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INVESTIGATING THE INFLUENCE OF TODDLE APP UTILIZATION ON AFFECTIVE  
ENGAGEMENT IN A THIRD-GRADE CLASSROOM

CASE STUDY

Master's Thesis

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# Author's Declaration

I, Dragan Jovanovic, declare that this thesis entitled "Investigating the Influence of the Toddle App Utilization on Affective Engagement in a Third-Grade Classroom" is my own work and has been written by me. I confirm the following:

1. This work was completed while enrolled in a master's program Educational Technology at the University of Tartu.
2. No part of this thesis has been submitted for any other degree or qualification at the University of Tartu or any other institution.
3. All sources used or referred to in this thesis have been properly acknowledged.

*I hereby declare that I have written this thesis independently and that all contributions of other authors and supporters have been referenced. The thesis has been written in accordance with the requirements for graduation theses of the Institute of Education of the University of Tartu and is in compliance with good academic practices.*

Dragan Jovanovic

29.05.2024

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# Abstract

This thesis explores the impact of using the Toddle app on third graders' affective engagement. It investigates how integrating this application affects students' motivation and emotional connection to their education. The study highlights the importance of thoughtful technology integration and its potential benefits on student affective engagement. By focusing on the Toddle app, and on one of the vital developmental stages, third grade, the research seeks to provide valuable insights for education professionals on enhancing learning experiences through technology. The findings indicate that the Toddle app can significantly boost students' motivation and emotional connection to their learning. Additionally, this study contributes to the ongoing discussion on technology integration in education.

**Keywords:** technology integration, affective engagement, third-grade classroom, Toddle app, educational technology

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# Introduction

In contemporary society, technology has permeated practically each aspect of our everyday life. Considering its nearly infinite potential, integrating technology into learning environments is not merely a possibility but also a necessity. As primary education environment sets down the underlying foundation of learning, the integration of technology at this stage is of particular significance. The environment of learning is constantly evolving as new technologies become available. In the middle of this evolution, it is essential to recognize that technology could have a significant impact on students' emotional and motivational connection to their learning environments while also contributing to transforming the way we learn.

Affective engagement, a term used for emotional and motivational connection that students build with their learning process, is a vital component of their overall growth as learners (Appleton, Christenson, & Furlong, 2008; Daher, Sabbah, & Abuzant, 2021). Their degree of interest, willingness to participate, and overall enjoyment of learning are all influenced by this relationship. Given the increasing influence that technology has in the classroom, it is critical for educators to understand the way in which it impacts affective engagement. We may learn a great deal about how to design more productive and engaging learning environments for students simply by looking at how technology affects the emotional and motivational aspects of their learning experiences.

An interesting miniature illustration of the interaction between technology and affective engagement could be found in a third-grade classroom. There are a few important explanations why the third grade is the focus of this case study thesis. This stage of education holds significant importance in a child's academic progression which is characterized by significant development in both cognitive abilities and social-emotional understanding (Fiester, 2010; Griffin, Burns, & Snow, 1998). This is a critical time since it is during this period that learning attitudes and fundamental skills are formed. Consequently, it presents an ideal opportunity to examine how technology impacts emotional involvement and interest in learning.

Moreover, in my role as the third-grade teacher involved in this case study, I possess a firsthand understanding of the classroom environment, the goals set by the curriculum, and

the nuances of interactions between students and teachers. This intimate perspective provides a unique opportunity for a detailed exploration of how technology, specifically the Toddle app, is incorporated into the teaching approach. My direct involvement enables thorough research into the limitations and effectiveness of integrating this technology into the learning process.

The selection of the Toddle app as the primary technological tool for this study is justified by its unique features designed to increase student engagement and streamline various aspects of teaching and learning. Since the app has already been implemented into this educational environment, its application provides a practical and accessible way for a pragmatic investigation how technology influences affective engagement within the educational context, leveraging a tool that is already familiar to both teachers and students.

However, there is no guarantee that having technology in the classroom would boost student engagement. Instead, what truly shapes the emotional and motivational engagement in an education setting is the intricate interaction between several factors: the design of instructional materials, individual learners' characteristics, and capabilities of the utilized technology. However, to facilitate this, careful planning is needed or otherwise, technology can impede rather than help learning, thereby promote disengagement (Howard, Ma, & Yang, 2016). This complex relationship requires an in-depth evaluation that goes beyond superficial observations. To truly understand the mechanisms driving student engagement in technologically enhanced learning environments, we must delve deep into this complex interplay and identify the underlying dynamics at work. Only through such a comprehensive investigation can we obtain essential insights for the pedagogical use of technology and its integration into education.

