool where parents were not fervent supports. Further research was recommended to embrace the digital culture that is growing, stakeholders need to evaluate the implementation and encourage parent, teacher, and student workshops and training to take full advantage of 1:1 iPad potentials.

In Bolkan, (2017), 250 teachers were surveyed and felt they did not receive the necessary training to effectively utilize technology in the classroom. Furthermore, those same teachers also felt that the technology they were implementing, helped their students prepare for future careers. Forty one percent of teachers felt their students learned faster with technology. Sixty nine percent of teachers believed technology can be integrated to support any subject. Thirty one percent believe learning with technology results in higher test scores. Given continuous governmental grant monies in the area of technology in schools, teachers on the frontline are in the best position to identify opportunities and challenges that technology can bring to learning.

The app developers, software designers, and platform conglomerates play an equal part in the theoretical pedagogy framework of technology education and implementation in the classroom. Stevenson, (2015) "explores how the effective use of apps enable the learning process

to be visualized in ways that support meaningful and student-centered learning." (p.370) There is an overwhelming number of apps available to students and teachers, which has caused many schools to mandate a set of core apps for the content-specific learning process. The number of available apps is overwhelming and causes challenges in making meaningful use of learning apps. The potential of open-ended and constructive apps can fit into key stages of the learning process. Stevenson, (2015) further investigated how learner lead inquiry apps can encourage creativity and project-based learning models.

By designing the learning task as, in a way, independent to the technology, the teacher is arguably better equipped to carefully and purposefully select apps as cognitive stepping stones within the learning task, resulting in tasks that more consistently challenge students to develop a wide range of digital skills. Stevenson, (2015).

Teachers and learners are ultimately the best decision-makers on purposeful and effective learning app usage and their implementation.

Summary

Portable digital devices are present in the lives of young children in their learning experiences at home and school and the technology and applications are only continuing to grow at a rapid rate. Adults involved in the learning process have a vested interest in what positive and negative results digital devices have on young learners. At the same time, child choice and opinion matter in the decision-making process, and promoting student-lead application choices should be considered as well. The parent perspective and educators' perspective on digital learning align on many levels but leaves other areas of conflict to be explored.

Methodology

Hypothesis

This study will examine the teacher and parent perspectives on developmentally appropriate learning application usage with 1:1 devices in grades K-3. Parents and teachers have a variety of beliefs, attitudes, and knowledge with regards to educational applications used by young learners, but their goals remain the same; Both want to provide meaningful learning opportunities on 1:1 devices. It is important to bridge the gap and have reciprocal communication with regard to apps because they are being used both at home and at school. Applications used on 1:1 device must meet several qualifications to be considered developmentally appropriate for educational use. This needs to be researched and outlined for app developers, app purchasers, and app users. Using the quantitative and qualitative data from

surveys and interviews of parents and teachers will guide future rules, policies, and expectations for future app usage in the classroom and at home. More research about apps with regards to definitions, and guidelines will be set forth, and clear standards will be outlined in the design of apps for children grades K-3. The purchase and utilization of specific apps will be assessed by teachers and parents before purchase and use. Parents and teachers have *some* understanding of the benefits and risks of young children using portable electronic devices. There are very few studies that have examined the acceptance rates, the interest, and the attitudes towards the 1:1 iPad-based educational models by the various educational stakeholders, such as students, teachers, and parents (Retalis, 2018). As these views, opinions, and practices get examined, new policies and practices will be developed in the students' best interest. If the views, opinions, and practices continue to be divided between parents and teachers, students' learning will suffer and there will continue to be confusion at home and in school.

Guiding Questions

1. What are the attitudes, feelings, and knowledge of the educational apps being used by K-3 learners comparatively of teachers and parents?
2. How do teachers and parents define an application as developmentally appropriate.

Participants

The participants in this study will consist of all kindergarten, first, second, and third-grade teachers in the East Penn School District. There are currently 24 kindergarten teachers, 26 first grade teachers, 24 second grade teachers, and 26 third grade teachers that will

receive the initial survey. The researcher will use each class roster to select three families at random to participate. This will allow for a randomized sample of family participants from each of the seven elementary schools in the district. The elementary schools all vary on a socioeconomic level. The total teacher sample will be 100 and the total family participation will be 300. It is anticipated that that teacher participation will be greater therefore a larger sample of parent participants will be needed to maintain a credible sample size. (See Table 1.1) After an initial data analysis of surveys, of the 100 teachers, five will be chosen at random for an interview and of the 300 parents 15 will be chosen at random for further interview.

Table 1.1 Teacher Participation Breakdown

School	Kindergarten	First Grade	Second Grade	Third Grade
Alburtis	3	3	3	3
Jefferson	2	3	2	3
Lincoln	3	3	3	3
Macungie	4	4	4	3
Shoemaker	4	4	4	6
Wescosville	4	4	3	4
Willow Lane	4	5	5	4

Instruments

The research instrument used in this research will consist of a teacher survey which will contain 20 questions using a variety of Likert scales, semantic differential, and rating scales to best collect, measure, and analyze the views, feelings, and opinions of teachers. These scales will consist of data gathering information regarding the applications they currently use in the classroom (both district-mandated and personal preference). Teachers will be asked questions to analyze their choice and preference and knowledge behind student success, interest, and appropriateness. Parent participants will then be given a comparable survey consisting of parent-friendly verbiage with regards to applications their child uses for school and entertainment while at home. Parents will complete several scales and questionnaires to assess their knowledge of appropriateness, success, and interest. Finally, the selected participants chosen for in-person interviews will be asked three simple questions based upon data collected in the surveys.

