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Message from the Editor-in-Chief

Dear Colleagues,

TOJDEL welcomes you. TOJDEL would like to thank you for your online journal interest. We are delighted that almost 200,000 academicians, teachers, and students from around the world have visited for eight years. It means that TOJDEL has continued to diffuse new trends in distance education. We hope that the volume 8, issue 2 will also successfully accomplish our distance education goal.

TOJDEL is confident that readers will learn and get different aspects on distance education. Any views expressed in this publication are the views of the authors and are not the views of the Editor and TOJDEL.

TOJDEL thanks and appreciate the editorial board who have acted as reviewers for one or more submissions of this issue for their valuable contributions.

TOJDEL will organize IDEC - 2020 International Distance Education Conference (www.id-ec.net) at Cyprus International University. This conference is now a well-known distance education event. It promotes the development and dissemination of theoretical knowledge, conceptual research, and professional knowledge through conference activities. Its focus is to create and disseminate knowledge about distance education. IDEC – 2019 conference book has been published at http://www.id-ec.net/idecpubs

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TOJDEL is guided by its editors, guest editors and advisory boards. If you are interested in contributing to TOJDEL as an author, guest editor or reviewer, please send your CV to tojdel.editor@gmail.com

April 01, 2020
Prof. Dr. Aytekin ISMAN
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BLENDED LEARNING - A STUDY ON STUDENT'S PERCEPTION ABOUT SUITABILITY OF THE FRAMEWORK FOR HIGHER EDUCATION

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Abstract: In today's digital era, use of technology and web based means of communication have provided an opportunity to educators, all over the world to investigate the most suitable learning environment which may cater the needs of diverse learner. Modified learning environment which incorporates the benefits of traditional as well as modern learning is the need of hour.

New opportunities for learning and engagement in life are offering of globalization and technology which is continually altering our views of education. Technology enables learning extend beyond the classroom walls and facilitates better access to learning resources. Blended learning approaches have amplified the need for teachers, students and the wider community to take advantage of learning opportunities afforded through improved personalization, collaboration, and communication enabled by learning technologies. Blended learning has many different forms and it will continue to evolve. New practices will be introduced to increase its reach and effectiveness. It should not be viewed as a single model but as an approach that shares the ultimate goal of the provision of better educational experiences and outcomes. Blended learning provides flexible, cost effective and time saving for the learners and teachers.

The main aim of the study is to find out the perception of students towards Blended Learning. Survey method was employed for this research. The researcher has chosen 75 PG students for the study. The researcher found that median is 4 for all the structured questions used in the questionnaire. Outcome has absolute characteristics irrespective of gender. Hence blended learning is a suitable and effective method for the better learning in higher education.

Keywords: Blended Learning Approach, Digital era, modified learning environment,

INTRODUCTION

Over the period of time education systems undergone various changes which result in various learning styles adopted by the learners. Advance technology facilitates to modernize the way information is learnt and present to the people. In earlier decade, students learn in traditional setting where the instructor-led approach was used. Traditional classroom setting, provide access to the experts, involved students in questions and discussion. They are exposed to social interaction which provides them an opportunity to learn from others. In another case some students prefer an individualized or less structured environment and need self-paced learning material. Various learning styles of students need to be balanced by the educators which is the biggest challenge. By adapting traditional and modern education systems and techniques, it is possible for an educator to cope with emerging challenges in education.

There is always a teething trouble for the students when they come across various concepts, principles and processes, as it is essential for them to understand, memorize, rememorize and do it. Blended learning (BL) facilitates students to study and make them capable of changing their attitude towards learning. Researcher selects the topic to provide a suitable model to the education institute to implement blended learning in their institutes.

1. BLENDED LEANING

Blended learning is a combination of more than one method of delivery. By combining different modes of delivery educator can optimize the learning outcome. Blended learning entrenched the idea that learning is not just a one-time event rather it is a continuous process where learner is involved. Blending always provides various benefits over using any single learning delivery medium alone.

Blended Learning is an approach of meeting the challenges of tailor-made learning and development according to the needs of individuals by assimilating the innovative and technological advances. Blend of online learning with traditional learning offers interaction and participation in best manner. It helps in bringing traditional physical classes with elements of virtual education together.

1.1 Blended Learning Involves
- Face-to-face education involves traditional classroom learning.
- E-Learning is learning utilizing electronic technologies to access educational curriculum outside of a traditional classroom.
- **Self-Paced** Courses are available to watch or listen to on your own time and at your own **pace**, with no deadlines or expiration dates
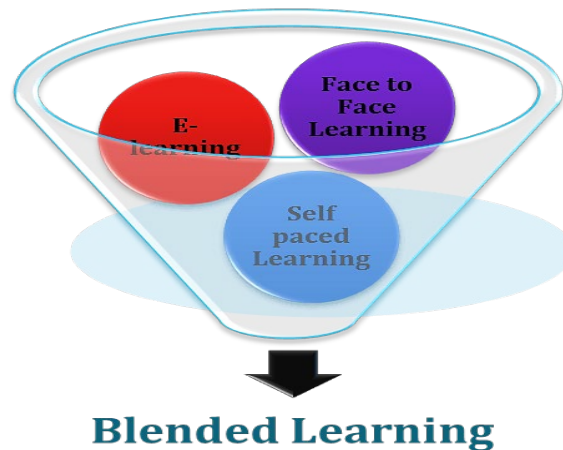
Characteristics of Blended Learning

1.2 The Benefits Of A Blended Learning Approach
- Inclusion of more differentiated/personalized instruction.
- Increased access to resources, experts and learning opportunities.
- More authentic and student driven tasks being incorporated into the curriculum for higher student engagement.
- Greater opportunities for collaboration (especially beyond the classroom and involving the wider school community)

1.3 The Advantages Of Blended Learning

▪ From a pedagogical perspective, blended learning aims to incorporate the best aspects of face-to-face classroom learning experiences with the best of mobile and online learning experiences. It is an opportunity for students to practice technology skills in navigating online course materials and creating their own digital content for assessment

▪ An increase in learning outcome measures and lowering of attrition rates compared to fully online courses. The ability to reserve face-to-face time for interactive activities, such as higher-level discussions, small group work, debates, demonstrations, or lab activities

1.4 Challenges In Implementing Blended Learning Strategies:

BL comes with number of challenges for teachers and students to implementing, some of them are :

- Developing blended learning pedagogy
- Technological challenges
- Student preparation/support and transition
- Assessment considerations
- Culture and innovation.

2. OBJECTIVES OF THE STUDY:
- To determine the students' perceptions toward BL in terms of its suitability in higher education
- To study the student's perception towards blended learning process, feasibility, ease of using MOODLE in higher education and content used in Blended learning methods.

3. PROBLEM WITH TRADITIONAL EDUCATION METHODS
In recent past blended learning grabs the attention of researcher and educators. Tradition chalk and talk methods has the following issues higher education-
- Learning style of the learner changed due to fast pace technology
- Unable to provide hands on experience
- Lack of relevancy with the need of industry
- Availability of good educators
- Quality of institutions
- Excessive competition
- Lost focus of inculcating values and building personality
- Discourages deviances
- Lack of student's involvement and low attendance in class

To address these issues blended learning can provide suitable solutions. Researcher aims to study the perception of students in higher education towards Blended Learning pedagogies.

4. RESEARCH METHODOLOGY:

This study was conducted under the three parameters-

a. Perception towards blended learning process,
b. Feasibility,
c. Ease of using MOODLE

in higher education and content used in Blended learning methods. In the present study, the investigator used the survey method. Structured questionnaire is designed to collect the information through google forms. Google form link were send to 120 students and 60 copies of questionnaire were distributed manually. Out of which 50 responses were collected through Google forms and 25 responses were collected through manual distribution of the questionnaires. Analysis is done with the help of descriptive statistics.

In the present study, students studying in MBA from one of the leading institute were chosen for the study where BL is implemented in various courses. Out of 180 students 75 respondents submitted their responses. Random sampling method is used for the sample selection.

5. DATA ANALYSIS

Table 1- Distribution Of Students According To Gender

Sr. No	Gender	Respondents
1	Male	31
2	Female	44
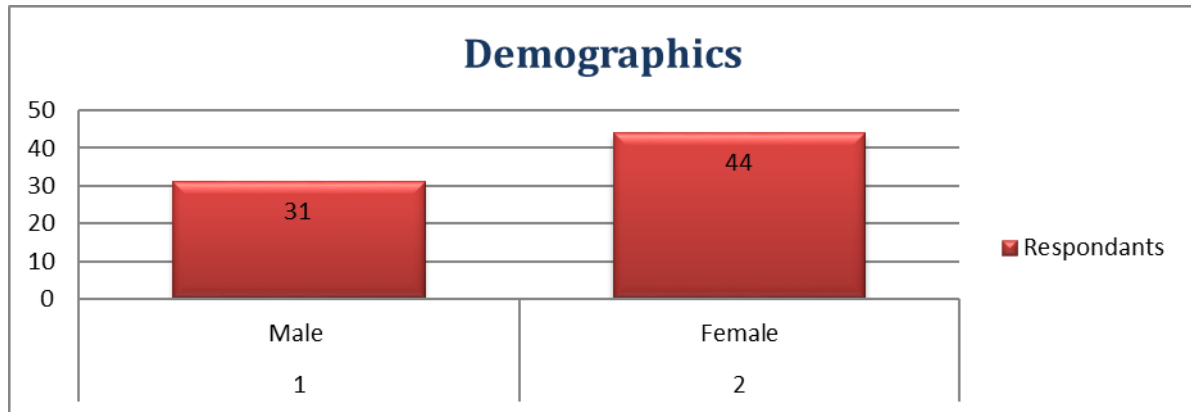
Figure 1- Distribution of Students According To Gender
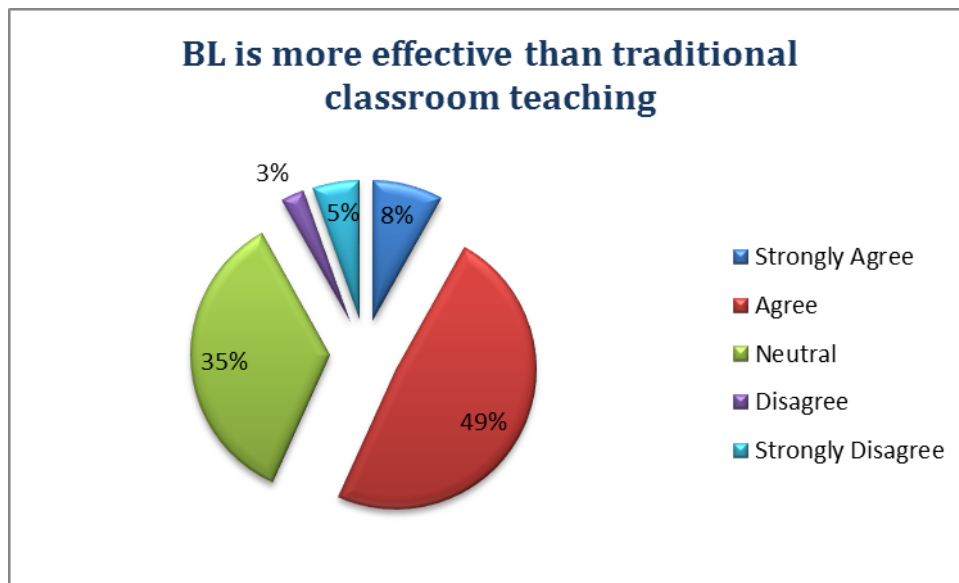
Figure 2- BL is more effective than traditional classroom teaching

The above graph shows that 8% students strongly agree and 49% students agree that blended learning is more effective than traditional classroom teaching. 57% students are of the opinion that BL is more effective.
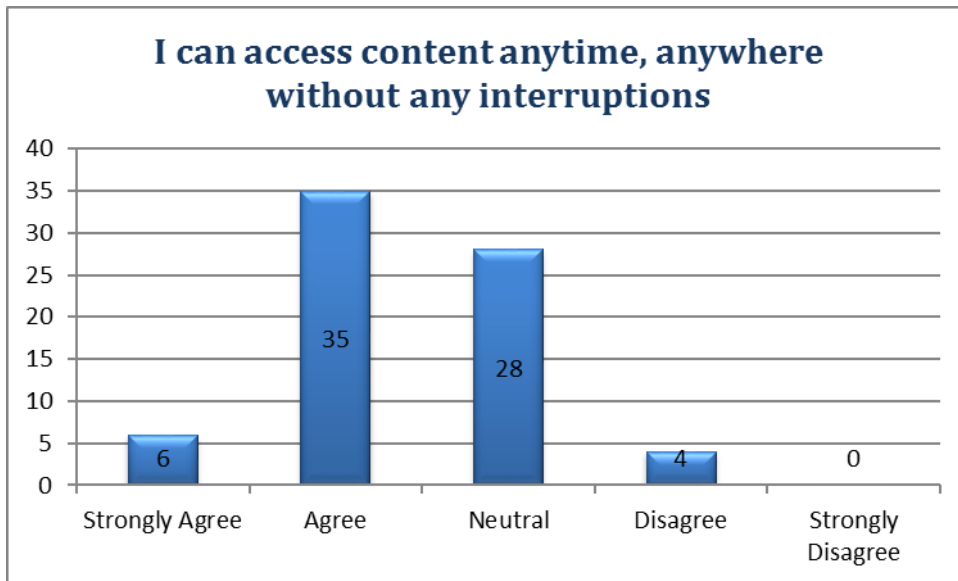
Figure 3- I can access content anytime anywhere without any interruptions

The above graph shows that 60% students are of the opinion that BL facilitate students to access study material and learn the topics of the course anytime, anywhere.
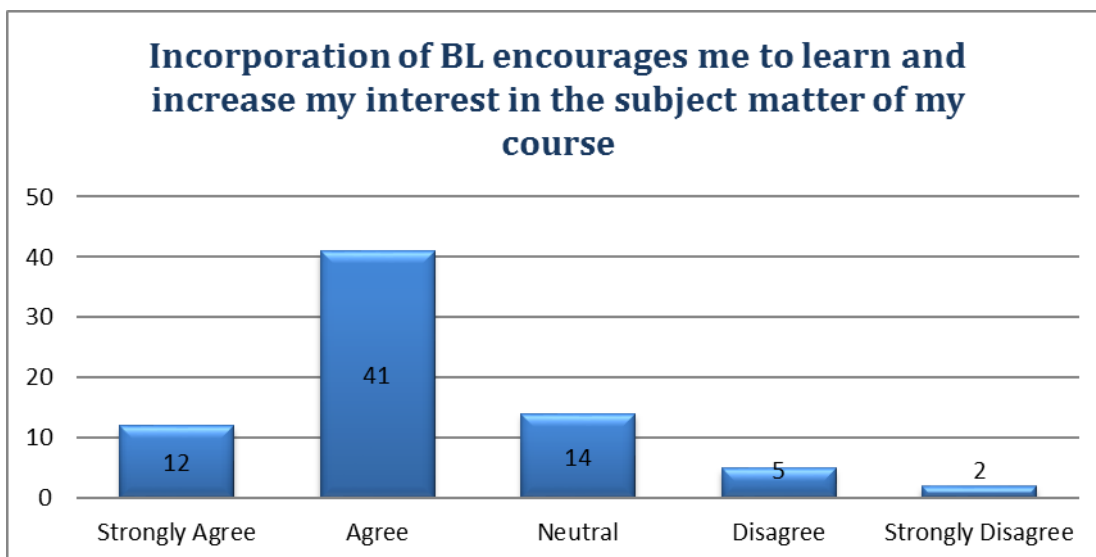
Figure 4- Incorporation of BL encourages me to learn and increase my interest in the subject matter of my course

The above graph shows that 71 % students are of the opinion that BL increase their interest in the subject by providing them access to the content anytime anywhere without any interruptions
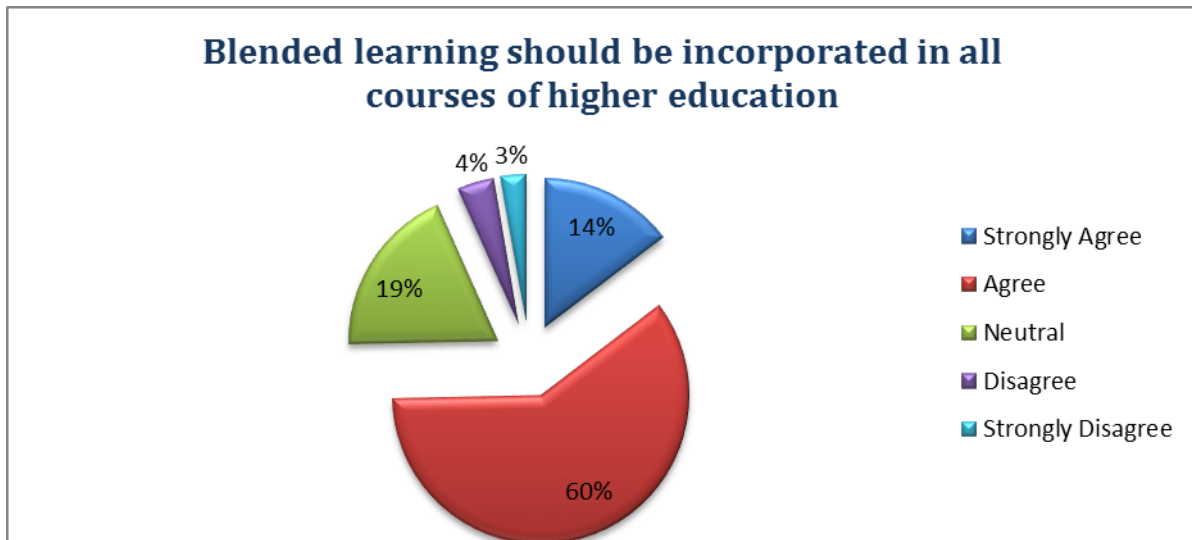
Figure 5-Blended learning should be incorporated in all courses of higher education

The above graph shows that 64% students are of the opinion that blended learning should be incorporated in higher education.