This thesis embarks on a journey to delve into the intricate relationship that exists between technology and affective engagement within the specific context of a third-grade classroom. Focusing the research on the third grade and the Toddle app offers dual advantages: it taps into one of the crucial developmental stages of education and harnesses the familiarity and utility of the chosen technological tool. This intentional decision allows for a concentrated examination, promising rich insights that may be beneficial for refining teaching methods and contributing to wider educational conversations. It seeks to not only uncover the immediate effects of technology on affective student engagement but also to understand lasting impacts that extend beyond the classroom setting and shape students' lifelong learning. In addition to

providing insights that can inform teaching practices, this inquiry aims to broaden the discourse on how technology can be employed to create learning experiences that are both meaningfully and emotionally impactful for students. By doing so, this study aspires to significantly advance the current conversation on the incorporation of technology into education.

# Theoretical overview

## Technology Integration in Education

The use of technology in education has transformed conventional methods of instruction and learning, creating new avenues for individualized and interactive learning. A plethora of educational tools and information that might not be easily accessible in traditional classrooms are made available by the use of technology. A wide range of content covering many areas and disciplines can be found on educational websites, digital textbooks, online libraries, and open educational resources (OER). Because of this accessibility, students have more opportunity to study outside of the classroom by investigating a variety of subjects, conducting research, and gaining access to current information. According to Johnson et al. (2012), educational technologies, such as mobile applications, have the capacity to improve student motivation, support active learning, and accommodate a variety of learning preferences and styles. Students can have individualized learning experiences that are tailored to their unique needs and interests. By meeting each student's unique learning demands, this individualized approach can increase motivation and engagement levels.

With the use of apps like the Toddle app, teachers may engage their students in inquiry-based, and problem-solving activities that can improve conceptual understanding, foster critical thinking skills, and lead to more in-depth learning. By applying the Toddle app in the classroom, teachers are provided with a variety of ways to communicate content and evaluate students' understanding. This app can accommodate different learning styles and preferences by allowing students to use various multimedia tools like interactive templates, audio and video recordings and photos, offering teachers an abundance of options for designing learning experiences that cater to the personal preferences and needs of each individual learner. Students can engage with knowledge in dynamic ways by exploring different online resources. Moreover, they have options to include various external materials to present their



work or support their projects and tasks, which may promote better comprehension and memory retention.

## **Student Engagement in Education**

The term student engagement has become widely popular and researched in recent years. Many experts believe that increasing student engagement can help reduce the large number of bored, unmotivated, and disengaged students (Finn, 1989). Moreover, it has been emphasized as a concept that is malleable and relevant for preventing school dropout, as well as facilitating positive educational outcomes for all students. (Appleton, Christenson, & Furlong 2008; Finn & Zimmer 2012). Identified by some researchers as school engagement, it has attracted a lot of attention as a possible antidote to declining academic motivation and achievement (Fredericks, Blumnefeld, & Paris 2004). To acquire knowledge and skills, succeed academically, and advance personally, students must actively engage in their studies. If they are actively involved in their educational journey, they become fully immersed in the subject matter, which promotes better comprehension and memory retention. Through this interaction, they are able to develop critical thinking, problem-solving, and communication skills in addition to achieving academic success. Additionally, students who actively engage in their education gain a sense of control over their learning process, which promotes self-assurance and a growth mentality (Finn, 1989; Newmann 1992). In the end, students who are actively involved in their studies not only perform more successfully in school but also improve both personally and intellectually.

Given its significance for education, numerous attempts have been made to clarify and define the concept of engagement. In most cases, engagement can be described as consisting of two or three components. When researchers describe student engagement as having two components, they typically focus on the behavioral aspect, which includes good behavior, effort, involvement in various activities, etc. Preparing for class, finishing assignments, participating in extracurricular activities like sports or hobby clubs, and attending school regularly are all examples of behaviors that define the behavioral component of engagement. Additionally, the second component, which includes interest, a sense of belonging, a positive attitude toward learning, etc., is labeled as affective or emotional. The affective aspect focuses on students' attachment or sense of belonging to school, which is related to their perceptions of being accepted and appreciated by their peers and other school community

members (Marks, 2000; Finn, 1989; Wilms, 2003; Newman, Wehlage, & Lamborn 1992). When the third component is included in the multifaceted concept of student engagement, it is referred to as cognitive. Cognitive engagement is concerned with intellectual involvement and depth of understanding and it incorporates setting learning goals, self-regulation, self-efficacy etc. (Fredericks, Blumenfeld, & Paris, 2004; Kahu, & Nelson, 2018).