Design

This action research study will analyze teacher and parent quantitative survey data and qualitative narrative interviews in order to draw comparisons between parent and teacher views and opinions about educational applications on student 1:1 device in kindergarten through third grade. This will help improve the knowledge and understanding and provide background for research-based training and necessary informative practices. Data analysis will also be used to

help guide teacher and administrator decision-making about developmentally appropriate applications being used in future school years by grade.

Procedure

1. The researcher will design a comprehensive survey for the participating teachers on a Google form and send it to them via their school email with a timeline for completion.
2. Participating teacher responses will include the necessary family information on three purposefully chosen family participants from their class.
3. Data from the teacher survey will be analyzed and the researcher will create a parent survey using similar questions with parent-friendly verbiage.
4. Parent participants will be emailed an explanation of the research and consent to participate along with their survey. There will be a timeline for completion and three attempts will be made to ensure participation rates are high.
5. Parent and teacher data will be analyzed and interview questions will be determined. The 20 interviews will be scheduled over the course of two months and the location and time can be determined by the interviewer. This flexibility will ensure participation rates are high.
6. Narrative data from interviews will be compiled and analyzed. The researcher will prepare the research report to present to the administration and also share out the data with the participating teachers and parents.

Data Collection Method and Analysis

Survey

The researcher will design two surveys with the audience in mind. Teacher surveys will include verbiage regarding current district-issued learning applications that are purchased for purposeful and meaningful learning as part of the curriculum on 1:1 iPads. Parent surveys will include many similar questions but also seek information regarding educational apps they may have purchased and used for educational purposes as well as what types of applications their child utilizes most for entertainment purposes. The questions will be designed using a Google form and emailed to participants. For data collection purposes, the questions will include Likert Scales, semantic differential, and rating scales in order to collect, measure, and analyze the views, feelings, and opinions of teachers and parents. The combination of structured and unstructured survey questions will assist in data collection presented in graphs, charts, and trends to be used in future district planning. The several open-ended, short answers will assist in the design of future interview questions.

Interviews

Data collected from surveys will be used to guide the researcher's development of more in-depth interview questions. Twenty interviews consisting of five teachers and fifteen parents will be conducted over a period of time, in person and following COVID guidelines and procedures. The interviews will be recorded and transcribed for later analysis. All participants will receive structured interview questions in advance and be allowed to participate in unstructured and casual conversations during the course of the interview as well. The data collected during interviews will be analyzed to guide the researcher's later presentation to the school district board.

Timeline

September

The proposed research plan will be presented to the researcher's building principal for approval. Following approval, an informal initial presentation of the proposed research plan will be presented during an East Penn School District cabinet meeting in order to access appropriate participants and parent's approval for participation and for initial waivers to be signed.

October

Google surveys will be sent to the 100 participating teachers in grades kindergarten through third grade via their school email address with a timeline for responses within a two-week timeframe. One follow-up reminder email to complete the survey will be sent following the initial first week. Once a response rate of at least 80 percent is achieved the parent survey will be created and adjusted to align similarly to the teacher's survey to maintain consistent and objective data.

November - December

The parents chosen by each teacher will be contacted via email with an initial introduction of the research, a consent to participate, and the parent survey attachment in a google document. Parents will also receive one follow-up phone call and a reminder email encouraging their participation. Once 80 percent participation is achieved the researcher will begin designing the appropriate interview questions and begin to schedule meeting times.

January-February

Interviews will be scheduled and conducted for both teachers and parents based on convenience, location, and COVID protocols. Maintaining flexibility during this timeframe is critical to the completion of all necessary interviews.

March- April

Data analysis will be conducted by the researcher and presentation materials will be prepared for presentation to the school district administrators. A summary of findings will be emailed to all participating teachers and parents and an opportunity for any last-minute thoughts or feelings will be considered.

May

A finalized report will be presented to the East Penn School District board and administrations with findings. Suggestions will be offered as to the process of selecting and purchasing specific educational applications to be utilized on 1:1 school devices as well as future recommendations for partnerships with parents and families regarding technology safety and usage. This is also a particularly key point in the district's future budget timeline to make necessary adjustments and purchases for the upcoming school year.

Budget

The time spent on the research proposal, development, and implementation is being donated by the researcher and will be conducted outside of contracted union time. The materials needed are minimal and cost-effective in that they will all be conducted electronically with very cost-effective means for presentation. With a minimal budget for paper copies of signed consents and presentation materials, a budget of \$400 will be sufficient. At the initial presentation to researchers building principle, it will be determined how those funds are to be requisition and paid.

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