Table 2- Present The Students' View On BL Process

Frequency distribution of perceptions of ease of use (N=75). Median score of 3 indicates neutral stand and above 3 indicate agreement with the statement

Sr. No.	Questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Median
1	BL should be incorporated in all courses of higher education	11	45	14	3	2	4
2	Incorporation of BL encourages me to learn and increase my interest in my course	12	41	14	5	2	4
3	BL is less stressful than traditional classroom teaching	13	26	25	2	8	4
4	BL is more effective than traditional classroom teaching	6	36	26	2	4	4
5	BL helps in effective utilization of time	9	43	18	2	2	4

Interpretation-From the above table it is observed that median is 4 for all the questions and outcome is towards absoluteness, hence we can conclude that perception of the students towards blended learning process is positive. Blended learning should be incorporated in higher education.

Table 3- Present The Students' View On Ease Of Using BL

Frequency distribution of perceptions of blended learning process (N=75). Median score of 3 indicates neutral stand and scores above 3 indicate agreement with the statement

Sr. No,	Questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Median
1	Online learning is easy from learning perspective	2	41	25	6	0	4
2	Online learning is mode is user friendly	1	41	27	4	0	4
3	I can access content anytime, anywhere without any interruptions	6	35	28	4	0	4

Interpretation- From the above table it is observed that median is 4 for all the questions, outcome is towards absolute characteristics, and hence we can conclude that perception of the students towards ease of using blended learning is positive. Blended learning is easy to use, learn and also convenient as they can accesses the content anytime, anywhere without any interruption

Table 4- Present The Students' View On BL Contents

Frequency distribution of perceptions of blended learning process (N=75). Median score of 3 indicates neutral stand and scores above 3 indicate agreement with the statement

Sr. No,	Questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Median
1	BL increases focus on topics of study	2	48	20	3	0	4
2	BL provides illustrative content for the study	5	51	15	2	0	4
3	I get opportunity for self-pace learning	18	40	15	0	0	4
4	The online activities on fulfill our course objectives	13	32	24	4	0	4
5	BL help me to learn and increase my interaction with my classmates which provide better learning experience.	14	43	14	1	1	4

Interpretation- From the above table it is observed that median is 4 for all the questions outcome is towards absoluteness, hence we can conclude that perception of the students towards learning content delivered through blended learning is positive. Blended learning helps to focus on particular topics. Self-paced learning help students in understanding the concept better and increase their interaction with peers. Peer interaction helps in better learning experience.

6. FINDINGS OF THE STUDY

This study was done under the three parameter perception towards blended learning process, feasibility and ease of using MOODLE in higher education and content used in Blended learning methods. Structure questionnaire was used for the study. From the analysis of the data, it was found that for the entire questions median value is

4, which is showing that outcome has absolute characteristic irrespective of gender. The student's perception towards blended learning is very positive. Blended learning should be used in the higher education.

7. CONCLUSION

Teaching and learning is one of the areas in education which has been influenced by the rapid rate of innovation in technology. It describes a blended learning approach in teaching application of integration. The Blended learning approach used consists of face to face instruction, exercises from textbooks and developed courseware which was used in the tutorial class and also made available on the e-learning. Results obtained from the study involving the Blended Learning (BL) approach have shown that students demonstrate positive perceptions towards learning. Study also reveals that students are optimistic about incorporation of BL in Higher Education. Therefore, with the help of technology, Blended Learning can be used as an alternative approach in teaching and learning in order to motivate students.

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COGNITIVE MAPPING FOR ILOOKOUT FOR CHILD ABUSE: AN ONLINE TRAINING PROGRAM FOR EARLY CHILDHOOD PROFESSIONALS

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ABSTRACT
This article delineates the theory and framework for an innovative child abuse training program for mandated reporters called '*iLookOut*'. *iLookOut* is an online learning delivery system that utilizes mastery learning and self-determination theory in the Core Training program, along with spaced retrieval and retrieval practice in a follow-up micro-learning program that reinforces learning from the Core Training. A cognitive mapping model provides the structure for documenting and organizing the learning content in both the Core training and the follow-up micro-learning program. The article provides a conceptual framework for designing and implementing effective and efficient online learning programs.
Keywords: distance learning; cognitive mapping; learning; engagement; online learning

INTRODUCTION
There are relatively few studies of Early Care & Education (ECE) professionals' child abuse reporting practices, particularly compared with published studies on other mandated reporters who have high levels of contact with children (e.g., teachers, nurses, doctors). In those that have been done, ECE professionals are less likely to have ever reported child maltreatment compared to other professionals who work with children (Zellman & Bell, 1990); this was due in part to the minimal education ECE professionals received about child abuse and what regarding the level of concern and/or circumstances warrant reporting (Alvarez, Kenny, Donohue, & Carpin, 2004; Kenny, 2007; Carter, Bannon, Limbert, Docherty, & Barlow, 2006).

The small body of quantitative and qualitative research examining reporting experiences of ECEs (including kindergarten and pre-school teachers (Sundell, 1997; Bishop, Lunn, & Johnson, 2002) has revealed high levels of uncertainty about the decision to report, perceived "conflicts of loyalty," (Svensson & Janson, 2008) and complexities that, taken together, have caused some ECE professionals to feel as if they are "dancing on the edge."(Feng, Chen, Wilk, Yang & Fetzer, 2009).

ECE professionals report wanting to preserve relationships with families and avoid causing harm, but at the same time meet their legal, professional, and ethical responsibilities. One consequence of such uncertainty and conflict is report latency, with one study finding an average time of 14 months between ECE professionals having suspicion and making a report (Sundell, 1997) -- a situation that, if left unaddressed, risks dire outcomes for many young children.

The emergence of the internet and other technological advances provide a mechanism for educating ECE professionals about child abuse and its reporting, even in remote areas. But evidence-based curricula are lacking. This paper describes a methodology for crafting an integrated curriculum that meets the needs of ECE professionals and can be delivered via online learning modalities.

The Need
Every day, thousands of children experience one form of child abuse or another at the hands of a parent or other caregiver. Annually, there are 680,000 confirmed cases in the United States, and research provides strong evidence that this number is likely much higher (Finkelor, Turner, Ormrod, & Hamby, 2010; Hussey, Chang, & Kotch, 2006, Kohl, Jonson-Reid, & Drake, 2009; Stoltenborgh, Bakermans-Kranenburg, van Ijzendoorn, & Alink, 2013; Stoltenborgh, van Ijzendoorn, Euser, & Bakermans-Kranenburg, 2011; Stoltenborgh, Bakermans-Kranenburg, Alink, & van Ijzendoorn, 2012; Stoltenborgh, Bakermans-Kranenburg, & van Ijzendoorn, 2013; Sedlak, Mettenburg, Basena, Peta, McPherson, & Greene, 2010).

The youngest children –those under 5 years of age– are more likely to be victims of all forms of child abuse other than sexual abuse. Because they are more vulnerable, these children experience serious injuries –including death– at much higher rates than older children. (U.S. Department of Health & Human Services, 2018). However, not all consequences of abuse are as immediate as broken bones and black eyes. Each of the various forms of abuse can have profound effects on children's physical, psychological, developmental, and overall emotional well-being –with conclusive evidence of the strong relationship between child maltreatment and subsequent anxiety, depression, substance use, intimate partner and family violence, as well as heart disease, strokes, and cancer (Norman, Byambaa, De, Butchart, Scott, & Vos, 2012, Flaherty et al., 2013; Jonson-Reid, Kohl, & Drake, 2012; Mills et al., 2011; Danese & McEwen, 2012; Shonkoff & Garner, 2012; Hadland et al., 2015).

In the face of these staggering facts, it is perhaps surprising that ECE professionals –who provide care to 8-12 million children in the U.S.– (Laughlin, 2013; Laughlin, 2006) report only about half of 1% of confirmed cases of child abuse. (U.S. Department of Health & Human Services, 2018).

Because ECE professionals interact with so many young children on a daily basis, they are in a unique position to identify and respond to suspected child abuse. They may be the only people outside of a child's immediate family to have extended opportunities to discern red flags and/or subtle signs of abuse that might lead to early detection, the potential to help prevent patterns of abuse from taking hold, and the opportunity to support over-worked and overwhelmed families before abuse occurs. With the right preparation and resources, ECE professionals can also serve as key supports for children and families who are struggling (Dinehart, Katz, Manfra, & Ullery, 2013). Yet protecting children is far from straight-forward or low stress task –to the extent that some ECE professionals have identified "reporting possible abuse" as the most troubling ethical issue they face in their workplace (Clyde & Rodd, 1989; Feeney & Sysko, 1986).

Two-Phased Approach
The *iLookOut for Child Abuse* learning program *(iLookOut)* has two distinct phases. The first is the Core Training, which uses a video-based storyline, experiential learning theory, and practice modules to provide ECE professionals a strong, standardized foundation for understanding what child abuse is, what to look for, and what to do (and not do).

The second phase provides Advanced Training using spaced practice and spaced retrieval to augment the original instruction and provide continuing reinforcement delivered via email or a smart phone application. We have used the term "pinging" for as shorthand to represent the combination of spaced practice and spaced retrieval. We chose the term "pinging" because we think of the process as similar to the sound waves that submarines send out to gauge progress and location. In our case, rather than sound waves, our Advanced Training pings offer micro-learning opportunities, reminders about what to look for in cases of child abuse and feedback on progress toward completing the training. Such continual reinforcement related to child abuse encourages ECE professionals to re-process, synthesize and (most importantly) apply what they have learned about child abuse and what can be done to help protect children and promote their well-being. Because *iLookOut*'s pinging is iterative, and dispatches brief messages over time, this micro-learning can be tailored to the availability and needs of individual learners.

This paper describes *iLookOut*'s two phases, and explains how the distance learning curriculum that is now deployed to ECE professionals across Maine and Pennsylvania (Core Training only/Phase I) can serve as a model for others looking to deliver trainings and associated resources and reinforce learning over broad

geographic regions. . In this context, "Core Training" refers to the initial 3-hour *iLookOut* learning program, while "Advanced Training" refers to the micro-learning activities sent out as pings to smart-phones or other mobile technologies.

Core Training
Given the broad and dispersed population of ECE professionals in Maine, and the acute need for mandated reporter training, we sought to create an online program that could be delivered to ECE professionals where they worked. The *iLookOut* Core Training uses a video-based storyline and game-based techniques to more effectively engage ECE professionals, along with pre/post-testing to measure knowledge, attitudes, and satisfaction (Levi et al., 2019)

Like other online programs. *iLookOut*'s Core Training provides ready, low-cost access to multi-media learning 24/7, and can be paused/resumed as desired. *iLookOut*'s content is written at an 8th grade level, and provides standardized education for a workforce known for wide variability in entry level training, skill-sets, work environment, and professional development opportunities.

Mastery Learning
The *iLookOut*'s Core Training was designed to ensure that all ECE professionals could master basic information about how to identify signs of child abuse. This mastery learning philosophy recognizes that under appropriate instructional conditions virtually all learners can master what is being taught (Block & Burns, 1976; Bloom, 1971). *iLookOut*'s Core Training creates those conditions by organizing the curriculum into discrete units; providing interactive instructional activities along with various didactic exercises and resource handouts; embedding assessments within these activities; and requiring learners to master the learning objectives before moving to the next discrete unit. (Bloom, 1971; Melton, 2008).

Mastery learning is an approach that recognizes that aptitude for learning may be more closely linked to an individual's perseverance and time spent than to any notion of "ability" (Bloom, 1971; Melton, 2008). As with criterion-referenced tests, which assess the performance of each test-taker without regard to the performance of others (Shrock & Coscarelli, 2007), there is no limit to the number of ECE professionals who can excel in completing the *iLookOut* curriculum.

Self-Determination Theory
Motivationally, *iLookOut*'s Core Training program is based on Self-Determination Theory (SDT). This macro-theory which has been used to explain human motivation in many endeavors (including sports, healthcare, religion, work, and education) posits that human beings primarily perform tasks/activities because of an internal drive rather than some externally driven theory of operant conditioning (Ryan & Deci, 2000a; Ryan & Deci, 2000b). Among other things, SDT has helped to identify factors that either facilitate or undermine human motivation. For example, one of SDT's sub-theories, cognitive valuation theory, proposes that events and conditions that enhance a person's sense of autonomy and competence intrinsically support motivation, while factors that diminish perceived autonomy or competence undermine intrinsic motivation.

In the context of SDT, autonomy involves a person feeling that they are in control of their actions, and can influence the outcome of those actions. To help foster this sense of autonomy, the *iLookOut* Core Training provides ECE professionals with opportunities to make meaningful choices in response to the scenarios playing out in the video-based storyline –particularly with regard to possible signs of child abuse.

Another key aspect of SDT involves the human drive to take on challenges and achieve a sense of mastery. SDT describes this as striving for competence, and posits that factors that enhance an individual's ability to experience competence (e.g., opportunities to acquire new skills or overcome challenges) are intrinsically motivating. *iLookOut*'s Core Training provides ECE professionals many such opportunities to be challenged, to demonstrate mastery, and to earn digital badges that offer visible acknowledgement of their achievements.

iLookOut also incorporates SDT's third major element, relatedness –the experience of feeling meaningfully connected with others. *iLookOut*'s Core Training does this by helping ECE professionals identify with being part of a profession and community that is united in its goal of promoting children's well-being.

Pinging and Advanced Training
Despite the many strengths of *iLookOut*'s Core Training, it is well established that gains in knowledge are quickly lost unless they are somehow reinforced (Murre & Dros, 2015). Because decades of research show that spaced practice and spaced retrieval optimize learning (Ausubel, & Youssef, 1965; Caple, 1996; Kerfoot, 2010),

the *iLookOut* programs were designed to include reminders of interactive micro-learning activities that are sent to learner's smart-phones and emails. These pings serve to reinforce and augment the concepts that were originally taught in the Core training.

Spaced Retrieval

Broadly speaking, the concept of **spaced retrieval** involves providing learners with course content spaced over time. Spaced retrieval has been shown to be an effective tool for aiding student retention (Carpenter & DeLosh, 2005), and has been more widely promoted through computer-based adaptive instructional models such as ALEKS (Doignon & Falmagne, 1985) and LearnSmart (McGraw-Hill, 2013). In contrast to the standard practice of asking learners to digest large amounts of content all at one time, spaced retrieval avoids learner fatigue, as well as setting unrealistic expectations. For *iLookOut's* Advanced Training phase, spaced retrieval also allows learners time to process and reflect on new information at multiple points in time, rather than simply moving on.