## **Affective Engagement and Technology**

The effect of technology on affective engagement is complex and influenced by a plethora of variables. The impact of various forms of technology on affective engagement varies. For instance, students are engaged differently by interactive materials and applications than they are by passive video lectures. Furthermore, the way the material is presented is crucial since it determines how well technology works in conjunction with educational activities.

Technology can improve emotional engagement in a variety of ways. First off, by making learning more entertaining and interesting, it can promote intrinsic motivation. Then, it can give students command over their learning process and boost their sense of pride in what they are studying. Lastly, positive feelings like satisfaction and excitement can be evoked by interactive and immersive technologies (Rashid & Asghar, 2016).

On the other hand, the variety of impacts identified in research lead to the idea that how well technology is used to support teaching and learning—rather than whether it is used at all—makes the difference. Without a doubt, young people are motivated and engaged by technology. This advantage, though, is only relevant to learning if the activity corresponds closely with the content that needs to be taught and the aims of the learning activity. Thus, the pedagogy of employing technology in the classroom—rather than the actual technology itself—is what matters (Higgins, Xiao, & Katsipataki, 2012; Tao, Yang, Lai, & Chau, 2018).

In summary, while technology has the potential to significantly influence affective engagement in education in a positive way, its effectiveness depends on various factors such as the nature of technology, instructional design, and alignment with pedagogical goals (Reeves, 2006). When implemented thoughtfully, technology can enhance intrinsic motivation, foster autonomy, and competence, and facilitate overall positive emotional experiences, resulting in an environment with greater engagement (Fredericks, Blumenfeld, & Paris, 2004).

## Gap in the Literature

An increasing number of studies have concentrated on the relationship between student engagement and the development of technology, since the former has attracted a lot of attention recently and the latter has been recognized as having tremendous potential to improve the educational process. A number of scholars have discovered that student motivation and academic achievement are both significantly affected by student engagement. They have discovered that researching student engagement can lead to a solution for low levels of student achievement and high levels of student boredom and disaffection (Fredericks, Blumenfeld, & Paris, 2004; Finn, 1989; Fullarton, 2002). Moreover, given that our society has been changing at a feverish pace with the advancement of technology, specialists in the field of education have to follow this pace in order to create engaging, relevant, and enhancing learning experiences that will enable students to retain the information longer and acquire the necessary skills for lifelong learning.

Taking all this into consideration, there is a lot of information from past research looking into how technology influences student engagement. However, prior research has mostly focused on STEM (Science, Technology, Engineering, and Mathematics) disciplines and higher education settings. In addition to that, quantitative approaches have been frequently employed in these research studies to gauge student engagement. This emphasis on STEM subjects and higher education settings is due to the belief that they will be crucial for meeting the demands of the workforce in the future (Carnevale, Smith, & Melton 2011; Rothwell, 2013). As a result, the bulk of research studies that look into the manner in which technology influences student engagement are designed for undergraduate courses with a particular focus on STEM and medical disciplines, and with the majority of research approaches being quantitative. (Webb, Clough, O'Reilly, Wilmott, & Witham, 2017; Henrie, Halverson, & Graham, 2015).

As a consequence, very little qualitative study has been conducted to investigate how the utilization of technology, particularly apps, impacts student affective engagement in primary education, especially in subjects other than STEM. Using qualitative methodology and a third-grade classroom setting as its primary focus, this study aims to provide more insights addressing this gap in research.

## **Research Problem**

Previous studies have indicated how technology can improve a number of factors of student engagement in educational environments. Nonetheless, the majority of research has been carried out in STEM subjects and higher education, with quantitative approaches dominating the field (Johnson, Adams Becker, Ludgate, Cummins, & Estrada, 2012; Henri, Halverson, & Graham, 2015). This results in a lack of understanding of the intricate implications of technology, in particular the use of applications, on student engagement in non-STEM disciplines and primary education settings. Therefore, it is necessary to conduct additional qualitative research that investigates the emotional and motivational aspects of the multifaceted nature of student engagement when exposed to technology in primary education settings.

