

EXPERIENCES, FRUSTRATIONS, AND BARRIERS, OF IPAD USAGE IN THE SPECIAL EDUCATION: LIFE SKILLS CLASSROOM FROM EDUCATORS PERSPECTIVE

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Abstract

The purpose of this mixed methods study was to determine the barriers that special educator teachers encounter when using iPads within the Life Skills classroom. The research investigates the experiences, frustrations, and barriers through educators' perceptions of iPad implementation. The influence of these issues suggests why iPad usage is not a device that special education classrooms are using in a widespread daily manner. Exploration of iPads as an educational tool and as a communication device is also discussed, along with considerations of other communications systems such as Picture Exchange Communication Systems and Alternative and Augmented Communication Devices is considered. Recommendations for further possible research are also discussed.

Keywords: hand-held technology devices, iPads, Life Skills, special education, technology integration.

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1. Introduction

1.1. Background

School districts have spent millions of dollars wiring classrooms, installing smart boards, purchasing laptops and iPads so that students will have more access to technology. The intention is that all these devices will increase student learning. But is it possible that the opposite is sometimes true? Could technology in the classroom ever be getting in the way of student learning? [1, para. 1]

To remain current with the technology and become employable citizens, all students must engage in the use and integration of technology tools in schools [2], including students with special education needs. The U.S. Department of Education's program Race to the Top, from 2009 to 2015, provided grant monies to reform technology use and integration in public schools so as to "adopt new strategies to help struggling schools" [3] and, in turn, help struggling students. However, technology implementation has fallen behind in special education classrooms due to the feasibility of integration and use by students with severe disabilities

[4]. Life Skills students, those who need very basic training to function and interact within society, struggle with accessibility, portability, management and operating current forms of technology. Coupled with the limitations of fear of failure academically and using available technology, barriers for using devices such as iPads in the special education classroom [2] have created barriers for teachers and school districts.

A study by Chan, Lambdin, Graham, Fragale, and Davis [5], sought to compare the ease-of-use of iPads in the classroom to the need for prompting, instructions, and repetitive practice of hand-held-devices with individuals having developmental disabilities. This research design was limited to three adult participants who lacked technology skills due to the limited opportunity of use. A series of pictures, void of text, depicting the series of tasks were presented to the participants. Tasks included opening an iPad with a cover, converting the cover to a stand, unlocking the iPad for use, tapping on the Angry Bird game icon, tapping the play icon, selecting the level of play, playing the game, repeating the play level, closing the game, and putting the iPad away correctly. While the ease-of-use was a limitation for the students, it was noted that the barriers to both trial and error and task

improvement lead to greater participation among the participants [5].

According to Tim Cook, CEO of Apple, over 95 % of the 2014 market of classroom tablets was credited to the iPad. However, the need for research and research-based practices suggesting that “student achievement is higher with the iPad in the classroom than without” [6, para. 5] concerned many educators, including special education teachers. “If children who spend more time with electronic devices are also more likely to be out of sync with their peers’ behavior and learning by the fourth grade, why would adding more viewing and clicking to their school days be considered a good idea?” [1].

Special education teachers typically control technology device use in their classrooms. Such control is related to the time of use, storage space, skill development, and applications of uses for developmentally delayed students, specifically Life Skills students. Technology integration through purposeful lesson planning into the classroom routine often included incremental task development as described in the work of Chan, Lambdin, Graham, Fragale, and Davis [5]. With the increase expectation of technology use and integration in the classroom, an aspect that beckons further research is the use of hand-held-devices for special needs students in a Life Skills classroom setting [4].

“The published studies of classroom iPad use — in special education, specifically — are eye-opening. But not because they’re ‘clear’. Because they’re all so ... *tiny*. The number of studies is small. Their sample sizes are miniscule. And the measurable effects are pretty small too” [6, para. 7]. “To understand just how limited these studies are, keep this in mind: 6.4 million students in the U.S., aged 3-21, have some kind of learning disability” [6, para. 9], or approximately 13 % of the population of all public-school children. However, when considering whether iPads as assistive technology devices are successful in a special education classroom, the availability of research conducted on/by/special education teachers who use iPads in their classrooms is even more scarce than that of iPad usage in the general education classroom. Equally lacking is research regarding the barriers teachers face with respect to iPad usage with special needs, Life Skills students in the classroom. The intent of this research was to uncover the barriers that special education teachers encountered in the use, integration and application of iPads within Life Skills classrooms.