Spaced retrieval helps learners retain access to memorized information over long periods of time because the spacing promotes deeper processing of the learned material. Ideally, the time between the learning events is greater than 24 hours, but shorter times have also been found to be effective. As long as eight years after an initial training, learners who engaged in spaced retrieval exercises showed better retention than those whose learning was more concentrated time period (Clark & Mayer, 2011).

iLookOut's Advanced Training sends participants weekly pings, each constituting a learning module that includes an activity (reading, game, video, etc.) along with various question-items. Learners must complete the modules in succession, and may review their content after completion; but learners may not proceed to the next module until its predetermined release date. Successful completion of a set number of modules ultimately earns learners a badge.

Retrieval Practice

By design, our use of retrieval practice requires ECE professionals to recall or retrieve information they have learned, and complete both "knowledge checks" and In-Practice exercises that provide opportunities to apply newly acquired knowledge. The benefits of retrieval practice are well-established across diverse groups (Larsen et al., 2009). But the advent of computer technology has added the ability to not only record learner responses and performance, but also standardize and formally integrate spaced practice into learning curricula.

Retrieval practice improves recall performance in part because the act of retrieving information from memory actually strengthens the existing memory trace, and often creates additional retrieval routes (Dobson, 2013). Because these changes increase the probability of successful retrieval in the future (Roediger & Butler, 2013), retrieval practice can significantly enhance long-term retention of what ECE professionals have learned.

Despite the known efficacy of spaced practice and retrieval practice, it was not obvious how best to apply them vis-à-vis *iLookOut*'s overall curriculum. To develop a systematic approach for doing so –i.e., to determine the appropriate sequencing and content for Phase 2 of *iLookOut*–we adopted a "Cognitive Mapping" approach to design a comprehensive pinging curriculum.

Cognitive Mapping

Cognitive Mapping was first introduced in 1948 by educational psychologist, Edward Tolman (Tolman, 1948) to explain how rats learned the locations of rewards in a maze, and as such generated a practical model for mapping their environment. Cognitive mapping is now in wide use in many different venues (including health research (Stadler, et al, 2013) and engineering (Dixon & Lammi, 2014)), not only to identify and illustrate how key elements are (or should be) inter-related, but also to create strategies for integrating, measuring, and analyzing various factors and outcome.

Cognitive mapping helps explore learner characteristics that improve learning (e.g., self-regulated learning components of goal-directedness, motivation, goal feedback, etc.). One such characteristic involves outcome expectations (Schunk & Zimmerman, 2006). Rooted in Tolman's concept of field expectancies, a learner's outcome expectations are based in their ability to anticipate particular relationships between a (e.g., lightning) stimulus and a response (e.g., thunder). Such expectancies help people form cognitive maps, which are internal representations of these expectancies, along with a catalogue of actions that are more (or less) likely to help individuals attain their goals.

Cognitive maps are particularly important for latent learning –i.e., learning that occurs after the initial period of teaching/exploration/etc. Latent learning may occur at any number of points in time, but may be most pronounced when the learner realizes how what has been taught applies in real-world settings –which in the case of ECE professionals is likely to be when they are working with infants and toddlers.

According to a Social Cognitive framework, learners will act in a manner they believe is likely to be successful, and will adopt observational and behavioral frameworks that conduce to success. As such, *iLookOut*'s cognitive map was designed to both 1) help our research team understand the relations between the various components of the Core Training and the subsequent pings, and 2) create a prototype of the internal model we hoped our learners would develop over the course of *iLookOut*'s two phases. In this way, the cognitive map developed for *iLookOut* provides a template to help ECE professionals more effectively connect and integrate information, ways of observing/interpreting, and particular practices so as to optimize and take full advantage of latent learning.

By definition "cognitive maps" are mental or conceptual models, "thinking maps" that, like other forms of cartography, map territory. But here it is cognitive "territory" rather than geographic terrain that is being characterized.   Sometimes, cognitive maps provide a linear progression of a concept, or the relationships between various factors. They also can serve a developmental purpose, by helping people (be they researchers, policy makers, teachers, or learners) develop a deeper understanding of how different elements are (or should be) related to one another.

There are many applications of cognitive maps. *Perceptual* applications tend to focus on a) inquiring and/or gathering information; b) noticing/attending to; or c) differentiating/distinguishing. *Cognitive* applications tend to focus on a. organizing data and/or finding patterns/relationships; b) interpreting/understanding data; c) analyzing data; d) troubleshooting/diagnosing; e) drawing conclusions; f) framing; g) illuminating; or h) estimating probability/confidence levels. *Evaluative* applications focus on a) assessing/judging; b) measuring effectiveness; c) predicting future success; d) assigning importance/priority; or e) providing feedback. *Volitional* applications include a) identifying desires; b) defining/clarifying purposes; or c) planning. *Behavioral* applications include a) performing/behaving; b) implementing a plan; c) communicating; d) learning; e) improving skills; or f) developing.

Of these, *iLookOut*'s cognitive map was developed for the following purposes: coordinating learning content (Core Training and Advanced Training), implementing a plan, predicting likelihood and degree of future success, providing feedback, monitoring and measuring progress, evaluating and assessing achievement, organizing data, and finding patterns. This allowed us to both fully align existing content, strategies, and outcomes, and also identify critical areas that were not sufficiently fleshed out or appropriately integrated. For *iLookOut*'s Advanced Training in particular, this involved 1) distinguishing the learning points for the different concepts; 2) demonstrating associations between various components; 3) mapping individuals' actual progress through different stages of learning; 4) clarifying the purposes of various components of the learning program; and 5) creating a framework for how learners will progress through various activities so as to develop their skills. Figure 1 provides a very simplified cognitive map showing how key elements from *iLookOut*'s Core Training and Advanced Training fit together to create a unified whole. Such integration is crucial because any misalignment could potentially confuse or demotivate learners, fail to leverage spaced retrieval/practice, and/or undermine latent learning.
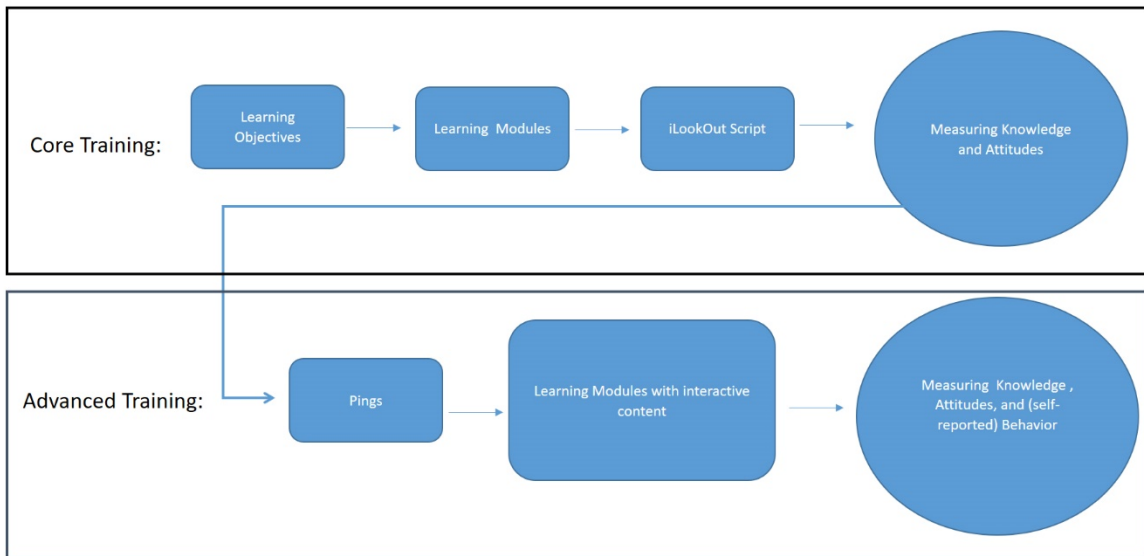
Figure 1. Simplified Overview Cognitive Map

Figure 2 provides more detailed mapping of the Core Training, showing where and how learning objectives manifest in the storyline, discrete learning modules, and post-training knowledge tests.

Figure 2. Sample Cognitive Map for Core Training

Figure 3 provides a more detailed mapping of a portion of the Advanced Training, corresponding to the learning content in Figure 2. In addition to listing the topic and content for each week's pings, this cognitive map shows the kind of activity and teaching modality learner will experience.
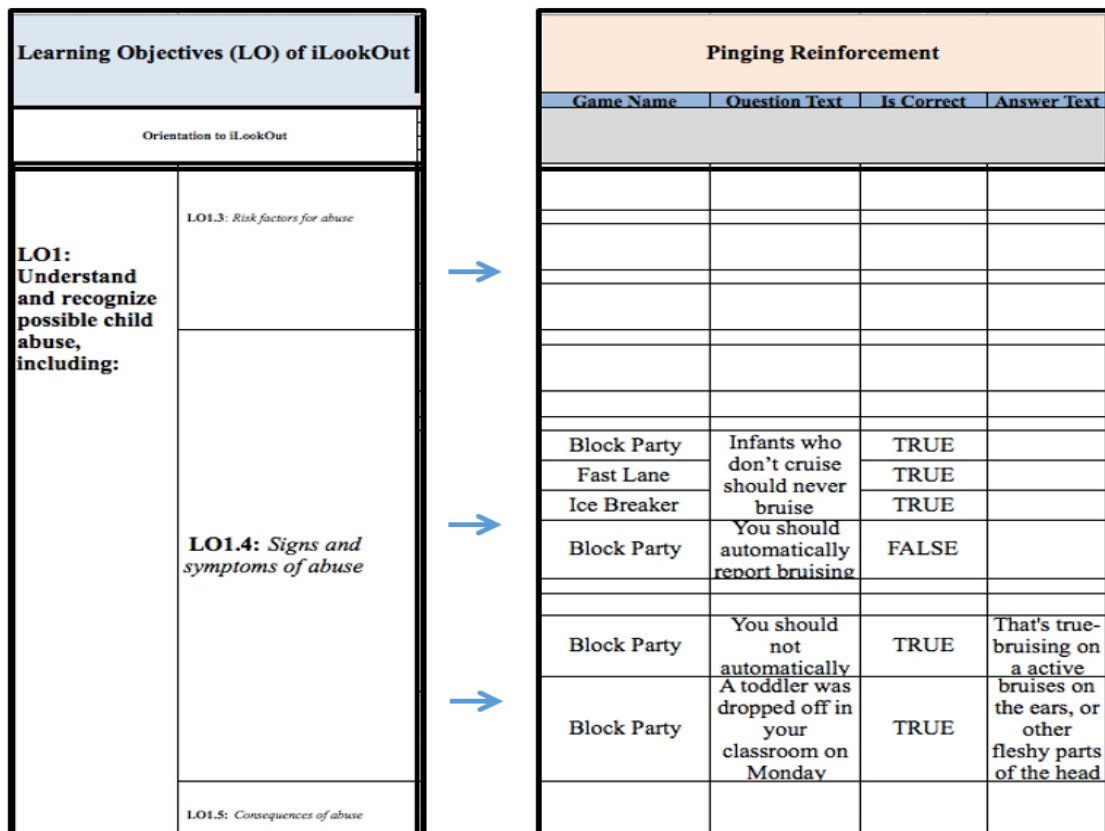
Figure 3. Sample Cognitive Map for Advanced Training

Conclusion

The mapping process is critical for ensuring that key learning objectives are aligned with both content and teaching modalities, and that concepts and educational activities are appropriately sequenced to support the developmental goals of *iLookOut*. This cognitive mapping also helps to ensure consistency, cohesiveness, and alignment of the Core and Advanced Trainings.

The use of cognitive mapping is not common in non-academic settings. Yet, as described in this paper, this process can have great value for developing conceptually rich and well-integrated training programs, particularly for those wishing to leverage the power of spaced retrieval and spaced practice. This can be particularly valuable for topics like child abuse that are both contextually nuanced and emotionally complex. As such, this description of *iLookOut* is presented as a prototype that other researchers, designers, and developers of curricula may wish to consider and improve upon.

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EFFECTS OF SOCIAL MEDIA ON ACADEMIC PERFORMANCE OF THE STUDENTS

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ABSTRACT

Social Media are growing rapidly among the young generation of the world. School age students widely engaged using Social Media. So, they will affect students personal and academic live. Thus, this study is designed to find out the Effects of Social Media on the academic performances of students in Cuddalore District. Survey method was adapted to collect the relevant data for the study. 1000 were selected as sample. Random sampling technique was employed for sample selection. Subsequently, Statistical Technique was applied to analyze the data. It was concluded that in despite of public views concerning the misuse of social media among students in the society, most of the school students were interested to use social media positively for their academic purpose. This indicates that the social media impacts the academic performance of the students. Therefore the social media contributes to improve the academic performance of the students. However, results of ANOVA showed that there is significant differences between academic achievement and impact of social media among Students. Teacher Educators and students can use social media as teaching and learning tool to ease and improve learning process.

Keyword: Social Media, Academic Performance, School Students.

Introduction

The most commonly used method for communication is social media networking. It is being used by individuals belonging to every walk of life. Social media was widely accepted by public. There are numerous online networking platforms that include but are not limited to Facebook, twitter, Instagram, Pinterest, YouTube, LinkedIn, Google+, Flickr, snapchat, vine, Tumblr. The capacity of Social Media networking to spread valuable data quickly has made it the quickest developing method of association. Social media has changed numerous businesses, however the most impact of it is in the classroom teaching and the overall education system. The use of digital technology in education has attracted much interest in the recent years. It is a common expectation for academic staff and administrators to investigate options to ensure the learning environment is modern, relevant and capable of producing graduates with attributes aligned with the work environment and their career expectations. Students engage with campus life carrying highly sophisticated computing devices in their pockets. Frequently these students have used these devices for a variety of purposes, which are unrelated to learning, thus highlighting a crucial disconnect exists. Institutes of higher education are concerned that both their staff and students are digitally literate, in the manner of learning delivery or method of instruction. Social media networking usage refers to online space that is used by students to connect, share, communicate, establish or maintain connection with others for academic and socialization purposes. Social media networking as a communication medium is rising quickly, mostly in the prosperous development of applications for mobile devices.

Social Media

Social media is computer-mediated tools that allow student to create, share and exchange the information, ideas, pictures, videos for virtual communities and learners. The issue of using the social media in the classroom has been a controversial topic for several years. Many parents and educators have been fearful of the repercussions of having the social media in the classroom. Social media is growing rapidly throughout the world. More adults and teenagers are joining sites such as Facebook, MySpace, Skype, WhatsApp and Twitter to interact with friends, family, and strangers. Social networking sites also enable community involvement in locating expertise, sharing content and collaborating to build content, and allow knowledge workers to extend the range and scope of their professional relationships. Social media networking allows researchers to draw from a social network of information and people outside of their traditional circle of friends. ResearchGate is an example of social networking platform for researchers. Social networking helps teachers promote reflective analysis and the emergence of a learning community that goes beyond the institutional walls. Facebook website of a teacher disclosed large amounts of information, anticipated higher levels of motivation and affective learning, indicating positive attitudes toward the course and the teacher. Social networking also offers educators an excellent platform to forge their own professional identity by sharing with other colleagues and debating ideas, allowing them to extend their professional relationships. Social networking sites may provide helpful information to educators and help them deal with certain situations better. Students may also feel more comfortable

approaching teacher educators who are present and friendly or who interact casually with them on Facebook, WhatsApp and ResearchGate; it gives students the encouragement they need.

Social Media in Education

Social media networking is sharing and generating knowledge, and all of these features are of great value in the context of higher education. Social media plays an important role in the field of education and student's life. It is easier and convenient to access the information, provide information and communicate via social media. Teachers and students are connected to each other and can make use of these social media platforms for the working of their education. Professors are expanding their Social Media usage to host live lectures, offer off-hours support for students, or even host student debates. Social media helps Teacher Educators to be connected to their students off campus as well as with their ex-students. Teacher Educators use social media as a way of teaching by creating groups and accounts for students where the information can be accessed. Teacher Educators can share ideas with each other and point students to Skype, WhatsApp, LinkedIn and Facebook. Teacher Educators create hash tags that allow students to tag their academic posts, and view submissions to see what the collective has creatively produced. One of the main reasons behind professors adapting to social media in classrooms is that they can do teach the students via social media. Not only they are able to make the work easy but also are developing themselves professionally, creating a name for them in the community. Facebook, Twitter, Blogs and YouTube are the examples where you can see professors doing excel in their work.