Primary education is a critical stage in a child's development that sets up the foundation for their future academic success and general wellbeing. In order to improve the learning process to effectively meet the individual needs of every student and to inform instructional methods, it is necessary to understand how student engagement in subjects other than STEM is affected by technology at this stage of their education journey.

Student engagement is represented as a multifaceted concept that usually consists of two or three components: behavioral, affective or emotional, and cognitive. Historically, cognitive engagement has attracted more interest in the field of student engagement research than behavioral and affective engagement. The term "cognitive engagement" represents the mental effort as well as dedication that students make to learning processes such as critical thinking, problem-solving, and in-depth subject comprehension. Since cognitive engagement is directly related to academic success and learning outcomes, it has frequently received greater attention than behavioral and affective engagement, which are equally crucial elements of the learning process (Fredericks, Blumenfeld, & Paris 2004; Kuh, 2009). Consequently, the reason behind the choice of affective engagement as the focal point of this study is the fact that this component has not been as researched as other aspects of student engagement.

## **Focus of the Study**

The focus of this study is not only to investigate the immediate effects of technology on students' engagement but also to explore the long-term impact that extends beyond the classroom and shapes students' learning experiences throughout their lives. The research aims

to provide valuable insights that can inform teaching practices, as well as expand the discussion on how technology can be used to create meaningful and emotionally engaging learning experiences for students. By doing so, this study hopes to significantly advance the current dialogue on the integration of technology in education.

Furthermore, since the nature of student engagement is complex and multifaceted this master's thesis is going to focus specifically on affective engagement. The main purpose of this thesis will be to inquire into how applying the Toddle app affects students' affective engagement in a third-grade classroom. This study will attempt to shed light on the complex ways that app usage influences students' emotional reactions, motivation and attitudes toward learning by concentrating on affective engagement and employing a qualitative case study methodology. The aim of the research will be to add to the expanding body of information on the impact of technology in promoting positive emotional experiences and increasing student engagement in primary school through rigorous inquiry and analysis. By gaining a deeper understanding of the factors that influence student engagement with technology in the classroom, education experts can design and deliver more effective lessons and courses. This can ultimately lead to improved learning outcomes and better academic performance for students. Therefore, it is important for education specialists to stay up to date with the latest advancements in educational technology and how they can be leveraged to enhance the overall learning experience.

## **Research Questions**

1. In what ways does the utilization of the Toddle app influence different aspects of affective engagement, such as motivation, interest and emotional response within a third-grade classroom?
2. What indicators associated with affective engagement or disengagement emerge from using the Toddle app, and how do they manifest among third-grade students?
3. To what degree does the Toddle app's use in a third-grade classroom enhance the overall affective engagement levels and foster a positive learning environment?

# Method

This section of the study will provide an explanation of the research methodology and a detailed description of the study setting and participant sample. Along with a description of the procedure, a thorough explanation of the instruments of data collection and the rationale for their selection will be provided. Then, an overview of the principles of data analysis and a description of data analysis procedure will be presented. Finally, it will be explained how ethical standards were upheld for this study.

## Sample

### Study Design and Sampling Strategy

This qualitative case study utilized a mixed sampling approach, combining purposive and convenience sampling methods to curate the sample group. By employing purposive sampling, the study ensured the inclusion of participants who met specific criteria aligned with the research objectives. This strategic selection aimed to garner insights directly relevant to the study's aims. Convenience sampling complemented this by simplifying the participation process, thereby facilitating a smoother research operation. The study focused on third-grade students, aged 8 and 9, from an international school, specifically selected from the class taught by the researcher to foster a sense of familiarity and trust between the participants and the investigator.

The primary aim of the study was to explore the impact of the Toddle application on students' affective engagement or disengagement during social studies and English lessons. To achieve a consistent and controlled study environment, participants engaged with the Toddle application for two consecutive lessons each week, alternating between social studies and English. This methodological approach was designed to maintain uniformity across the study and minimize external variables that could potentially affect the outcome.

### Sample Size and Characteristics

The study comprised 20 third-grade students—11 boys and 9 girls—mirroring the cultural diversity typical of an international school environment. The participants were selected based

on their enrollment in the third grade, aged between 8 and 9 years, and their regular use of the Toddle application throughout the study. The inclusive nature of the study meant that there were no exclusion criteria, allowing for a comprehensive representation of eligible students.