1.2. Statement of the Problem

Hand-held-devices, specifically iPads, offer special needs students the opportunity to engage in meaningful learning through purposeful technology integration. While the iPad can be transported more easily and placed in multiple positions to accommodate numerous types of students’ disabilities, research into the barriers and feasibility of the use of iPads with students with profound learning disabilities in Life Skills classroom settings has led to this study.

1.3. Research Questions

1. What are the perceptions of Life Skills teachers with respect to iPad use and integration in a Life Skills classroom in a rural East Texas school district?

2. What are the barriers Life Skills teachers incur with respect to the use and integration of iPads in a Life Skills classroom in a rural East Texas school district?

2. Literature Review

Research in the area of implementing hand-held devices (HHD) such as iPads into the general education classroom [7–10] has indicated increases in student academic performance. Grinager [8] cited over 30 sources and debated the issue of whether the use of iPads increased student achievement. However, the question remains, whether the use and integration of HHDs helps foster academic achievement, independence, and confidence for students in the special education setting as well. A limited number of studies [4, 11, 12] assert the use of such devices had a positive impact on special needs students.

2.1. Benefits of iPads

One of the benefits of using iPads and HHD with special needs students is the size of the iPad [11, p. 1185]. The iPad is an ‘all-in-one device’ that can be placed on a tabletop or on a lap without power cords, separate monitors or keypads. Research by Still, et al. [11] reviewed 16 studies investigating the use of HHD devices to teach functional requesting skills. The researchers found that smart phones and iPads were used as Alternative Augmented Communication device (ACC), a term that encompasses communication methods (other than oral) used to supplement or replace speech or writing for those with impairments in the production or comprehension of spoken or written language [11].

Still, et al. described the use of a Picture Exchange Communication System (PECS), a program designed for non-verbal and autistic students to develop a system of communication through the exchange of pictures for the actual tangible item. The program allowed students to select flash-card type pictures to communicate their basic needs within real-life scenarios. The portability component of an HHD was discussed in [11] in comparison to the PECS books which were cumbersome in size and weight. Comparisons in the manner of use between the iPad and the PECS were also discussed, including the intense training to use the PECS system before implementation with students having disabilities. Still, et al. considered how HHD devices such as iPads assisted students who had significant cognitive difficulties, lacked manual dexterity, or struggled with the use of traditional keyboards. Thus, iPads and other HHD were viable tools for those with nonverbal communication issues or delayed speech and language development as a means to communicate.

Other benefits concerning the integration of iPads in special education classrooms were increasing vocabulary acquisition as compared to PECS and the decreased time needed to set up and maintain as compared to traditional computer use [11]. Once set up, HHD provided numerous applications for special needs students including time or daily routine trackers, schedulers, or monitoring progress toward goals. Tracking time on tasks or task completions

either by teacher manipulated or student operated touch system on an iPad allowed more opportunities for the students' access and accountability. Desai, Chow, Mumford, Hotze, and Chau [13] found that a student's increased communication skills were increased by 13 % through the use of the iPad applications for AAC compared to that of traditional ACC systems.

The use of iPads and HHDs combines visual, sound, and touch components. These components provide opportunities for special needs students with sensory input and expressions of knowledge and thought. Shah asserted that "technology can compensate for the special needs kids in a way that traditional media cannot compensate" and thus, "provide a means of communicating in greater depth" [14].

Shah discussed financial considerations for school districts regarding purchasing iPads or other HHDs. While older forms of assistive technology and communication devices may be still available, school districts must consider the expense of newer HHDs versus the repair costs of older devices, or whether the older devices function in the world of updated Internet speeds and overall compatibility concerns. The capability to purchase research-based applications for students and quickly download the applications for student use, especially based on students' disabilities, suggests school districts invest in long-range sustainable technology purchases [14]. "Due to more the low cost of the apps, there is also more flexibility in choosing tools to assist students" [4].

Shifting control of HHDs to special needs students provides a "sense of independence many children with disabilities may never have experienced before" [14]. Desai [13] described "societal familiarity" with respect to integrating tablet-type devices in the classroom. Higher yields of student engagement were found because special needs students were allowed greater independence in developing skills accepted within society. Greater motivation to acquire more skills and become critical thinkers evolved which allowed some special needs students to bridge cognitive and physical gaps due to their disabilities [14].