These social media platforms are highly accessed and hence can help professors in getting the high reputation in their profession. WhatsApp, Blogs and wikis are preferred for teaching and learning process, while Facebook or LinkedIn are used more for social and professional connections. Social Media for Community Building is the missing piece of the puzzle for Admissions departments, Enrolment Management departments, Public Relations and Student Services departments that are seeking to engage their audiences using social media. In every college and university, social media is being integrated in classroom teaching as maximum as possible, including admissions, campus life, alumni relations. Student and Teachers are intimately involved with social media at every stage. If academician are missing onto the usage of social media they will push away a lot of potential audience. Using it in Higher Education Institutions can prove to be a very effective measure.

Social Media in Teaching and Learning

Social media such as Facebook, Twitter, Google Plus, and Flickr, as well as open social practices such as blogging, are being used in learning for the purpose of convenient communication with peer group students and potentially with others outside the class such as students of the same topic and subject experts. The fact that these social media are generally open to the world implies a need to carefully consider the risks of openness as well as need for ongoing communication with students in order to address their academic and deal with issues in the use of social media as they arise. These risks are counter-balanced by the academic benefits of open discussion and academic debate in authentic online environments. A new area of social media is increasing in popularity that is focused on building relationships with students outside of the classroom.

The advantages of using social media for educational purpose are far ranging. A study stated that the use of social media tools improved the student's learning opportunities, allowed for real-time communication outside the classroom, fostered collaborative opportunities, and enhanced creativity. Students can watch educationally relevant videos or exchange information about what they have watched and learned, and then join online to further discuss with teachers. Even the teachers also can learn from the students during social networking interactions. Similarly, a teacher can supervise students while they are learning, reflecting, sharing, interacting and summarizing discussions. Social media provides a forum to contact peers and teachers from wherever they are, offering the flexibility of extended duty hours. Some social media, especially Facebook, WhatsApp, YouTube and Kaizala App, features may boost students to involve in social and creative learning progressions that extend beyond traditional educational settings and institutions.

Review of Related Literature

According to Junco al et (2010), social media are a gaggle of internet websites, services, and practices that support collaboration, community building, participation, and sharing". The growing dimension of the utilization of social media among the youth of today can't be over emphasized. Over the years, social networking among second cycle students has become more and more popular. It is how to form connection not only on campus, but with friends outside of faculty . Social networking may be a way that helps many of us feels as if they belong to a community. Due to the increased popularity of it, economists and professors are questioning whether grades of scholars aren't being suffering from what proportion time is spend on these sites (Choney, 2010). According to Lenhart et al., (2010), about 57% of social network users are 18-29 years old and have a private profile on multiple social media websites. In a study by Pempek, Yermolayeva, and Calvert (2009), the quantity of your

time spent daily on social network sites varied greatly. However, an analysis of the info indicated most participants spent approximately thirty minutes a day socializing, mostly during the evening hours between 9p.m to 12a.m students spent a mean of forty seven minutes a day on Facebook. More than 50% of school students continue a social networking sites several times each day (Sheldon, 2008). Quan-Haase and Young (2010), found that 82% of school students reported logging into Facebook several times each day . Younger students attended use Facebook more frequently than older students to stay in-tuned with friends from high school or from their hometown (Pempek et al., 2009). Many researchers like Choney (2010), San Miguel (2009) and Enriquez (2010) studies on students' use of the social media sites revealed a negative effect of the use of social media sites on students' academic performance. Nielsen Media Research study conducted in June 2010 stated that nearly 25% of students' time on the web is spent on social networking sites (Jacobsen & Forste 2011).The American Educational Research Association conducted a search and declared at its annual conference in San Diego California (2009), that social media users study less and generate lower grade (Abaleta et al, 2014). San Miguel (2009), focused on the connection between time spent on Facebook and therefore the academic performance of scholars . The overall findings indicated "more time on Facebook equals slightly lower grades". In his study, the typical facebook user had a GPA of three .0 to 3.5, while the non facebook user had a GPA of three .5 - 4.0. Also, the typical facebook user study for 1 – 5 hours per week, while the non facebook user would study 11 – 15 hours per week Enriquez (2010), revealed that students who multi-task between social networking sites and residential work are likely to possess 20% lower grades than a student who doesn't have a social networking site. He believes that even running a social networking site on the background on a student's PC while studying or doing homework could lower a student's grade. He believes that "the problem is that the majority people have Facebook or other social networking sites, their e-mails and can be instant messaging constantly running within the background while they are completing their tasks" Choney (2010), in watching the time spend on facebook and its effect on academic performance said a user of Facebook has a mean "GPA of three .06, while non users have a mean GPA of three .82". Furthermore, a study conducted by Karpinski and Duberstein (2009), of Ohio Dominican university on college students who use social network have significantly lower mark averages (GPAs) than people who don't . They also mentioned that among various unique distractions of each single generation, Facebook remains a big distraction of current generation.

According to Khan (2009), facebook users often time experience poor performance academically. Similarly, Englander et al., (2010), posit that social media is negatively related to academic performance of student and may be a lot more momentous than its advantages. According to Kubey et al., (2010), impairment of educational performance and internet dependency are correlated by utilizing synchronous communication programme including websites and forums. Jocabsen and Forste (2011), found a negative relationship between the utilization of varied media, including mobile phones, and self-reported GPA among first year university students within the us . In Taiwan, Yen at el. (2009), identified an association between mobile use and respondents and report that respondents have allowed phone use to interfere with their academic activities. Similarly, Hong et al. (2012), reported that daily use of mobile phones is correlated with self-reported measure of educational difficulty among a sample of Taiwanese university students. In a survey of Spanish high school students Sanchez-Martinz and Otero (2009), found a correlation between "intensive" mobile use and faculty failure. However, other studies like Ahmed and Qazi (2011), Hanqittai and Hsich (2010), Pasek and Hanqittai (2009), conducted on an equivalent topic revealed no correlation between social media and students' academic performance. A study conducted at Whittemore school of Business and Economic on one thousand, 127 students revealed that there's no correlation between what proportion time is spent on social networking sites and grades (Martin, 2009). Again, University of latest Hampshire (2010) study also revealed that students' use of social media sites don't affect grades. A recent survey showed that approximately ninety percent of teens within the us have Internet access, and about seventy-five percent of those teens use the web quite once per day (Kist, 2008). This study also showed that approximately half all teens who have Internet access also are members of social networking sites, and use the web to form plans and socialize with friends (Kist, 2008). In September 2005, out of the entire adult internet users (18-29 years) 16% were using social networking site but this percentage increased to 86% in May, 2010 (www.marketingcharts.com).

Significance of Study
New developments in the technological world have made the internet an innovative way for individuals and Students to communicate through Social Networks, Social media have created a phenomenon on the internet that has gained popularity over the recent days. Students use social media sites such as Facebook, Twitter, WhatsApp and MySpace to create and sustain relationships with teachers and peers. These social media let those who use them create personal profiles, while connecting with other users of the sites. Users can upload photographs, post what they are doing at classroom and any academic activities, and send personal or public messages to whomever they choose. In this "information age," social media seems to be growing in popularity rapidly, especially among school students. The issue of using the social media in the classroom has been a

controversial topic for several years. Many parents and educators have been fearful of the repercussions of having the social media in the classroom. Social media helps Teacher to be connected to their students off campus as well as with their ex-students. Teachers use social media as a way of teaching by creating groups and accounts for students where the information can be accessed. Teachers can share ideas with each other and point students to LinkedIn and Facebook. Teachers create hash tags that allow students to tag their academic posts, and view submissions to see what the collective has creatively produced.

Though parents are worried about students' continuous use of the social media sites, many students continue to utilize these sites on a daily basis. It is against this background that this study is being conducted to find out the impact of students' use of social media on their academic work. Social Media are becoming more popular among university students and are a new way of spending free time and serve as a separate channel for finding the necessary information, both educational and entertaining. Therefore, it is necessary to examine the effect of social media on students academic performance, in particular, how the use of social networks in the academic purpose.

Objectives of the Study
The objectives of the project is to determine following in order to assist to derive outcome of the research problem.
1. To find out the Use of Social Media have any Impact on Academic Performance of the Students.
2. To find out the difference between Time Spent on Social Media and Academic Performance of the Students.
3. To find out the difference between Using Time of Social Media and Academic Performance of Students.
4. To find out the difference between Most use of Social Media Platform and Academic Performance of Students.
5. To find out the difference between Purpose of Using Social Media and Academic Performance of Students.
6. To find out the difference between Impact of Social Media on Education and Academic Performance of Students.

Hypotheses of the Study
1. There is no impact between Social Media and Academic Performance of the Students.
2. There is no difference between Time Spent on Social Media and Academic Performance of the Students.
3. There is no difference between Using Time of Social Media and Academic Performance of Students.
4. There is no difference between Most use of Social Media Platform and Academic Performance of Students.
5. There is no difference between Purpose of Using Social Media and Academic Performance of Students.
6. There is no difference between Impact of Social Media on Education and Academic Performance of Students..

Methodology in Brief
The goal of this study is to learn about the social media's impact on school students' academic performance. The investigator followed the "Survey" as method of the present study. The Questionnaire was developed and administered to the Students. The Students have responded to the questionnaire. Annual Marks of IX Standard and Half Yearly Marks of X Standard have been taken to analyse the Academic Performance of the Students. The data thus collected were put into appropriate statistical to analysis the data with the help of SPSS.

Sample for the Study
Random sampling technique was adopted to select the sample for the present study. The investigator decided to collect data from Students, which are under the jurisdiction of Cuddalore District. 1000 Students were the sample for this study.

Tools Used for the Study
Effectiveness of evaluation largely depends upon the accuracy of measurement in any research. Accuracy of measurement in turn depends on the precision of the tool. Effects of Social Media on Student's Academic Performance Scale (ESMAPS) was prepared and developed by the investigator and it was used to collect the data

for this study. The reliability and validity of the Effects of Social Media on Student's Academic Performance tool were established.

Statistical Techniques Applied
Statistical Techniques serve the fundamental purpose of the description and inferential analysis. The descriptive and differential analyses were used in the study.

Hypotheses Testing
The hypotheses formulated for the present study were tested by applying statistical techniques. Descriptive and Differential analyses were used.

Hypothesis - 1
There is no impact between Social Media and Academic Performance of the Students.

Table - 1
Impact between Social Media and Academic Performance of the Students

Variable	N	Mean of Academic Performance	S.D	t' Value
Before Starting use of Social Media	1000	233.6	35.6	24.6
After Starting use of Social Media	1000	297.2	73.5	

The above Table-1 reveals that there is a positive impact between the Academic Performance in Annual of IX standard (Before Starting use of Social Media) and Academic Performance in Half Yearly of IX standard (After Starting use of Social Media) at a significant of 0.01 level. This indicates that the social media impacts the academic performance of the students. Therefore the social media contributes to improve the academic performance of the students.

Hypothesis - 2
There is no difference between Time Spent on Social Media and Academic Performance of the Students.

Table - 2
Time Spent on Social Media and Academic Performance of the Students

Time Spent	N	Percentage	Mean of Academic Performance	S.D	F Value
Less than 1 Hour	123	12.3%	197.19	4.4	2080.3
1 - 2 Hours	265	26.5%	233.27	18.5	
3 - 4 Hours	498	49.8%	326.14	35.6	
5 - 6 Hours	114	11.4%	427.26	12.4	
Total	1000	100%	297.2	73.5	

When respondents were asked how much time they spent on their social media sites, 123 of the respondents representing 12.3% indicated that they spent less than 1Hour, 265 respondents representing 26.5% spent between 1 - 2 Hours, 498 respondents representing 49.8% spent between 3 - 4 Hours and the last group of 114 respondents representing 11.4% said they spent between 5 - 6 Hours a day on the social media sites. The above Table-2 reveals that the Students who have spent between 5 - 6 Hours a day on the social media sites have more academic performance than the counterpart.

Hypothesis - 3
There is no difference between Using Time of Social Media and Academic Performance of Students.

Table - 3
Using Time of Social Media and Academic Performance of the Students

Using Time	N	Percentage	Mean of Academic Performance	S.D	F Value
During Free Time	150	15.0%	198.88	5.4	816.7
Whilst at School	738	73.8%	297.39	52.4	
Spare Moment	112	11.2%	427.61	12.2	
Total	1000	100%	297.2	73.5	

When respondents were asked when do you use social media sites, 150 of the respondents representing 15% indicated that they use During Free Time, 738 respondents representing 73.8% use Whilst at School and 112 respondents representing 11.2% use Spare Moment on the social media sites. The above Table-3 reveals that the

Students who have used Spare Moment on the social media sites have more academic performance than the counterpart.

Hypothesis - 4
There is no difference between Most use of Social Media Platform and Academic Performance of Students.

Table - 4
Most use of Social Media Platform and Academic Performance of the Students

Most use Platform	N	Percentage	Mean of Academic Performance	S.D	F Value
Facebook	441	44.1%	262.71	42.1	
Instagram	63	6.3%	211.82	3.7	842.7
Twitter	140	14.0%	236.51	10.1	
WhatsApp	356	35.6%	378.89	38.8	
Total	1000	100%	297.2	73.5	

From the above Table-4, respondents gave the following as their most use of Social Media Platform. Facebook 441 represents 44.1%, Instagram 63 represents 6.3%, Twitter 140 represents 14% and WhatsApp 356 represents 35.6%. respectively. The analysis shows that Facebook is the most use Social Media Platform. It reveals that the Students who have used WhatsApp have more academic performance than the counterpart.

Hypothesis - 5
There is no difference between Purpose of Using Social Media and Academic Performance of Students.

Table - 5
Purpose of Using Social Media and Academic Performance of the Students

Purpose of Using	N	Percentage	Mean of Academic Performance	SD	t' Value
Academic	800	80%	320.9	62.72	26.65
Non Academic	200	20%	202.4	7.88	
Total	1000	100%	297.2	73.5	

The above Table-5, out of the total respondents of 1000 students, 800 representing 80% responded in the Academic purpose when asked if the purpose of using Social Media have improved their academic performance, 200 representing 20% responded in the Non Academic. It reveals that the Students who have used for Academic Purpose have more academic performance than the Non Academic purpose. The implication is that the use of social media for Academic purpose have improvement in their academic performance.

Hypothesis - 6
There is no difference between Impact of Social Media on Education and Academic Performance of Students.

Table - 6
Impact of Social Media and Academic Performance of the Students

Impact on Education	N	Percentage	Mean of Academic Performance	SD	t' Value
Positively	788	78.8%	317.65	67.9	20.1
Negatively	212	21.8%	221.16	31.7	
Total	1000	100%	297.2	73.5	

From the above Table-6, out of the total respondents of 1000 students, 788 representing 78.8% responded in the Positive when asked if the Impact of Social Media on their Education, 212 representing 21.8% responded in the Negative. It reveals that the Students who have used Social Media positively, it impacts on Students' Education. The implication is that the use of social media positively have improvement in their academic performance.

Conclusion
The study was conducted to examine the impact of students' use of social media on their academic performance. The study revealed that most of the students had mobile phones with internet facility and had knowledge of the existence of social media. As a result, the Students who have spent between 5 - 6 Hours a day on the social media sites have more academic performance than the counterpart. In addition, the study revealed that the Students who have used Spare Moment on the social media sites have more academic performance than the counterpart. It reveals that the Students who have used WhatsApp have more academic performance than the counterpart. It reveals that the Students who have used for Academic Purpose have more academic performance than the Non Academic purpose. The Students who have used Social Media positively, it impacts on Students'

Education. The study further revealed that most students use the social media sites to chat for academic purpose and it helped to improve their academic performance.