### **Sampling procedure and ethical considerations**

The selection of participants from the researcher's own class was a deliberate choice to enhance the rapport and connection between the researcher and the subjects, thus potentially increasing the reliability of the data collected. Prior to their inclusion in the study, students and their parents and guardians provided informed consent, ensuring ethical adherence to voluntary participation.

The investigation spanned over eight weeks, a duration informed by existing research (Higgins, Xiao, & Katsipataki, 2012), which suggests that the efficacy of educational technology applications may wane over extended periods. This timeframe was chosen to optimize data collection while mitigating the potential for decreased engagement that could arise from prolonged application use.

### **Data collection**

To enhance the comprehensiveness and depth of the study on the impact of the Toddle app on affective student engagement, the research methodology was meticulously designed to include a range of data collection methods. These methods encompassed participant observation, exit surveys following each session, thorough document analysis, and a feedback moment commonly implemented in the class for post-lesson reflections among participants.

During the participant observation phase, the researcher actively monitored how students interacted with the Toddle app within the classroom setting. This careful observation extended beyond mere activity monitoring to include an analysis of both verbal and nonverbal cues. Such cues were vital in identifying moments of affective engagement or disengagement, providing a nuanced understanding of the students' emotional and cognitive responses to the app.

To complement the observational data, each session concluded with a succinct exit survey (see Appendix A). This survey was strategically designed to prompt students to reflect on and record any instances of affective engagement or disengagement they experienced during the

class. The immediacy of this feedback was crucial for capturing students' real-time impressions and experiences with the app-based activities, ensuring a genuine snapshot of their responses.

Understanding that engagement with educational technology is deeply influenced by context, the study also incorporated an analysis of various documents. These included lesson plans, examples of student work, and teacher observations. Such documents offered invaluable contextual insights into how the Toddle app was integrated into the learning environment and its effect on student engagement.

In addition to these structured methods, the research design included a feedback moment at the conclusion of the study (see Appendix B). This session was vital for gathering qualitative insights directly from the participants about their experiences with the Toddle application. The feedback moment facilitated open-ended conversations, allowing participants to share their thoughts and experiences freely, which enriched the learning environment and provided valuable insights for both students and teacher. Participants were encouraged to reflect deeply on their engagement levels throughout the study and to identify the most prominent indicators of affective engagement and disengagement they observed. This approach not only enriched the data collected but also provided a platform for students to voice their experiences, further enhancing the study's depth and breadth.

## **Data Analysis**

Data gathered from a variety of sources, including participant observations, exit surveys, analysis of relevant documents, and a feedback moment underwent a detailed thematic analysis. This process was aimed at uncovering recurring patterns and themes that shed light on factors influencing affective engagement and disengagement among participants. As part of this analysis, the themes that emerged from the collected data were meticulously coded and systematically categorized. This approach facilitated a nuanced understanding of how the Toddle app influences affective student engagement within the contexts of social studies and English lessons.

To enrich the findings further, a feedback moment was conducted with students upon completion of the study period. This type of feedback offered qualitative insights into the students' overall levels of engagement, as well as their perceptions regarding the indicators of affective engagement or disengagement. The qualitative data gleaned from this feedback



served as a valuable complement to the data obtained through surveys and observational methods. Together, these diverse data sources contributed to a more comprehensive analysis and interpretation of the findings, enabling a deeper exploration of the multifaceted nature of affective engagement and the impactful role of the Toddle app in educational settings.

Additionally, the study sought to explore the broader implications of these findings for the design and implementation of educational technologies. By examining the specific aspects of the Toddle app that were associated with heightened levels of student engagement, the research aimed to identify key features that could inform the development of more effective educational tools in the future. This included considerations of user interface design, content relevance, and the integration of interactive elements that foster active learning and participation. Through this extended analysis, the study contributes valuable insights into the potential of technology-enhanced learning environments to support and enrich the educational experience for students across diverse subject areas.

# Results

## **Survey Results**

### **Vocabulary Check**

Before conducting the survey, a vocabulary check was administered to ensure that the students grasped the meaning of the indicators of affective engagement and disengagement. The aim was to determine whether the survey items were comprehensible to the students. A handout was given to each student with all the indicators listed, and they were instructed to mark each item with a “+” if they understood it and a “-“ if they didn’t. Only the indicators that were understood by all students were included in the survey. As 16 out of 28 indicators (Bond et al., 2020) were understood, the survey was created consisting of only 16 items based on the understood indicators.