Leisure activity choices are often not given to special needs students because of the limitations in providing activities in which they can participate. Chan [5] found that HHDs fostered more independent choices about leisure activities. According to Chan, "access to leisure and recreational activities has a positive impact on quality of life" [5, p. 253]. Helps and Herzberg stated that "the use of an iPad 2 provides numerous choices of activities" [15] for students with multiple disabilities. Helps and Herzberg also stated, "instruction in the expanded core curriculum, including leisure activities, is critical for students with multiple disabilities" [15].

Flower [16] discussed the benefits of iPad use for emotionally and behaviorally disabled students in an institutional setting. Increased attention to task completion was reflected in greater skill development through independent practice due to iPad integration into the learning environment. The need and desire for students to be able to independently practice skills both academically and functionally is very difficult to produce for more than one student at any given

time, let alone for an entire class or small groups of students within a class. Flower found that "students with disabilities are more likely to make maximum educational growth when teachers carefully select practices that encourage active engagement" [16].

2.2. Disadvantages of iPads

The incongruence between HHD creators not having instructional backgrounds and the students, parents, and teachers who use the applications in the classroom and at home was investigated by Miller and Doering [9]. They found that the creators of the applications had expertise in technology and gaming backgrounds; thus, the design of the applications were more game related than educational in format. The lack of instructional background and experience reduced the quality of educational applications to games for fun with minimal educational benefit for the students who used them.

According to Cumming, Strnadova, and Singh [17], even though there is widespread support for the use of HHDs and iPads in classrooms, there was not enough wide empirical evidence to support their everyday use. Their research concluded that iPads helped students become independent learners, increased technology use skills and made learning a "fun" process [17, p. 170].

3. Methodology

This study was conducted using mixed methods utilizing an embedded design. In this design, quantitative data were collected and qualitative interviews were used as follow-up.

3.1. Participants

The research was limited to Kindergarten through fourth grade special education Life Skills educators who taught or worked in self-contained classroom settings in a rural public school in East Texas. Self-contained Life Skills classrooms typically have fewer students who require specialized support and intervention due to their extreme cognitive and/or physical disabilities. The Life Skills instructional classroom is comprised of at least one certified special education teacher and at least one instructional assistant who helps provide educational support. All participants volunteered to take part in this study.

3.2. Instrument

The survey instrument used was created by the researcher. Quantitative questions collected demographic information including instructional job role, years of experience teaching special education classes, and the amount of iPad usage time per week in the educational setting. The question regarding frequency of use used a Likert scale system: Never, Rarely (once a month), Sometimes (every two weeks), Occasionally (weekly), and Frequently (daily). Three open-ended questions were verified for reliability through piloting the proposed questions with peers. Open-ended qualitative questions sought information and opinions regarding experiences, concerns, frustrations, revelations, and barriers faced by the teachers when using iPads in the Life Skills classroom.

Participants were given the opportunity to engage in face-to-face interviews, after completing the initial survey, to provide clarification of their responses. Participants were coded with arbitrary names to protect their identity, as required the Institutional Review Board.

4. Data Analysis

The participants included two instructional assistants, two student teachers, and three certified special education teachers. Table 1 shows the number of participants per type of certification and their number of years of classroom experience.

Table 1

Number of participants by type of certification and years of classroom experience

Number of Participants	Types of Certification	Years of Experience
2	Student Teacher 1 & 2	>1
3	Teacher A, Instructional Assistants 1 & 2	5
1	Teacher B	10
1	Teacher C	20

The survey question for the frequency of iPad use gathered data through Likert scale responses. The participants had the following pre-coded selections: Never, Rarely (once a month), Sometimes (every two weeks), Occasionally (weekly) and, Frequently (daily). The amount of iPad usage in the classroom per week by the certification type of the participants is shown in Table 2. Teacher A, who has taught for five years, has used the iPad in the classroom daily. Both student teachers and both instructional assistants have used the iPads with students weekly. The teachers with ten and twenty years of experience have used iPads in the classroom every two weeks.

Table 2

Frequency of iPad use by participant

Participants	Rate of Use	Number of Days Used per Week
5-year Teacher (Teacher A)	Frequently	5
Student Teacher 1	Occasionally	2
Student Teacher 2	Occasionally	2
Instructional Assistant 1	Occasionally	1
Instructional Assistant 2	Occasionally	1
10-year Teacher (Teacher B)	Sometimes	1 time every two weeks
20-year Teacher (Teacher C)	Sometimes	1 time every two weeks

4.1. Educators Using iPads

The qualitative research questions were designed to gather educator's opinions on iPads use and integration in the Life Skills classroom, including the barriers they faced. Participants provided explanations for their reasoning.