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EXPLORING THE TEACHER AND LEARNER PERCEPTIONS OF A TECHNOLOGICAL FRIENDLY CLASSROOM

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ABSTRACT
Technology holds a relevant and unique place in the school curriculum as it is important for a better living of the individual. But, it is known that most of the teachers are considering technology handling as difficult. This study examines the perception by secondary school students and teachers in technology integrated learning and teaching. Sixty secondary school students and fourteen teachers participated in the survey. The questionnaires on perception of students and teachers used to collect the data and comprises of closed as well as open ended items. The study incorporated cognitive, affective and environmental reasons that contribute to perception about technology integration. The factors that make difficult for the teachers include distraction, ICT support, Infrastructure, Professionalism. Further analysis revealed that students' responses include both positive and negative. Little variation in teaching, lack of knowledge in handling, too fast class, are some of the negative responses from the students. According to teachers, students' lack of effort and prerequisites are the major reasons for keeping away the technology integration in classroom instruction. Reluctance to seek help from others, inattention in the classroom and students' distraction were also perceived to contribute toward why there is unsuccessful integration of technology. Teachers reported also that, lack of infrastructure and professionalism are causing main huddle in this. The findings indicate the need for teachers to realize the importance of making technology integrated classroom interesting for students to take effort in learning it. The result is discussed in relation to students' perception in classroom teaching.
Keywords: Technology, Learning, Teaching, Integration, Perception

INTRODUCTION
Technology refers to any type of application used to store, create, exchange and use information. Classroom technology may consist of computers, laptops, projectors, cell phones, social media and the Internet for effective transaction of content. These new technologies are powerful tools to help schools meet the needs of diverse student populations. Digital devices, software, and learning platforms offer an incredible collection of options for adapting education to each specific student's academic strengths and weaknesses, interests and motivations, personal favourites, and optimal pace of learning. Finn & Ledbetter (2013) found that university students want their teachers to use technology in the classroom. For better results each Students' learning environments should be flexible and structured in ways that support their individual goals. Digital tools helps for effective transaction process. Educational software and applications have grown more "adaptive," than the conventional ones relying on technology to determine not only what a student knows, but what learning process is, and the behavioural state. For all the technological progress in the classroom, implementation remains a major challenge. Schools and educators continue to struggle with the changing role of teachers. They don't know how to balance flexible and "personalized" models with the requirements they still must meet, and the deeper cultural challenge of changing educators' age-old habits and practices. Furthermore the concept of integrating technology to backing classrooms in the higher education system is a challenging topic. World experiences rapidly changing technology, newer applications and programs are evolving every day. These technology are for meeting the needs other than educational purposes to meet the growing demands of student learning. Student always look for different ways of learning and teaching with technology (Dolenc & Abersek, 2015). Teachers have to be continuously update and evaluate educational technology in order to fulfil the educational goals of the students.

CHANGING CLASSROOM PRACTICES
The transition to digital instructional materials is happening slowly, for reasons that range from the financial to the technical. Technology has become a central part of knowledge transmission (Siegel & Claydon, 2016). Many schools use a mix of digital resources, pushing potential benefits such as greater ability to personalize, higher engagement among students, enhanced ability to keep content updated and current, and greater interactivity and adaptivity. Students, especially those in rural and remote areas, technology can open more horizons. Online and distance learning can offer access to courses, subjects, to learners. Such opportunities can also benefit advanced and highly motivated students and those with unusual schedules and travel requirements, and be a useful tool to

keep schools running during adverse days. Studies on the use of mobile technologies in learning (Briz-Ponce & Juanes-Mendez, 2014; Huang, Lin & Chuang, 2007), reveal that m-learning is found to be increasing the student independence, commitment, and communication (Dunn, Richardson, Oprescu & McDonald, 2013). Students learn differently. Some are visual learners and can understand the material by the show-and-tell while others prefer reading first and then illustrating. Technology helps in providing the instructional material according to students learning styles.

THEORETICAL BACKGROUND

Back (2016) found that students who regard their learning environment as positive perform better academically and experience positive student-teacher relations (Raufelder et al. 2016). They choose various resources to support their learning. Technology helps them a lot in this regard. If the students are active while using technologically supported classroom, makes them feel more like 'subjects' in teaching, rather than 'objects' for teaching, they will definitely enjoy a more positive learning environment (Manca, 2016). Many researches has done on teachers and focused on their use of or opinions about using ICT integration (Olofsson et al. 2017) and their competencies and strategies to enact ICT in teaching (Keane and Keane 2017). Still there is a dearth of in getting enough inputs to improve the process. Flipped classroom and mobile code-using are now a days focus of research to infuse that into our classroom (Keane, 2017 and Limniou et al. 2018). Teachers' efforts to build relations and recognise students' views are central components of teaching (Raufelder et al. 2016). Innovative pedagogies make way for the same and make it more educational. Research studies on students on their use and views of ICT in general (Olofsson et al. 2018) and of specific digital hardware, software or applications in particular (Towndrow and Fareed 2015) gives direction for the educationists where teachers have to emphasis most so that the desired outcome will follow.

SIGNIFICANCE OF PRESENT STUDY

It is very essential to know before integrating ICT in classroom that what are teacher's capacities, attitudes, and ideas concerning technology (Claro, 2010). It is desirable to have an active and positive attitude which is highly motivating for the student body (Hinojo et al., 2002). All the teachers should have the ability to transmit educational content in an innovative way, motivating the use of ICTs, and producing new knowledge without ceasing to reach high, necessary academic levels by utilizing technology. Being the teachers a determining piece in the process of ICTs incorporation in the classroom, it is essential to investigate their processes of adoption of technology and determine whether the innovative characteristics of them are related to the intention to use ICTs in the classroom.

Technology integration can't be done without relevant prior knowledge. It differs from instruction process for its abstract nature, demand of higher cognitive process and engagement and perseverance from learner. It is found that as the students move to higher grades, the knowledge in technology helps them a lot. From this point the investigators felt a necessity to study the perception about the impact of technology in classroom communication. For taking further action to improve students' involvement in classroom communication it is necessary to analyze how they perceive such classes. It is essential to examine students' attitudes toward technology and learning, especially with the increase in popularity of social media. This study is analyzing students' affective beliefs and teachers' perception regarding the impact of technology integration and classroom communication instead of checking their mastery of relevant prior knowledge. Teachers were probed through semi structured interview about possible reasons and the open ended were used to probe into student perceptions.

STATEMENT OF THE PROBLEM

The present study is stated as the perception of secondary school students and teachers in technology integrated learning and teaching.

OBJECTIVES OF THE STUDY

- To know the perceived reasons of teachers on technology integrated classroom instruction
- To know the perception of students on technology integrated classroom instruction
- To find out the correlation between Students' perceptions of Technology integrated classroom with perception of teachers
- To find out the significant difference between the male and female students' perceptions on technology integrated classroom instruction

HYPOTHESIS OF THE STUDY

- There will be significant relationship between Students' perceptions of Technology integrated classroom with perception of teachers

- There will be significant difference between the male and female students' perceptions of on technology integrated classroom instruction

METHODOLOGY
Method
Descriptive survey method is used in the study
Participants
The sample comprises of sixty secondary school students (30 boys and 30 girls) and fourteen teachers (6 females and 8 males) with experience ranging from ten to thirty years, from Urdu and English medium schools in Telangana.
Instrument
Students' data is collected with the help of Impact of Technology in classroom instruction questionnaire. The tool includes both closed and open ended items. The teachers' data is collected with the help of Impact of Technology in classroom instruction: teacher perception questionnaire. This questionnaire has mainly three sections; one is regarding teachers' perception which includes reasons related to cognitive, affective and control of learning environment, second part is about positive and negative sides faced in teaching through technology, and the last part is about their teaching style and strategy use.
Procedure
Prior to data collection, good rapports was created with students and were ensured of their anonymity. Each question were explained by the investigators and allowed time to respond.
Approximately thirty minutes were allowed to students for completing the questionnaire.
Data Analysis
Qualitative as well as quantitative methods were used for data analysis. Percentage analysis to find out students' and teachers' perceptions of Impact of Technology in classroom instruction and Pearson's product moment of correlation to find their interrelationships, and mean difference analysis to find out the difference in perceptions of male and female students, were used to draw findings.

RESULT AND INTERPRETATIONS
I.   Results Teacher perceptions regarding Impact of Technology in classroom instruction
Among the given possible reasons, related to cognitive, affective and management of learning environment, teachers perceived lack of sufficient effort and previous knowledge as the prime reasons that make technology integration difficult. 10 perceived reasons regarding integration of Technology in classroom instruction in their order of mean scale value, are stated in Table I.

Table I
Perceived reasons by teachers regarding technology integrated classroom instruction

Teachers perceive that the less formal the learning environment, students tend to be more distracted from the classroom instruction. These external factors are found relevant equally as difficulty making factors related to cognitive variables. The professionalism in handling the technology, difficulty in handling the technological class with more number of students in class are making difficulty for the teacher. The lowest mean value of agreement is on the reason resistance to change. Teachers are very much like to cling to the conventional method of instruction than to change for the reason.

II.   Result of teaching style and strategies teachers use for classroom instruction
The result of teaching style and strategies teachers use for classroom instruction is listed in Table II
Table II
Percentage of teaching styles/Strategies Used

The major percentage of teachers use the conventional style of lecture method of instruction, followed by formal exam and test styles during instruction. The online method teaching is least used by the teachers. As expected the technology integrated instruction is relatively less form instruction in our classroom.
Responses by students on the perception of Technology integrated classroom instruction. Among the given responses for the ICT to make teaching and learning more effective, students selected in good ways (62.1%), in less good ways means it advances too fast (22%), too much text (49%) makes it fun (51%), variety of teaching methods (65%), little variation in methods (43%), does not demonstrate how ICT works (73%), boring lessons (34%). There is a mixed responses from the side of students with regard to the impact of technology integrated classroom.

III. Relation between Students' perceptions of Technology integrated classroom with perception on their teacher and instruction

The correlation coefficient for each construct in the perceptions are given in Table III.

Table III
Correlation Coefficient per constructs

From the results obtained, the high explained correlation is seen in the innovativeness of the pedagogical tools. Behaviour interaction stands the second most correlated construct. Both teachers as well as students support the fact that technology influence the behavioural pattern of the individual and make them more comfortable with the learning situation and the content. Regarding the factors that most influence the adoption of ICTs by teachers, are effort taken and the controlling power. Social influence has got the minimum factor as per the study though it cannot be neglected as the value shows a good relationship.

IV. Mean difference analysis of the male and female students' perceptions on technology integrated classroom instruction

The result of the mean difference analysis is given in Table III

Table III
Result of the mean difference analysis

The mean value for the male and female sample is 1.44 and 1.54 and the standard deviation is 0.50 and 0.51 respectively. The critical ratio or the t-value is found to be 1.57 which is not significant at the 0.05 level. Therefore it meant that there is no significant difference between the perceptions on technology integrated classroom instruction between male and female students. In spite of any gender differences, students are in favour of technology friendly classroom.

CONCLUSION

Higher education institutions want to integrate technology though they face numerous challenges, such as resistance to change (McKnight et al., 2016). In this study also resistance to change is a major reason perceived by the teachers to integrate technology in classroom instruction. The study reveal that there is a need to develop a strong link between students' communication and schools to enable teachers to effectively put into practice what they learned. This research showed even though in essence the officials have decided to implement technology, there is still more that needs to be done to improve learning and practices. For that reason, decision makers need to craft resource policies that would ensure wider access to technology resources so that teachers and students feel encouraged to adopt it in their lessons. This research is about communication and interaction effect of technology use by the teachers and students in the school. However, it is equally important to understand the context in which the students were trained for their teaching. In closing, by providing the views of students described in this paper, today's teachers and policy makers can help students develop the communication skills and become the healthy persons of tomorrow.

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STUDENTS' NEEDS SATISFACTION WITH ASYNCHRONOUS ONLINE VIDEO LECTURES IN THE FLIPPED CLASSROOM ENVIRONMENT

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ABSTRACT
The study attempts to identify what motivates university students to study in the flipped classroom environment using asynchronous online video lectures (AOVL). A mixed-method research approach was applied in collecting the data. The data on students' learning experiences and attitudes were collected through questionnaire surveys and focus group interviews. Thirty-one respondents participated in the questionnaire surveys and 10 respondents were voluntarily interviewed in a focus group discussion. The quantitative result indicates that students had positive perceptions in terms of intrinsic motivation and self-efficacy. Consistently, the interview discussion also reveals that the use of AOVL had successfully increased students' learning motivation both in and outside of the classroom. Qualitative data were analyzed with thematic analysis and three key themes were identified, namely; (a) students' mastery of content materials outside of the classroom (b) students' interaction with peers and instructor, and (c) students' learning autonomy. Conclusions from this study affirmed that the use of AOVL in the flip-class setting had successfully promoted students' motivation based on self-determination theory (SDT) perspectives, namely: perceived competence, relatedness, and autonomy.
Keywords: Flipped classroom; Asynchronous online video lectures; Learning motivation; Self-determination theory; Information Management and E-Administration

INTRODUCTION

The application of online video lectures has become one of the most powerful elements of learning references in higher education and particularly used in the blended learning environment (Zainuddin & Keumala, 2018) or flipped instruction context (Perera, Zainuddin, Piaw, Cheah, & Asirvatham, 2020). The traditional chalk and talk lectures are now been replaced by some sort of digital technology such as online asynchronous video lectures, e-books, and other tools of innovative instructional pedagogies (Baepler, Walker, & Driessen, 2014). Flipped learning instruction with the use of online asynchronous video-recorded lectures is one of those alternatives implemented in current teaching and learning practices (Zainuddin, Haruna, Li, Zhang, & Chu, 2019). Bergmann and Sams (2012) stated that flipped classroom instruction has become a new culture of learning, which has extensively been researched and adopted by numerous educational institutions worldwide.

In the flipped classroom environment, students learn the contents outside the class using video lectures, followed by hands-on activities or discussions in the classroom. Video lectures are prepared by the instructor or third parties such as YouTube, Khan Academy, BBC News, or VOA News, and subsequently distributed to students as pre-class delivery content. Chen and Summers (2015) also notice that there are plenty of attractive video lectures from websites that can be adopted such as TED-Ed or YouTube. Students may watch the video outside the class and prepare some notes for in-class activities. During the class hours, students may learn through hands-on learning activities or discussions, and limited time is dedicated to the lecture's talks as they have watched the asynchronous online video lectures (AOVL) outside the class (Bergmann & Sams, 2012).

The notion of this instruction has provided numerous benefits which are inaccessible in conventional classrooms (Zainuddin et al., 2019). Students may watch the video lectures asynchronously outside the class at their paces and according to their preferred time. Students can also pause and stop video lectures if they need a break or rewind if they miss something. The class learning time will become more available for students to interact with peers, engage, and obtain immediate feedback from the instructor (Kim, Kim, Khera, & Getman, 2014). Furthermore, the most meaningful aspect of applying the flipped classroom is to enhance student-centered learning. Zainuddin et al (2019) note that students in the flipped learning environment may confidently participate in-class activity since they have learned the content at home, whereby the class time is more valuable for discussing and exchanging ideas.

STUDENTS' LEARNING MOTIVATION

Motivation is a willingness, enthusiasm, and initiative, forcing people to take action and achieve a goal (Cole, Field & Harris, 2004). In educational research, motivation is postulated as one of the fundamental portions to promote students' learning achievement. The emergence of digital technology in education has also recommended promoting students' motivation and learning engagement. Chaiprasurt and Esichaikul (2013) for

instance, claim that the adoption of technological means is useful to stimulate students' learning and especially in terms of students' involvement in learning or the so-called students' engagement.

The American Association for the Advancement of Science (1993) notices that the discovery of some sort of technological device aims at developing human life and making life more accessible and better. Technology has evolved the learning environment to be better and efficient. Students can now obtain several learning sources not only from the instructor, but also from the internet such as video lectures, which serve to promote levels of student participation in class and autonomous learning outside the class (Wallace, Sung, & Williams, 2014). Various motivational theories have widely been discussed in educational research, particularly in advancing students' autonomous learning skills (Deci & Ryan, 2002). However, little is known regarding the use of Self-Determination Theory (SDT) in terms of flipped classroom implementation, particularly related to perceived needs for competence, autonomy, and relatedness.