### **Survey Items**

The survey was meticulously designed, comprising 16 distinct items, each meticulously crafted to accurately assess the students' levels of affective engagement or disengagement during classroom activities. There were eight items referring to affective engagement and

eight referring to affective disengagement. This instrument was thoughtfully adapted from the well-regarded Classroom Engagement Instrument (CEI), with specific modifications implemented to tailor its focus towards measuring affective engagement at the classroom level, drawing upon the foundational work by Wang, Bergin, & Bergin (2014). These modifications aimed to capture a more nuanced understanding of the factors influencing third-grade students' active participation and affective engagement in the learning environment.

The following table summarizes the responses to each survey item over the 8-week period:

**Table 1.**

<b>Survey Item</b>	<b>Number of Entries</b>
In this class, I feel happy.	107
In this class, I feel interested.	103
In this class, I feel excited.	99
In this class, I feel proud.	95
In this class, I am satisfied with my work.	95
In this class, I want to learn something new.	92
In this class, I actively participate in all activities.	87
In this class, I feel I belong to this group.	83
In this class, I feel bored.	14
In this class, I feel worried.	10
In this class, I don't like the activities.	7
In this class, I am not interested.	6
In this class, I feel sad.	3
In this class, I feel ashamed.	3
In this class, I feel disappointed.	3
In this class, I feel angry.	1

## **Survey Summary**

The systematically collected survey data presented a clear picture of students' reactions and feelings about the application of the Toddle app in the learning environment.

A dominant theme in the data was the positive affective engagement reported by the majority of the students. This was quantitatively supported by high counts of students expressing feelings of happiness (107), interest (103), excitement (99), and pride (95). Additionally, 87 students specifically highlighted their active participation in all activities, indicating a strong connection with the content and a high level of enthusiasm and involvement.

The evidence of engagement was further supported by the students' perceptions of satisfaction and belongingness. Ninety-five students reported satisfaction with their work, suggesting a positive reception towards the learning outcomes they achieved through the app. Moreover, a sense of belonging to the group was felt by 83 students, pointing towards a positive classroom environment that fosters learning and collaboration effectively.

Despite the overwhelming positivity, the data also captured negative emotions displayed by a minority of the entries. Instances of boredom (14), worry (10), dislike for activities (7), lack of interest (6), sadness (3), feeling ashamed (3), disappointment (3) and anger (1), were reported. These figures, though significantly lower than those expressing positive emotions, indicate a range of affective engagement levels among the students.

Thus, the survey data provide a comprehensive snapshot of the third-grade students' emotional and participatory responses to the classroom activities facilitated by the Toddle app, encompassing both the prevalent positive affective engagement and the less frequent, but present, negative experiences.

## **Student Feedback and Affective Engagement**

The thematic analysis of student feedback revealed a range of feelings and emotions while using the Toddle app. Many students expressed positive emotions, including excitement and happiness, due to the app's engaging and interactive nature. They particularly enjoyed taking photos, crafting their own books, and creating videos. Additionally, the app fostered a sense of interest and motivation, especially during activities such as making fables, creating books, and exploring different biomes.

However, some students experienced negative emotions. Initially, a few students felt scared or confused, indicating moments of uncertainty or discomfort. Additionally, some students reported feelings of boredom and disengagement, particularly when they encountered glitches or when tasks felt repetitive or challenging.

The students' engagement with the app's features was influenced by several factors. Interactive features, such as creating videos, making books, and researching topics, significantly increased their engagement. Creative activities, including writing stories and designing animals and plants with specific adaptations, also contributed to their enjoyment. Furthermore, the opportunity to explore and discover new information about favorite biomes motivated students to engage with the app.

Conversely, factors that contributed to disengagement included technical issues, such as disappearing words and other glitches. Some students also found repetitive tasks to be monotonous and boring, leading to disengagement. Additionally, certain activities, like answering questions about animal adaptations, were perceived as less interesting by some students.

## **Teacher Observation Journal**

### **Initial Observations**

At the outset of the study, students exhibited varying levels of affective engagement with the Toddle app. Some students displayed signs of worry and lack of confidence, particularly in navigating the app and completing tasks within the allotted time. This initial apprehension is common when introducing new technology into the classroom environment, as students may feel uncertain about their abilities to adapt to unfamiliar tools.

### **Transition to Excitement and Eagerness**

However, as the study progressed, a notable shift occurred in students' attitudes towards using the Toddle app. From the first session onwards, students displayed excitement and eagerness to engage with the app. The prospect of integrating technology into their regular classroom activities sparked enthusiasm among the students, driving their active participation and willingness to explore new learning opportunities.