4.2. Experiences

The experienced Teacher A stated, "I have seen students learn many skills: counting, sorting, switch use, cause and effect, colors, letters, how to write, words associated with letters, recreation/leisure just to name a few" as benefits for using iPads in the Life Skills classroom. Student Teacher 1 stated, "There are a lot of good applications for tracing to help with fine motor deficits". But as both teachers had mentioned, it has taken trial and error to find what works for them as teachers and what works for their students.

4.3. Breakthroughs

Teacher B affirmed, "It has helped motivate some of the students I have had in the past because most programs give an automatic response, whether right or wrong". As exposed by Student Teacher 2, Life Skills students "get a sense of accomplishment and level of enjoyment" from getting to use the skill leveled applications on the iPads. The ability of students to practice in an independent manner unique to their own skills was a positive impact expressed by all.

4.4. Frustrations

All participants described their frustrations regarding iPad use and integration in the Life Skills classrooms. Charging, equipment failure, and keeping equipment clean was a consistent problem in the Life Skills classrooms. Drooling by some special needs students was a common side effect of several disabilities, including Cerebral Palsy, Autism, and Downs Syndrome. Drooling, contamination due to body fluid, was a hazard when working with iPads for this group of students. The drooling does cause unsanitary messes on the iPads and could cause equipment failure, touch screen issues, speaker failure, port and outlet issues. Precautions must be taken when sharing iPads to avoid body fluid exposure between students. A plausible solution was to insert the iPad in a quart-sized Ziploc bag. However, due to overuse or misuse by the students, the bags can be torn and replaced. Both Student Teachers 1 and 2, and Instructional Assistant 1 made similar remarks that the cleanliness of iPads was less than desirable and required vigilance to keep equipment working properly.

Updates of applications and passwords for uses with iPads like Apple Id account was a continual nuisance for both teachers and instructional assistants. Instructional Assistant 2 commented, "It's time consuming to verify passwords and updates when one merely wants to open and use an already downloaded and installed application" before a student can use the iPad. The Teacher C stated, "Frustrations are not having wireless available to access specific applications, and the ability to download cost associated applications". Within the district this research was conducted, the iPads used have a shared Apple Id account from the

school district's special education department. The shared account allows for quicker purchasing of applications for iPads within the educational setting. The teachers and instructional assistants noted that the district frequently changes the password due to compromised security. It is time consuming for the district's special education technology administrator to reset and then reissue the new password to all the teachers and instructional aides.

Some students become disruptive because they saw their peers using the iPads during class. Certain disabilities limit students' understanding with the devices and lead to much distress in a Life Skills classroom. As Teacher A stated, "With most students, especially AU [autistic] students, getting off the iPad is a real challenge. The iPads I have are older so they do not have the lock-the-screen option and the students learn quickly how to get out of what I want them to be working on". Student control over devices and being able to use the iPad in a preferred manner was a constant struggle with some special needs students. Students can, on some of the older iPads, close out and restart applications, other students are clever enough to watch teachers open and access certain applications and figure shortcuts through programs and applications which allows them to skip through material a teacher originally intended for a student to use and learn.

4.5. Barriers

Obstacles encountered with respect to iPad use and integration into the Life Skills classroom included: planning and developing technology rich lesson plans; developing appropriate technology goals for each student based on their individual disability; incorporating technology into lessons, routines, and each student needs; and meeting the specific academic knowledge and skills required by the student's grade level curriculum. When the teacher planned to use a specific application during a lesson, additional planning time was devoted to acquiring the individual application, installing the application, and learning the application before sharing it with the students. Additional time was necessary for the instructional assistant to acquire the skills to use the application also.

Another barrier encountered was the fear of student unlimited access to unrestricted material. Turing control of a device that has Internet capabilities to a fourth grader with severe cognitive disabilities unleashes the possibilities that the student may stumble onto web pages that should be restricted from children. While school districts install technology securities on web browsers "...some children are unable to handle the responsibility of using an iPad appropriately" [14]. While this barrier was not observed during this study, both student teachers were concerned with the possibilities that it could happen and the questions that could potentially arise from parents over access to the inappropriate websites from the iPad.