In general, the concept of SDT has been widely realized in discrete levels of education including schools and universities to examine the way to motivate students and instructors in the teaching-learning process. In self-determination theory, motivation is classified into intrinsic and extrinsic motivation (Abeysekera & Dawson, 2015). On the one hand, intrinsic motivation commits to students' enthusiasm to produce actions because of pleasure, interesting, engaging, delightful, exciting, and interesting (Deci & Ryan, 2002). On the other hand, extrinsic motivation leads to the desire to accomplish the reward and incentive and avoid being criticized or punished. Students with external motivation are more likely to expect a reward for what they do, and they are inherently non-autonomous personalities.

Figure 1 depicts the conceptual framework designed in this study adapted from the study of Zainuddin and Perera (2019). The design of this conceptual framework is based on three principles of Self-Determination Theory, namely; competence, autonomy, and relatedness. In a competent skill, students are expected to master the knowledge or concept. In a relatedness skill, students are assumed to form social interaction with peers and instructors. While in an autonomous skill, students are supposed to learn independently at their own pace or learning autonomously.
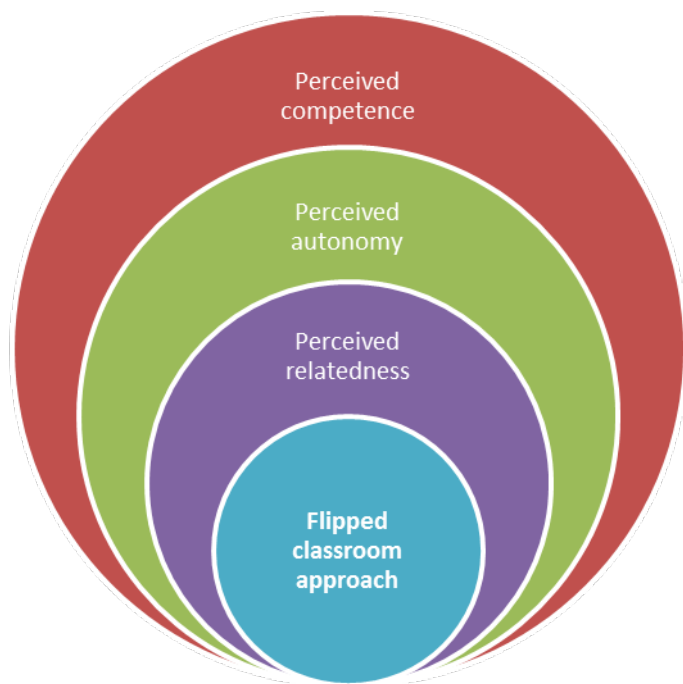
Figure 1. Conceptual framework of students' perceived needs satisfaction in the flipped classroom approach

Besides, according to Deci and Ryan (2002), besides intrinsic and extrinsic motivation, SDT also discusses the concept of amotivation and it is defined as the lack of any self-determination or the state of lacking the intention to act. However, this study only takes to explicitly focus on both students' intrinsic and extrinsic motivation in the flipped classroom with AOVL as recommended by Abeysekera and Dawson (2015). Employing SDT as a research framework, this study attempts to answer the following research question:

(1) What motivates the university students to access asynchronous online video lectures (AOVL) in the flipped classroom instruction?
(2) How do students perceive competence, autonomy, and relatedness in their learning behavior?

METHODOLOGY
This study applied a case study design consisting of data from a quantitative questionnaire survey and in-depth qualitative focus group interviews. A mixed-method research approach was used which is in coherence with a statement of Creswell (2013) that it would strengthen both quantitative and qualitative data and support each other in findings and a discussion. The research participants were undergraduate students from a private university in Indonesia –the course was Information Management and E-Administration. The researcher employed a purposeful sampling since it explored a specific time, place, group, community, and person (Creswell, 2013). Since only one class adopted the flipped classroom instruction with the AOVL, and is, therefore, the sample of this study was selected from this group of participants. Some 31 students completed survey questionnaires and 10 students voluntarily participated in a focus group interview.

The survey questionnaire was adapted from the previous studies of self-determination theory (Lee, Lee, & Hwang, 2015; Sørebø, Halvari, Gulli, & Kristiansen, 2009), and is based on a 5-point Likert scale ranging from "strongly agree" to "strongly disagree". It consists of 3 items of students' learning autonomy (items 1-3), 4 items of students' competence (items 4-7), and 3 items of students' relatedness (8-10). The survey questionnaire took approximately 15 minutes or less to complete.

To support the quantitative findings, qualitative data were subsequently collected through an in-depth focus group interview. The interview questions were designed in the form of a list of topic questions focused on students' motivation for learning based on competence, relatedness, and autonomy.

In this study, the researcher analyzed both data separately, starting with quantitative data, and followed by qualitative data. This study is considered as an explanatory sequential design, where qualitative findings help explain the initial quantitative results (Creswell, 2013). The questionnaire data were analyzed in descriptive statistics and one-sample *t-Test* using the SPSS software. The goal was to summarize a particular set of data for a graphical display (Johnson & Cristensen, 2008). The questionnaire's 5 Likert scales were interpreted in ordinal data to determine that one score was higher than the others. The focus group interview data were analyzed using thematic analysis. This analysis was accomplished through the process of coding in six stages to discover meaningful patterns, namely: familiarization with the data, generating initial codes, searching for themes among codes, reviewing themes, defining and naming themes, and producing the final report based on themes (Braun & Clarke, 2006).

The flipped classroom instruction was implemented throughout the semester of study (January 2019 - May 2019) as a way to observe students' perceived competence, relatedness, and autonomy and the progress in their learning activities. In its practice, out-of-class activities are as follows: online video lessons prepared and distributed to students, the students watched video lectures online asynchronously and were required to take notes. All video lectures were recorded and distributed to students' learning before class (See Figure 2).
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Pentingnya Etika Administrasi dalam Organisasi Publik
Figure 2. A sample of video-recorded lecture
Source: https://www.youtube.com/watch?v=pau9rFq5I04&t=79s

For in-class activities are as follows: the instructor checked students' notes, a short quiz was also conducted to help ensure that students came to class prepared or have watched the video lectures at home. The instructor then integrated hands-on learning activities and experiential learning events which yield immediate feedback through discussion with peers and/or instructors, so that more class time was available for interactive activities.

FINDINGS

The processing of findings of this study began with the analysis of survey responses, continued with the focus group interview. According to the response rate analysis, 31 students completed the survey and 10 students were involved in the focus group discussion.

Quantitative results

This section attempts to answer the research question addressing the students' motivation using the AVOL in the flipped classroom instruction. The preliminary results indicated that the sample comprised 17 female students and 14 male students. Descriptive statistics (percentage, means, and standard deviations) as a preliminary analysis are presented in part of the paper (see Table 1).

Table 1. Descriptive statistics of students' positive attitudes toward needs satisfaction (motivation) ($N = 31$)

Items	Mean	Standard Deviation
Perceived autonomy		
1. Using online video outside the class enabled me to pause, stop, rewind and fast-forward according to my learning needs	4.55	0.77
2. I was able to watch the video lectures independently at my own time	4.22	0.99
3. I would have more control in my coursework while using online video lecturers	4.10	0.94
Perceived competence		
4. Using the video lessons outside of the classroom enabled me to better understand the subject.	4.03	0.91
5. After watching online video lectures outside the class, I felt prepared for in-class activities	4.68	0.70
6. I am confident in my ability to learn through online video lectures	4.06	0.92
7. I felt very competent after watching video lectures outside the class	4.10	1.01
Perceived autonomy		
8. I felt I learned a great deal from other students in this class.	4.20	0.98
9. I was able to share my knowledge and understanding with peers	4.16	0.97
10. Watching online video outside the class made me confident to interact with other students and instructor in the classroom	4.41	0.88

Items 1-3 report students' learning autonomy in the flipped classroom instruction. Item 1 shows students' positive perception toward the controlling of the AVOL, which allow students to control the pace by which they are learning. This reveals that 90.3% ($M = 4.55$, $SD = 0.77$) of the students confirmed that the use of the AVOL outside of the class enabled them to pause, stop, rewind and fast-forward according to their learning needs or as many times as they wish. Item 2 also confirms that 83.9% ($M = 4.22$, $SD = 0.99$) of the students could use the AVOL independently to facilitate their learning. It allows students to have more flexible time to study and understand the contents deeply. While the analysis of item 3 reveals that 83.9% ($M = 4.10$, $SD = 0.94$) of the students had more control in their coursework while using online video lecturers. Students could search for additional materials, if needed, to accelerate learning and mastery of the content before attending class.

Items 4-7 report students' learning competence in the flipped classroom instruction. In item 4, most students (83.4%) believed that using the AVOL outside of the classroom enabled them to better understand the subject. This implies that watching the videos regularly before the class is essential to support students' learning and understand the topic more easily. For item 5, it shows a high percentage of students' responses, where 93.5% of the students ($M = 4.68$, $SD = 0.70$) acknowledged that after watching online video lectures outside the class, they felt well-prepared for in-class activities. This implies that the better students are prepared, the more learning that can be achieved. Furthermore, the report of item 6 shows that 83.9% ($M = 4.06$, $SD = 0.93$) of the respondents consistently mentioned that they were significantly more confident in their skills and ability to deal with anything during the class activities. This finding is in correlation with the report from item 7, where most of the students (83.9%, $M = 4.10$, $SD = 1.01$) acknowledged that they felt very competent after watching video lectures outside of the class and were more engaged in-class activities.

Items 8 reported students' perceived interaction with peers and instructor (83.9%, $M = 4.19$, $SD = 0.98$). This report reveals that most students learned a great deal from other students, particularly in a team-building exercise and a group discussion. Students show their willingness to talk and share knowledge with each other in a conversational or task context. This finding was in correlation with the finding of Item 9, where 83.8%, ($M = 4.16$, $SD = 0.97$) of the students acknowledged that they were able to share knowledge and understanding with peers regarding the content from the video lectures. Finally, as a consequence of viewing online video lectures before coming to class, Item 10 reveals that 90.4% ($M = 4.41$, $SD = 0.88$) of the students could be more confident to interact with their peers and instructor in the classroom.

From items 1-10, we found three items with a greater percentage and mean of respondents. Firstly, item 5 with the highest percentage and mean, implies that the use of online video lectures as an asynchronous classroom preparation has provided the opportunity for students to address gaps in knowledge preparation and to build a framework for higher-level understanding and control action. This concludes that the better students are prepared, the more learning that can be achieved. This finding confirmed students' philological need for competence based on SDT. Secondly, item 10 reveals that the students could be more confident to interact with their peers and instructor in the classroom. This implies that the use of asynchronous classroom preparation using online video lectures allows students a chance to talk in the classroom, helps them learn from others, views topics from multiple perspectives, and enhances critical thinking and problem-solving skills. This finding confirmed students' philological need of relatedness based on SDT. Thirdly, item 1 confirms that the use of the AVOL outside of the class enabled students to control the lectures, by pausing, stopping, rewinding and fast-forwarding the video according to their learning needs or as many times as they wish. While watching the video, they could also take notes on the material in preparation for class activities and discussions. This finding confirmed students' philological need for autonomy based on SDT.

Qualitative results

The qualitative approach aims for an in-depth understanding of students' perceptions of learning motivation using the AOVL in the flipped classroom. This analysis explains in more detailed and comprehensive information to support the preliminary quantitative finding. Findings indicate that the students in this study were in general motivated to learn through online video lectures outside of the class. They believed that this instruction could help improve their autonomous learning, accelerate learning, and increase students' engagement and interaction with peers during classroom activities. From the focus group interview data, students' motivations to use AOVL were captured in three main themes comprising, (a) students' mastery of content materials outside of the classroom (b) students' interaction with peers and instructor, and (c) students' learning autonomy. The following section describes each of the themes:

Mastery of content materials outside of the classroom

Several students (S1, S3, S6, and S10) reported positive perceptions with the use of video lectures as the pre-class lecture materials. They acknowledged that the use of online video lectures let them move at their own pace, rewind to review portions and skip through sections they already understand the meaning. Students come to class with some active learning activities such as a discussion or presentation. One stated that they could replay or pause the video when missing some points. She indicated her opinion as follows:

> "*I can learn a difficult topic step-by-step. Sometimes, I need to pause and replay the video when I find the lecture speak very fast. I try to pause the video and look for the meaning in a dictionary, and after finding the meaning I write it down on my note and continue listening to the video. I watch and repeat several times until I get the whole points from the lecture*" (S1).

Similarly, another student remarked:

"*Yes, different videos have different lecturer, so when I find a lecturer give a talk with unclear words, I need to pause and repeat it to catch the point. But, anyway, I like this way of learning because I could prepare to learn and master some materials before coming to the class. You know, if the lecture is delivered in the class, not all students could get the pint in a single explanation; different students have different capabilities in understanding the lectures. So that by watching the video we can learn according to our needs*" (S6).

With the online video lectures, instruction used to occur in class is now accessed at home. The interview data also revealed that the students felt confident to talk in-class discussion and they came to class prepared. One of the participants in the focus group commented as follows.

"*By watching video lectures outside the class, I feel confident to speak in the class. I have prepared some notes at home and I have a concept of what I should say in the class. Also, I feel confident to ask a question during a discussion*" (S6).

Related to this issue another student also noticed this during a focus group's discussion.
"*This class gave me more time to understand learning materials outside the class and this is very helpful for me, help me to perform better in the class, I believe that the more I practice, the more makes me perfect. I think, if all students have good preparation outside of the class, they will also be great and awesome during the class activities. All students will be active and confident to share the idea and ask a question because they have prepared a note before coming to class*" (S10)

Another student noticed that she could formulate questions about subject points that might need further explanation in the class.

"*At least, about fifty percents I knew the main topic that would be discussed in the class.....and although I didn't understand some important points on the video, I could prepare a note and bring to class to ask other students and lecturer*" (S8)

Students' interaction with peers and instructor
The second theme emerged was that flipped learning improves the quality of peer learning and interaction between students. Students acknowledged that the in-class activities provide more opportunities for interaction among peers as well as with the instructor as opposed to traditional lecture.

"*In this class, I have more opportunity to interact and collaborate with my friends, ask questions and discuss some important topics. This is very different from my other class.....we only listen to lectures and doing some exercises. We don't have such activity.....I mean a group discussion or knowledge sharing among students. I think this class is more interactive than the others, yeah, better, according to my experience*" (S6)

Another student emphasized the advantages of watching video lectures outside of the class that she became more confident to talk with other students regarding the topic. This belief is reflected in the following statement from a student participant.

"*After watching video lectures outside the class I feel more confident to express my idea with other students and lecturer. If I don't watch the video, of course, I don't have enough preparation and I feel not confident to interact with others, especially in a discussion session*" (S4).

Students also stated that they could obtain new ideas and problem-solving skill from a peer-learning activity. One stated:

"*During the class session, I listen to other students' talk and I learn many new things, I also learn how to work in a group and solve a problem together, learning in a team is a good idea I think*" (S1)

Similarly, related to teamwork and problem-solving skills, another participant in the focus group commented that they also learn a leadership skill through group work in the class. One of the participants in the focus group commented as follows.

"*From a group work in the class, we can exchange idea and knowledge, and we receive much information from other students. I think through this activity we can learn not only to solve a problem but also we learn about a leadership skill, and this skill is very relevant to our real world in the future, how we work later with other people such in the office, school, or company, and we need to make it as a culture in our learning activities, and supposed in other subjects though*" (S5)

Students' learning autonomy

The AOVL does not only support students to prepare lesson outside of the class and interact with peers in the class but also allow students to learn the subject autonomously, accessing the lesson at any time, any place and as many times as they please. As University students, they believed that they could handle independent learning more readily in the flip-class environment. Students enabled to take responsibility for their learning, to be more self-directed, to make decisions about what they will focus on and how much time they will spend on learning the contents or watching video lectures both inside and outside the classroom. The students shared their views regarding their independent learning outside the class. Most of the students revealed that their flipped classroom experience improved their self-paced learning. Their relevant responses include:

"*I could control my learning, study whenever I want and I could replay several times when I need. If listening to a real lecturer's talk in the class, we probably could not pause and replay the video according to our need, but using the video is very helpful*" (S1)

"*It is great that the lectures are moved on the video, we can bring home the lecturer. I mean the lecturer is now more flexible teach me through a video. I can listen to my home and at any time I wish. I think this is a kind of flexible learning*" (S3)

"*I think such kind of learning method is very important to support our independent learning skills, mmm, because as a university student we need to be more autonomous, not only in watching video lectures in this course but also to train us to become more autonomous to read more books and write more papers after this course*" (S4)

Watching online video lectures outside the classroom could strengthen student autonomy leading to more personal responsibility for learning, particularly for improving listening skill. The following student voiced out this belief. One student recommended using additional material besides video lectures to improve his reading skills.