## **Development of Positive Attitudes**

Over time, students became increasingly comfortable with the app and its features, leading to a pervasive sense of satisfaction and belonging in the classroom. Tasks involving video creation and uploading, in particular, elicited a strong sense of accomplishment and pride among students as they showcased their understanding of key concepts. This positive reinforcement further reinforced their engagement and motivation to participate in Toddle-based activities.

## **Challenges and Growth**

Despite the overall positive trend, some students encountered challenges during specific lessons, particularly at the beginning of the study and when learning about complex topics such as animal adaptations. Feelings of anxiety and worry emerged among these students, impacting their ability to fully engage with the tasks at hand. However, with time and support, students gradually overcame these obstacles, demonstrating resilience and adaptability in their learning journey.

## **Confidence and Tailored Learning**

By the conclusion of the 8-week period, a notable increase in students' confidence in using the Toddle app was observed. Students demonstrated a greater ability to tailor activities and tasks to their individual interests and learning preferences, resulting in heightened excitement and interest in the learning process. While some students continued to struggle with confidence and engagement, the majority showed significant growth and progress over the course of the study.

## **Document Analysis**

### **Lesson Plan Adjustments**

The review of lesson plans following each session allowed for ongoing assessment and refinement of instructional strategies. Adjustments were made based on students' progress and success, with a focus on optimizing task difficulty and duration to ensure an appropriate level of challenge for all students. Flexibility in lesson planning was essential in accommodating students' varying levels of proficiency and engagement with the Toddle app.

## **Consideration of Previous Work**

A key aspect of lesson plan review was the careful consideration of students' previous work and performance while using the Toddle app. This informed decision-making regarding task selection, sequencing, and pacing, ensuring that instructional objectives remained aligned with students' evolving needs and abilities. By leveraging insights from past sessions, lesson plans were tailored to promote continuity and scaffold students' learning experiences effectively.

# **Discussion**

## **Research Questions and Interpretation of Results**

The findings of this study indicate that the utilization of the Toddle app in the classroom had a predominantly positive influence on the affective engagement levels of third-grade students. High frequencies of positive emotions such as excitement, interest, and happiness suggest that the Toddle app effectively captured students' attention, positively influencing motivation, interest, and emotional response.

The survey results and student feedback show the occurrence of both positive emotions, which signify engagement, and negative emotions, which indicate disengagement. Positive indicators of affective engagement which included excitement, interest, happiness, satisfaction, and a sense of belonging, were more prominent. However, negative indicators of engagement like fear, confusion, and boredom were also noted during the study.

Moreover, the study results assert that the Toddle app enhances affective engagement levels and fosters a positive learning environment among third-grade students. The app's interactive features and creative activities emerged as key contributors to fostering a sense of exploration and discovery, which enhanced the learning experience.

In summary, the results of this study address the first two research questions to a considerable extent by presenting evidence of the Toddle app's positive influence on affective engagement and the learning environment and by displaying various indicators of affective engagement and disengagement and their different manifestations among students. However, although the results indicate an increase in affective engagement levels fostering a positive learning

environment, further detail regarding the degree of impact could strengthen drawing conclusions.

## **Comparison with Existing Literature**

The positive emotions of excitement, interest, and happiness reported by students while using the Toddle app, align with the broader findings in the field that educational technology can support active learning and accommodate diverse learning preferences (Fredericks, Blumenfeld, & Paris, 2004). Moreover, the results indicate that the use of technology in learning environments can significantly improve student engagement and motivation (Johnson et al., 2012; Appleton, Christenson, & Furlong, 2008).

However, the presence of negative emotions, such as fear, confusion, and boredom, albeit minimal, reinforces the necessity for a careful integration of technology into educational settings to ensure it promotes positive student engagement and effectively aids in achieving learning outcomes (Tao, Yang, Lai, & Chau, 2018). Moreover, Ma et al. (2015) note that disengagement has been proven to negatively impact students' learning outcomes and cognitive development. Therefore, it is imperative to engage students in their learning. The emphasis on interactive features and creative activities as facilitators of engagement further supports the argument that the thoughtful pedagogical use of technology, rather than technology itself, is crucial for enhancing learning experiences (Higgins, Xiao, & Katsipataki, 2012; Reeves 2006).