There was a fear of students appearing as if they were just playing games and not accomplishing academic work or their educational goals. All three teachers expressed this fear. Both student teachers noted that type of fear can be a barrier in the

uncertainty of expectations of student performance ability and the level of teacher engagement. Student Teacher 1 indicated that it may appear to those outside the Life Skills classroom, that on the surface, the teacher is using the iPads as a crutch or toy. "Many professionals have expressed that iPads offer too much self-stimulation and that they may be used as babysitters rather than educational value" [14].

5. Discussion

5.1. Summary

This research focused on unveiling the experiences, frustrations, and barriers that educators encountered when using iPads within the Life Skills classroom. Special education teachers, student teachers, and instructional assistants described their experiences. Health concerns, technology problems, disruption to the classroom, time constraints, and safety issues regarding the use and implementation of iPads in Life Skills classrooms were primary frustrations and barriers.

This research shed light on the discrepancies between intended use and actual usage of iPads within the Life Skills special education classrooms. Using iPads as a reward verses an academic use was not listed as a barrier by any of the participants. Only one teacher used the iPad intentionally as an educational tool. Teachers B and C noted that they use iPads as a reward or punishment. Students must either earn the use of the iPad or keep from losing the use of the iPad as a motivator for some of the special needs students. Teacher C stated, "They can be good reinforcers for behavior and for students to finish their work". Student achievement on the iPad then is connected to their level of appropriate behavior or completion of assigned work.

The questions about iPad usage in a Life Skills classroom are still not completely resolved, due to the individual nature of the students within the Life Skills classroom. Thus, one application may work with one student and may not work with another in reaching that students' goals. The sheer complexity in the varying levels and types of disabilities hinders iPad usage in becoming universal for all special education students.

5.2. Implications for Future Research

This research was conducted at one school, within one district in East Texas. To know and understand the full implications of iPad usage within the Life Skills further research must be conducted. Determining the whole scope of iPad usage in the Life Skills classroom and the implications it has with teachers in mind may be completed by compiling a meta-analysis.

Teacher experience may affect the ability to manage, use and integrate the use of iPads into lesson plans. Familiarity or lack of experience with the technology and/or applications may present issues for instruction and student use. Teacher familiarity with proven tactics of Picture Exchange Communication System (PECS), Augmented Alternative Communication (AAC), or other teaching tools may influence the frequency of use of iPads, which, in turn, may or may not be due

to the level of experience of an educator. Educators encounter many issues in a special education classroom, including the use and integration of iPads.

5.3. Conclusion

New technology will lead to more advancement in the classroom and raise more questions regarding changes in the education environment. Educators are on the forefront of decisions regarding the use of Hand Held Devices, including iPads, in the classroom. However, economic pressures for wide-spread acceptance of technology in schools will continue to effect special education classrooms, including Life Skills.

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ИСПОЛЬЗОВАНИЕ IPAD В ОБУЧЕНИИ УЧАЩИХСЯ С ОСОБЫМИ ОБРАЗОВАТЕЛЬНЫМИ ПОТРЕБНОСТЯМИ: ОСНОВНЫЕ НАПРАВЛЕНИЯ, ТРУДНОСТИ И ВОЗМОЖНЫЕ ПРЕПЯТСТВИЯ

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Аннотация

Цель данного исследования заключалась в определении как возможностей использования iPad в работе с учащимися, требующими специального обучения или являющимися инвалидами детства (Life Skills students), так и препятствий, с которыми сталкиваются учителя-педагоги при применении этих устройств. В статье рассмотрен опыт применения iPad педагогами, работающими в специальных классах с детьми-инвалидами в государственных общеобразовательных школах в штате Техас, США. Определены основные направления применения планшетных устройств на занятиях, возникающие при этом трудности, а также возможные препятствия в использовании данных устройств. Результаты исследования показывают, что, несмотря на наличие определенных преимуществ, iPad не является учебным инструментом, который должен использоваться в классе

с детьми-инвалидами ежедневно. Мобильные устройства на примере iPad рассматриваются и как учебный инструмент, и как средство для обмена информацией. В процессе исследования учитывались возможности и других технологических устройств для работы учащихся с изображениями и информацией. В заключении статьи намечены возможные направления дальнейших подобных исследований и рекомендации для них.

Ключевые слова: мобильные устройства, iPad, учащиеся-инвалиды (Life Skills students), специальное образование, применение технологий в обучении.

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