"*I think in the future of flipped classroom, additional material such as PowerPoint Slide show or PDF also provided. So, besides watching and listening to videos, we also practice reading and reviewing some texts*" (S5)

The employment of this instruction has fostered students' autonomous learning because they were provided with autonomous instruction employing video lectures. However, one of the students recommended that the future of flipped classroom practice should use various and multiple materials, and not only limited to the video lectures. This implies that additional activities or a variety of instructional tools should be used in future studies instead of just videos to foster students' autonomous learning.

Discussion

Findings from both quantitative and qualitative data confirmed that students were positive about their motivations studying in the flipped classroom environment using the asynchronous video-recorded lectures. The findings of the study affirm that students have fulfilled the three basic psychological needs of SDT. These results support recommendations made by Abeysekera and Dawson (2015) that the use of SDT in the flipped classroom environment might improve student motivation to produce basic psychological needs of competence, autonomy, and relatedness. In terms of students' competence, the findings reveal that all students felt competent with tasks and activities, and able to control learning outcomes. In the focus group interview, students acknowledged that they came to class prepared and felt confident to talk in a class discussion. One student noticed that she could formulate questions about subject points that might need further explanation in the class while another acknowledged that using video lectures had motivated her to listen to the topic step-by-step and sometimes replay or pause the video when missing some points. Besides, students also come to class with some active learning activities such as a discussion or presentation.

In line with this, several studies of the flipped classroom approach have been done and reveal that the participants have fully engaged in the learning tasks, making them more active and competent in the whole

learning process. Students take ownership of their learning and are thoroughly prepared before coming to the class to work in pairs (Hung, 2015). Kim et al., (2014) also notice that students feel motivated to attend class and engage in in-class activities because of having prepared beforehand at home. In this stage, students also would not be bored, restless, disruptive, and disengaged in learning activity because they would no longer be listening to the teacher's talk all the time in the class. According to Deci and Ryan (2002), the more competent individuals perceive themselves in an activity, the more intrinsically motivated they will be at that activity. The flip-class in this study also recorded students' learning autonomy. The flipped model had successfully integrated a flexible learning environment, established student-centered learning, and advanced responsibility, active and autonomous learners. Most students considered that learning in the flip-class had encouraged them to study independently at their pace. They were aware that, as adult learners, they needed to explore their knowledge independently and not always depend on the instructor as the center of knowledge and information.

By assigning small group activities, instructors can engage students in multiple levels of critical thinking (Perera et al., 2020). The findings of this discussion were supported by a current study reported by Zainuddin and Perera (2018) that the flipped classroom setting have successfully constructed students' problem solving and critical thinking skills and enabled students to interact with each other in a small group discussion and gain higher levels of understanding in learning. This implies that students in a group learning situation are the best way to foster critical thinking or higher-order thinking skill. This finding of this study was also alike with the results reported that the flipped classroom instruction enables students to get out of their seats and interact with each other, to build learning communities and exchange ideas to solve problems (Farida, Alba, Kurniawan, & Zainuddin, 2019; Ishak, Kurniawan, & Zainuddin, 2019; Kim et al., 2014; Baepler, 2014; Love, Hodge, Corritore, & Ernst, 2015; Little, 2015; Sun & Wu, 2016). This can be assumed that the more interactive individuals perceive themselves in activities, the more intrinsically motivated they will be.

Conclusion and recommendation

The study summarizes that the flipped classroom creates the potential for student-centered learning, peer interactions, and personalized instruction. They have a greater opportunity to work at their own pace outside of class hours. Consequently, it has promoted students to develop self-management skills, and allow them to engage in interactive learning in the class through a presentation or discussion activity. Students in this study also reported that they were more likely to engage in collaborative decision making with other students and engage in problem-solving and critical thinking. Students in this study are given autonomy to choose time, place, speed and access times to master the content outside of the class. This is in coherence with the previous study, reported that students in the flipped classroom can pause, rewind, fast forward or skip any parts of a lecture video in an attempt to better manage their working memory (Abeysekera & Dawson, 2015). The use of online video lectures as independent learning tasks outside of the classroom improved students listening skills. Students are then more confident in their ability to communicate effectively in front of a large audience in the class (Zainuddin, Habiburrahim, Muluk, & Keumala, 2019). This implies that providing more practice for listening skills through video lectures outside the class and conversation practice in the class would lead to increase intrinsic motivation, which is correlated with the need for autonomy and competence.

However, this study has a small sample ($N = 31$) in responding to a questionnaire survey. Hence, future research should consider a big sample in terms of size. The interview for data generation was also voluntary with a small sample ($N = 10$). Those who were culturally timid and passive in-class activities may not have been confident enough to volunteer themselves in the interview sessions. Hence, there probably remain other views that were not included. Future research should also consider using a big sample in the interview or focus group discussion.

Acknowledgments

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THE EFFECTS OF USING DIGITAL LITERACY IN THE ELEMENTARY CLASSROOM

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ABSTRACT

The purpose of this mixed methods study is to determine the effectiveness of digital literacy in the elementary classroom. Researchers measured student growth and performance due to the effects of digital literacy. Past studies have found that the implementation of digital literacy provides many positives as well as few limitations on student learning. For this research study, two elementary classrooms researched. These classrooms, a fourth grade and kindergarten classroom, are from the same school district but have different student populations. In each classroom, a group was exposed to digital literacy consistently while the other group did not. Researchers collected quantitative data to determine the effects of digital literacy and how it enhanced student learning. The results showed no major benefit when using digital literacy tools in the classroom. Further recommendations for this study would be to extend the research to a full year, rather than six weeks as well as provide more digital tools for students to use. Another recommendation for this study was to expand the research population to an entire primary grade level rather than two classes.

Keywords: Digital literacy, Elementary Education, Reading, Technology implementation

INTRODUCTION

As many of us know, the style of teaching and the curriculum being taught is constantly changing. Educators are continually being pushed to keep up with the times and to always look for the next best thing to implement in the classroom. Because of this, it is no surprise that the use of technology is becoming essential in teaching. Also, with the generation of students we are teaching today, they need to be taught differently. Today's students have changed and grown up differently. They are no longer the students that the educational system was created to teach. (Prensky, 2001). It is necessary for teachers to implement technology in the classroom to engage learners in various types of literacy in the 21st century classroom environment. (Hett, 2012). This study will highlight the effects of implementing digital literacy in the K-5 classroom.

Previous studies have found that students gain greater comprehension and fluency of texts when the texts are online, or e-readers, rather than printed texts (Vaughn, 2016). These online texts allow students the option of highlighting, voice recording, audio narration, practicing of fluency, and the ability to breakdown words into decodable chunks (Dalton, 2014). Studies have also found that there is greater student engagement when technology is involved. For example, providing students with technological tools to conduct common searches can make students more interested in the topic (Hamilton, 2016). The implementation of technology can also make learning more engaging by allowing student choice and creating a more student-centered environment (Thiele, Mai, & Post, 2014).

Research has shown that students today process information differently from students in the past. (Prensky, 2001). To meet the needs of today's students, teachers need to implement digital literacy into the elementary classroom. The problem is that not all teachers are implementing digital literacy into their teaching and making it accessible for their students, even though it has been proven to be beneficial when educating students.

While there have been studies on the use of digital literacy, it is important that the research on this topic is continued so the effects can be observed in different school settings. Also, technology is constantly changing and

advancing. New technology tools and resources for the classroom are continually becoming available. Because of this, certain tools being examined in the research may have not been available or implemented in research studies of the past.

The primary purpose of this study was to determine the effects of digital literacy by measuring student growth and performance. This study took place over a semester in both a kindergarten and 4th grade classroom. The kindergarten classroom participating in the research study was from a small, non-title one school while the 4th grade classroom was be from a larger, title one school. By using both a kindergarten and 4th grade classroom, data was used to compare the two research groups in order to show the effectiveness of digital literacy depending on age level.

To properly measure the impact of digital literacy, students were monitored using running records to measure accuracy in reading and words read per minute. To measure student engagement, an on/off task form was utilized. This study aimed to answer the following questions: (1) to what extent did digital literacy improve student growth and performance? (2) are the effects of digital literacy different when compared between intermediate and primary grade levels? (3) does the use of using a digital technology tool for reading, increase the engagement of students?

This study was intended to prove to teachers and administrators the effects of implementing digital literacy in the elementary classroom. Understanding the use of digital literacy in the classroom would provide a higher level of engagement in the classroom, more accurate reading, and possibly a higher fluency rate. Furthermore, this study aimed to bring awareness to teachers by proving the impact digital literacy can have in an elementary classroom and hopefully encourage educators to make the effort to incorporate technology into their teaching and student's learning.

LITERATURE REVIEW

When looking at past research, it has been found that there are many benefits to using digital literacy in the elementary classroom. These benefits include increased student engagement, improvement in fluency, increased knowledge of technology tools, and exposure to the outside world. There are minor setbacks when using digital literacy in the classroom such as taking away from the content of the curriculum as well as inappropriate use.

INCREASED ENGAGEMENT

When looking at what is considered a good classroom environment, one of the key factors is student engagement. When students are engaged in a lesson, they are motivated to learn and go deeper into the content. Using digital literacy in the classroom is a great way to do that. In the article, *Citizenship in a Digital World,* the author explains how the use of digital literacy can provide engagement for young students. The author states, "Today's children are rarely satisfied with using only the library's print materials and online databases. With the increasing sophistication of digital technologies, even young students can bypass the local librarian to search for resources, tools, and information online through common search engines" (Hamilton, 2016, p. 11). The author goes on to discuss how providing students with technological tools to conduct common searches can make students more interested in the topic.

IMPROVED FLUENCY IN READING

Nowadays, teachers are moving on from the times when children can only read stories from printed text books. There are many online stories that allow students to read, listen, and even makes notes and highlight areas while reading. According to the article written by Vanessa Vaughn, there are several benefits to student learning when digital text is incorporated in the classroom. One study of kindergartners from the article found that, when comparing e-readers and printed text, students' comprehension and fluency was much greater on texts provided on e-readers (Vaughn, 2016). She also added benefits from a study of second grade students that indicated the use of technology tools such as highlighting and notetaking proved to be more engaging for students, and made the reading experience more rewarding (Vaughn, 2016). In both cases, students are showing more growth and being given the opportunity to work with technological tools in class.

INCREASED KNOWLEDGE OF TECHNOLOGY TOOLS

With implementing technology in the classroom, students will gain many ideas and resources to use that could also benefit them in the future when applying for jobs. There are many technology tools and resources available for students and teachers to use, each having their own benefits. Google Drive is an example of a technology resource that has positive impacts on the classroom. There are many options with Google Drive, such as Google Docs, Presentations, Sheets, Classroom, etc. Google Docs specifically is a program much like Microsoft Word, where students can type on a blank document. Since Google Docs can be "shared" with other users, it allows for

collaboration over a document. Students can work on one document simultaneously from different digital devices. There is also an option for commenting on the document, where users can chat and share ideas through comments. Another great example of a technology tool that can be implemented in the classroom are blogs. As Hagler stated, "Blogs/chat/instant messages can be used to motivate students to write" (Hagler, 2013, p. 19). The author then goes on to talk about how students will spend more time thinking about what they are writing because they know it will be read by others, not just the teacher. A positive the author, Hagler, mentioned is that teachers can teach students how to blog in a professional manner, thus helping them later down the road with professional endeavors involving blogging. Through these technology tools, students are collaborating and learning through teamwork. These are important qualities, according to Hagler, as she stated, "Learning to collaborate and be a team player is frequently at the top of the list of skills employers desire in their employees" (Hagler, 2013 p. 20).

CONNECTING TO THE OUTSIDE WORLD
Not only does technology connect students with each other, but it also connects them with others in the outside world as well. The use of technology helps with exposing students to different cultures, ways of living, religions, beliefs, values, and much more! Just as it was stated, "Teachers and students alike can be miles apart, across oceans and continents, and they can share, collaborate, and create information with the touch of a keyboard, click of a mouse, or via video using their handheld mobile device" (Thiele et al 2014, p. 80). There are many possibilities with exposing students to the outside world through implementing technology in the classroom.

SETBACKS TO USING DIGITAL LITERACY
Although there are many proven benefits to using digital literacy in the classroom, some researchers have found setbacks to using this form of technology. For example, studies have shown that the use of digital literacy takes away value from the text and content. Researcher, Eileen Honan, found that teachers have to spend a lot of time teaching the technological tools, and the students become so consumed with using them properly, that students are losing the focus on the actual content (Honan, 2008).

Another setback researchers have found when using digital literacy is the misuse of online tools. Inappropriate relationships and cyberbullying have been reported when students have the ability to explore on their own (DeCoskey, 2011). To counter this issue, it is necessary teachers are supervising and teaching students proper digital citizenship skills before online use.

SYNTHESIS OF PAST RESEARCH
It is important to consider why digital literacy needs to be implemented into the elementary level classroom. According to Don Tapscott, "This generation, the Net Generation, is the first generation to grow up digital" (Tapscott, 2014). Because of this, our student's brains are processing differently. Author, Marilee Sprenger, uses the term "digital brain" to describe how students are learning. Her research has found that today's students are used to being connected with technology and multitasking (Sprenger, 2009). With the changing of student learning, educators need to start meeting the new needs of students. This can be done using digital literacy.

As proven by the research, there are many benefits to implementing digital literacy in the elementary classroom. Those benefits include an increased student engagement, greater comprehension and fluency in reading, the exposure to technology tools, and the ability to connect students to the outside world. Each of these benefits has its own advantage to enhancing the learning environment. When a classroom takes the initiative to implement digital literacy, the research proves positive outcomes in student learning.

Along with these benefits of using digital literacy, there are limitations as well. Some researchers have found that using digital literacy can take away from the content of the curriculum. For example, if a student focuses more on how to use the technology tool, it may take away their focus on the actual content. Another limitation that was found in past research was the misuse of digital literacy. This included inappropriateness and cyberbullying.

Research studies show that there are many possibilities that digital literacy can bring to a classroom to enhance the learning environment. There are many positives to implementing technology, as well as a few limitations. Although these setbacks bring awareness and concern, research has proven that the benefits of using digital literacy outweigh the limitations. Technology implementation will not only enhance the classroom, but also provides lifelong learners in the community.

METHODOLOGY
For this study, researchers used an approach that involves quantitative data collection (Plano Clark & Creswell, 2010). The quantitative data was collected and analyzed through the use of a casual-comparative research

approach. The study was conducted in two different schools in the same district in Central Illinois. The research site consisted of 16 elementary schools in the district. One school chosen for the study is a Title 1 school, and according to Illinois Interactive Report Card (IIRC), the total percentage of low-income students was 48.8%. The demographics of the school include 73.1% Caucasian, 15.6% Black, 5.4% Hispanic, 5.2% Multiracial, 0.2% Asian, 0.2% American Indian, and 0.2% Pacific Islander. For the second school in the study, the percentage of low-income students was 15.1%. The demographics of the second school consist of, 85.9% Caucasian, 8.6% Asian, 2.7% Multiracial, 1.6% Black, 1.1% Hispanic, and 0% of American Indian or Pacific Islander. The participants in the study were involved a classroom of fourth grade students from the Title 1 school, and a kindergarten class from the other participating school.

INSTRUMENTATION

Data was collected through running records, and anecdotal notes that were taken on each student. The running records were measurement tools for data that was provided by the district. The protocol for collecting data through these tools involved the researcher conferencing with students individually throughout the study. For the running records, students participating in the study were asked to read a section from a reading on a digital tool, while the researcher completed the form. In addition, other anecdotal notes were taken by the researcher during the individual conference time, or during a small group, for example, guided reading.