## **Implications and Recommendations**

The study's qualitative approach has allowed for an in-depth exploration of the multifaceted nature of affective engagement, providing valuable insights into the emotional and motivational dimensions of student engagement with technology. The findings suggest that educational technologies, when thoughtfully integrated, can significantly enhance affective engagement. In this study, 'thoughtfully integrated' means that several key factors were considered: the age of the students to ensure activities were appropriately challenging, the diverse features of the Toddle app were utilized to cater to individual needs and interests, and students were given the freedom to present their work in their preferred formats. These considerations helped to create an engaging and supportive learning environment that fostered positive emotional and motivational experiences. Therefore, educators should

consider the emotional and motivational impacts of technology and strive to create learning environments that leverage technology to foster positive emotional experiences.

To support further research in implementing similar approaches, specific strategies can be recommended. First, ensure activities are developmentally appropriate for the students' age to maintain an optimal level of challenge. Second, make full use of the app's features to address diverse learning styles and interests, which helps in personalizing the learning experience. Third, provide students with choices in how they present their work, allowing them to engage in ways that resonate with their preferences. Additionally, addressing technical issues promptly and ensuring activities are varied and aligned with students' interests are crucial to prevent disengagement. This calls for professional development opportunities that can equip teachers with the skills and knowledge to effectively integrate technology. These sessions should focus on troubleshooting common technical problems, designing engaging and diverse activities, and using technology to personalize learning. By focusing on these areas, educators can enhance the learning process and improve student outcomes.

## **Limitations**

The qualitative approach in this study offers valuable insights into how the Toddle app influences affective engagement among third graders. However, the focus on a single classroom and the use of one particular app may limit the generalizability of the findings. Future research could expand this inquiry to diverse educational settings and technologies to build a more comprehensive understanding of technology's role in affective engagement across different contexts.

While the study emphasizes that the utilization of the Toddle app evokes the indicators of affective engagement rather than disengagement, a more detailed analysis of specific data demonstrating the degree of enhancement in affective engagement levels can be explored, as well as, how these indicators manifest specifically among third-grade students, including frequency and context of these emotional responses.

## **Future Research**

This study opens avenues for further exploration into the long-term effects of technology on student engagement, particularly beyond the classroom. Additionally, investigating the impact of various technologies across different subjects and grade levels can provide a



broader perspective on how to effectively integrate technology in education to support affective engagement.

## **Conclusion**

In conclusion, the integration of the Toddle app within the third-grade classroom setting has illuminated the profound potential of technology to positively influence affective engagement. This study contributes to the ongoing dialogue regarding technology integration in education by highlighting the importance of aligning technological tools with pedagogical practices to foster engaging and emotionally resonant learning experiences. As the field of education continues to evolve with the rapid pace of technological advancements, it is imperative that educators, policymakers, and researchers collaborate to ensure that technology acts as a catalyst for enrichment of students' learning experiences, rather than becoming a distraction or impediment.

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# Appendix A

This appendix includes the student survey with all 16 items:

Put X in a box next to a sentence that describes how you feel about the lesson that has just finished.

In this class, I feel excited.	
In this class, I feel interested.	
In this class, I feel proud.	
In this class, I feel happy.	
In this class, I actively participate in all activities.	
In this class, I am satisfied with my work	
In this class, I want to learn something new.	
In this class, I feel I belong to this group.	
In this class, I feel bored.	
In this class, I feel angry.	
In this class, I feel worried.	
In this class, I don't like the activities.	
In this class, I feel sad.	
In this class, I am not interested.	
In this class, I feel ashamed.	
In this class, I feel disappointed.	

# Appendix B

This appendix includes the questions that were used during the student feedback moment:

1. How did you feel while using the Toddle app to study? Were there any moments that particularly captured your interest or sparked your curiosity? Were there any aspects of the app that made you feel disengaged or uninterested?
2. Reflecting on your experience with the Toddle app, can you describe any emotions or feelings that arose during your study sessions? Did you feel motivated, excited, or eager to learn? Or did you experience any feelings of frustration, boredom, or disinterest?
3. Think back to a time when you felt fully engaged with the material while using the Toddle app. What elements or features of the app contributed to that sense of engagement? How did those aspects enhance your learning experience?
4. On the flip side, recall a moment when you felt disconnected or disengaged while using the Toddle app. What factors or aspects of the app do you believe contributed to that feeling? How did those factors impact your ability to focus or retain information?

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**29/05/2024**