To measure student engagement during the study, the researchers conducted an on/off task form for individuals participating in the study. When using this form, researchers observed one student that is reading on a digital tool to a student who is reading in a book. Every thirty seconds, the researcher marked if the student is on task or off task. Off task behavior included out of seat, talking to others, fidgeting, or anything else that is not reading. The researchers recorded data for fifteen minutes. After collecting the data using the on/off task form, researchers compared student engagement between students who were reading on a digital tool to those who are reading in a book.

Assessments such as running records was administered by the researchers individually for each student participating in the study. The on/off task form was administered by the researchers during the study. The running records was recorded using a digital copy of the text with one group of participants, as well as a printed copy for the other group. Data was collected evenly between the two different groups of participants. This means the group using digital literacy and those who are not would have the same amount of data collected. The data collected throughout the study was used to analyze and determine the effectiveness of using digital literacy in the elementary classroom.

RESULTS

The purpose of this study was to determine the effects of digital literacy by measuring student growth and performance in the elementary classroom. The results were as follows.

RESEARCH QUESTION ONE: To what extent did digital literacy improve student growth and performance, and the effects of digital literacy comparing intermediate and primary grades?
The following data was collected during a 6-week period in a kindergarten and 4th grade classroom. Running records were used to measure reading accuracy and words read per minute. The book levels listed are used from the Fountas and Pinnell assessment. This assessment is used in grades K-5 at all of the schools in the district in question. The book levels start out at level A and continue all the way to level Z. Each grade has separate levels that students are required to meet by the end of the year. As book levels increase, the level of difficulty increases. In kindergarten students are required to read at book level C by the end of the year, while at the 4th grade level, students are expected to be reading at book level U/V by the end of the year. Students are able to move book levels throughout the year based on their reading accuracy and comprehension score. Book levels are included in the results to show the academic level of the student used in the research.

Figure 1: Running Records of Kindergarten Classroom Student Participants

Name	Date	Book Level	Accuracy	WPM	Medium
Student 1	9-Feb	G	96%	62	Book
	10-Mar	G	97%	50	Book
Student 2	8-Feb	G	95%	23	Book
	6-Mar	G	100%	64	Book
Student 3	10-Feb	C	90%	11	Book
	16-Mar	C	93%	15	Book
Student 4	10-Feb	C	88%	13	Book
	2-Mar	C	94%	33	Book
Student 5	9-Feb	G	98%	43	Book
	10-Mar	G	99%	60	Ipad
Student 6	9-Feb	G	92%	39	Book
	6-Mar	G	92%	27	Ipad
Student 7	13-Feb	C	88%	14	Book
	13-Mar	C	92%	17	Ipad
Student 8	10-Feb	C	90%	8	Book
	27-Feb	C	91%	11	Ipad

Figure 2: Running Records of 4th Classroom Student Participants

Name	Date	Book Level	Accuracy	WPM	Medium
Student 1	1-Feb	O	98%	100	Book
	8-Mar	O	98%	120	Book
Student 2	3-Feb	S	98%	96	Book
	16-Feb	S	99%	100	Book
Student 3	2-Feb	S	96%	74	Book
	16-Feb	S	96%	76	Laptop
Student 4	2-Feb	O	95%	38	Book
	23-Feb	O	96%	37	Laptop

The results showed that on average, the kindergarten students reading from a book instead of an iPad had a greater increase in reading accuracy. Students that used only books showed an average of a 3.75% increase in accuracy, while those that used ipads showed an average of a 1.5% increase in accuracy. The overall data showed that all students either stayed the same or increased their reading accuracy when they used a digital literacy tool. Words per minute among the kindergarten students did not show the same trend, although 75% still showed an increase. The tool they used, whether book or iPad, did not result in a difference in the data (Figure 1).

In figure 2, The results for the 4th grade students showed that, the average increase of reading accuracy was identical between the group that used books and the group that used laptops. Overall, 75% of 4th grade students increased their words per minute. This data reflects the use of both a book and a laptop.

RESEARCH QUESTION TWO: Does the use of using a digital technology tool for reading increase the engagement of students?
The following data was collected during a 6-week period in a kindergarten and 4th grade classroom. On/off task forms were used to measure engagement during specific timed intervals.

Figure 3: On/Off Task Records of Kindergarten Classroom Student Participants

Book/Ipad	On Task	Interval	Percent on Task	Overall Average % on Task
Book Student #1	11	24	45.83	**Book Students- 55**
Book Student #2	14	24	58.33	
Book Student #3	19	24	79.16	
Book Student #4	11	30	36.67	
Ipad Student #1	16	24	66.67	**Ipad Students- 76.67**
Ipad Student #2	21	24	87.5	
Ipad Student #3	19	24	79.16	
Ipad Student #4	22	30	73.33	

Figure 4: On/Off Task Records of 4th Classroom Student Participants

Book/Ipad	On Task	Interval	Percent on Task	Overall Average % on Task
Book Student #1	26	30	86.66	**Book Students- 86.67**
Book Student #2	24	30	80	
Book Student #3	28	30	93.33	
Book Student #4	26	30	86.67	
Laptop Student #1	20	30	66.67	**Laptop Students- 85.83**
Laptop Student #2	27	30	90	
Laptop Student #3	30	30	100	
Laptop Student #4	26	30	86.67	

Figure 3 shows that in the Kindergarten classroom, students who used technology to read were on average about 20% more on task than those that used a book. Figure 4; However, shows that the same did not hold true for the 4th grade classroom, where only a 1% difference exists, with those reading a book actually being more on task than those reading from technology. Overall, when analyzing the reading accuracy of all kindergarten students, the results proved that all students either stayed the same or showed an increase of their reading accuracy when they used a digital tool. Fluency did not show the same results, although, the majority of students displayed an increase in words read per minute. Analyzing the engagement data revealed that kindergarten students that used technology were on task an average of 20% more than those that used a book. In comparison, the results from the reading accuracy of 4th grade students showed that there was no increase or decrease when using either a digital tool or a book. Fluency results showed that all students, regardless of whether they utilized a digital tool or regular book, increased their words read per minute. In addition, students that used technology showed 1% less engagement than those who read a book.

DISCUSSION

The purpose of this study was intended to determine the effects of digital literacy by measuring student growth and performance. The research was based around the following three questions: To what extent did digital literacy improve student growth and performance? Are the effects of digital literacy different when compared between intermediate and primary grade levels? Does the use of using a digital technology tool for reading, increase the engagement of students? What follows is a discussion of the results.

RESEARCH QUESTION ONE: To what extent did digital literacy improve student growth and performance?

To address this research question, data was collected through the use of running records to examine both reading accuracy and the number of words read per minute. This data was collected over a 6-week period in both a kindergarten and a 4th grade classroom. Students who were examined were at various reading levels at the beginning of this study.

Based on the results that were collected, the researchers do not believe that the research question was adequately addressed. While the results that were collected certainly do not show that using a digital tool was detrimental to

student learning, they also do not show that they were beneficial. It is difficult to draw any sort of significant conclusions about the use of a digital tool for reading alone and its effect on student growth and performance.

When the results were examined for reading accuracy, a clear trend emerged for the kindergarten students. While all students seemed to show an increase in their reading accuracy throughout the course of the study, the students who used a book actual showed a larger increase in accuracy than those reading with a digital tool, which in this case happened to be an iPad. Students that used only books showed an average of a 3.75% increase in accuracy, while those that used iPads showed an average of a 1.5% increase in accuracy. Examination of the data collected for words read per minute for the kindergarten students were similar in their regards to helping answer our research question. While 75% of the students that we tested showed gains in their abilities for words read per minute, there was no distinguishable difference between those students who read from a book versus those who read from an iPad. In fact, there were equal amounts of students who showed increases as well as decreases in their words read per minute in each group.

When the results were examined for reading accuracy and words per minute for the students in the 4th grade classroom, trends similar to what was seen in the kindergarten classroom were revealed. 75% of the students in the 4th grade classroom increased their words read per minute during the study, with equal numbers of students showing increases using books and digital tools for reading. In addition, an examination of reading accuracy communicated an equal average increase between the students using a digital tool and those reading from a regular book. One thing worth noting here is that the equality of the results of the two groups of 4th grade students may be attributed to the fact that these students do not have as much room for growth, and an assumed smaller variability in their performance due to their advanced age in comparison with the kindergarten students.

Previous studies have shown that the use of a digital tool can have vast benefits when it comes to reading comprehension and fluency. Furthermore, previous research has found that students gain greater comprehension and fluency of texts when the texts are online, or e-readers, rather than printed texts (Vaughn, 2016.) These online texts allow students the option of highlighting, voice recording, audio narration, practicing of fluency, and the ability to breakdown words into decodable chunks (Dalton, 2014). However, it is entirely possible that simply reading in a digital format, without the use of special features such as the ones listed above, does have as larger benefit. According to the article written by Vanessa Vaughn, there are several benefits to student learning when digital text is incorporated in the classroom. One study of kindergartners from the article found that, when comparing e-readers and printed text, students' comprehension and fluency was much greater on texts provided on e-readers (Vaughn, 2016). She also added benefits from a study of second grade students that indicated the use of technology tools such as highlighting and note taking proved to be more engaging for students, and made the reading experience more rewarding (Vaughn, 2016). It appears as though when students read from a digital device without the use of tools that enhance the reading experience (highlighting, chunking, etc.) the benefits may be reduced.

Another variable that may have an effect on the results of the study was the familiarity the students have with the technology that is being used. The students in the kindergarten class that were part of the study had not previously used an iPad for reading, and the unfamiliarity with the device could be a major factor in terms of their reading accuracy. Previous research on this topic seems to agree with this result. Studies have shown that the use of digital literacy takes away value from the text and content. Researcher, Eileen Honan, found that teachers have to spend a lot of time teaching the technological tools, and the students become so consumed with using them properly, that students are losing the focus on the actual content (Honan, 2008).

The length of the study could have played a large role in the increases and decreases that were seen in these students. The data that was collected over a 6-week period. Growth in reading accuracy and fluency takes time, and it is possible that given a longer period of time, more growth would have been seen in the students who were tested. Research would seem to agree. A study was conducted by Armstrong, Campos and Johnson over a 24-week period which utilized a leveled library using levels created by Fountas and Pinnell. Post intervention data indicated an increase in student reading fluency scores, student understanding of how to choose an appropriate book to read independently, and an increase in student silent reading time during the school day. It is concluded by the researchers that a leveled library provides a chance for all students to strengthen their reading fluency on a daily basis with minimal teacher intervention (Armstrong, 2001).

RESEARCH QUESTION TWO: Are the effects of digital literacy different when compared between intermediate and primary grade levels?
When analyzing the results of reading accuracy and fluency, the data shows that grade level, whether intermediate or primary, did not make a difference when using digital literacy. At the kindergarten level, using a

book actually showed more increase in reading accuracy than reading on the iPad, although both showed an overall increase. When comparing 4th grade students reading a book versus reading on an iPad, the data shows that the increase for reading accuracy is identical. Neither tool proved to have a greater impact.

The new understanding is that while kindergarten did show a slightly a greater increase in reading accuracy when using a digital tool than 4th grade showed, grade level does not seem to be a factor when analyzing the impact of digital literacy. When beginning the research and collection of data, comparing the primary and intermediate level was a main focus. Kindergarteners and fourth graders have a large age gap and it was thought that factors such as experience with technology, reading ability, and ability to be independent could have an effect on the data. However, the data shows that these variables did not have an impact.

Previous research findings refuted this study's findings. A study done by Vanessa Vaughn in 2016 showed that when kindergartners read using digital tools compared to printed text, students' comprehension and fluency was much greater (Vaughn, 2016). The findings of this research did not support the same results. When considering why this might be, the length of the study's intervention might have played a role. This study was conducted over six weeks which might not have been enough to show growth. If the study was implemented over a full year, the results may have shown digital literacy to be more beneficial. If warranted, the next step in this study would be to focus on one grade level, rather than trying to compare intermediate to primary levels. This study showed that the age of students does not affect the benefits of digital literacy. It would be interesting to concentrate on one grade level, for a longer period of time, to see if results would differ.

RESEARCH QUESTION THREE: Does the use of using a digital technology tool for reading, increase the engagement of students?
To measure student engagement with digital literacy in the classroom, students were observed by the classroom teacher using an on/off task form. Students were observed for 15 minutes, with the teacher recording student behavior every 30 seconds. The purpose of the on/off task survey was to determine the percent of time students were on task, as well as off task, during a 15-minute duration.

The results of this study showed that there was not enough data to fully answer the research question when measuring student engagement in the classroom for all students. The results proved that there was a larger percent of students on task using an iPad in kindergarten, but the results did not prove to have a similar trend in the 4th grade classroom. Because of this, we can draw the conclusion that kindergartners were on task more when using technology during reading, based on the data. The researchers could not; however, prove the same in the 4th grade classroom since the data showed students were on task more when reading a book. The data shows that reading on a technology device proves to be more engaging in the kindergarten classroom than the 4th grade elementary classroom.

In the kindergarten classroom, the results indicate that on average, students who read a book were on task 55% of the time. The results showed that on average, students who read on an iPad were on task 76.67% of the time. This shows a 20% difference with students who were on task using technology, compared to students who were on task reading a book. In comparison, in the 4th grade classroom, the results showed that there is not much of a difference of engagement with reading a book, versus reading on a laptop. On average, students reading a book were on task 86.67% of the time, while students reading on a laptop were on task 85.83% of the time. This shows about a 1% difference of students who were on task more when reading a book, compared to students who were on task using technology during reading.

The underlying cause of these trends may be due to student exposure to technology in school. The students in 4th grade have had greater years of exposure to technology in the classroom, while the kindergarten students have only had exposure during their first year in the elementary classroom. Also, the students in the 4th grade classroom were on the laptops throughout the day. They use it for other subject areas such as writing, math, science and social studies. The kindergarten students used the iPads throughout the day as well, but on a rotation, so not every single student is on the iPad each day.

Previous studies have shown that engagement is increased when students are exposed to a technology tool in the classroom. In the article written by Boni Hamilton, she provides many approaches to incorporating technology in the classroom. She also mentions that students today not being satisfied with printed texts (Hamilton 2016). The author then went on to provide information about how students are using technology more and more, and it is also providing them with more freedom, which could lead to engagement. Hamilton findings could explain the cause of the engagement shown in the kindergarten classroom in this study which points toward more freedom in their choice of books in the iPad.

As mentioned earlier, Vaughn reported on the benefits of implementing technology tools in the classroom. Vaughn study proved that the use of technology tools with features such as highlighting and note taking proved to be more engaging for students (Vaughn, 2016). This findings in this study seems to agree with Vaughan findings as the kindergarten classroom students were more engaged.

A study by Thiele, Mai, and Post focused on the implications of technology in a 21st century student centered classroom. The authors shared that education is changing with the times, and that this generation of students is to be considered "tech-savvy." It was stated in the article that students are selectively tech-savvy, with a greater comfort level for social media and entertainment compared to a curriculum tool designed for learning (Thiele, et al., 2014). These findings of Thiele, Mai, and Post study could explain why the 4th grade students in this study did not show a difference with engagement with technology compared to using books. The students might have been more engaged if the reading program involved some sort of social media, or another form of entertainment.

Future research studies should focus why was the kindergarten classroom more engaged when reading on an iPad, compared to 4th graders reading on a laptop? What technology tool or program could the teacher implement to receive greater engagement? Another variable to consider is the population of students involved, as well as the length of time the study took place. Both of those are variables that could potentially lead to different results.

CONCLUSIONS

The research about implementing digital literacy in the elementary classroom proves that using a digital tool for reading does not have an impact on reading accuracy or fluency but does prove to be beneficial for student engagement. The purpose of this research was to discover whether the use of technology for reading showed benefits to student achievement including accuracy, fluency and student engagement. Trends in the data indicated that the use of a digital tool for reading did not show significant results, with the exception of student engagement. Student engagement in kindergarten increased by 20% while using an iPad for reading compared to a paper book. The data showed there was a larger increase of engagement among the younger students, compared to the older students. Although the data does not show a significant increase in reading achievement, it does not appear to be detrimental in any way. There was no significant difference in fluency and reading accuracy results when comparing students using an iPad/laptop versus those using a book.

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