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Teacher Perceptions of the Implementation of a Digital Token Economy in Inclusive Classrooms

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Teacher Perceptions of the Implementation of a Digital Token Economy in Inclusive Classrooms

by
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Statement of Original Work

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Abstract

Teacher Perceptions of the Implementation of a Digital Token Economy in Inclusive Classrooms, Richard Thomas Richardson II, 2023: Applied Dissertation, Nova Southeastern University, Abraham S. Fischler College of Education and School of Criminal Justice. Keywords: teacher, perception, digital token economy, implementation, inclusive classroom, exceptional student education

In inclusive classrooms teachers support students with various needs. Students with exceptionalities are included in general education which can provide various challenges for teachers. A common system used by teachers to support students is a token economy. Increase use of digital technology in education has make available the use of token economies on digital platforms. More information is needed to determine how digital token economy has allowed teachers to expand their use of the system as a tool to support classroom management, student motivation, and academic achievement for students with exceptionalities.

The purpose of this generic qualitative study was to examine middle school teachers' perceptions of digital token economy as a tool to support classroom management, student motivation, and academic achievement for students with exceptionalities in inclusive classrooms in Florida. Online interviews using Microsoft Teams were conducted with 10 purposeful sampled participants with experience implementing digital token economy in inclusive classroom settings in the southeastern United States. The interviews were transcribed to collect data using in vivo coding to create categories and to present themes based on the results.

Four reoccurring themes emerged from the interview transcriptions using in vivo coding. The following themes were identified as factors of the implementation of a digital token economy in inclusive classrooms: (1) Tool for student engagement, (2) tool to promote successful learning environment, (3) tool for ESE support, and (4) implementation challenges. These themes were interdependent of the implementation process for teachers. All four themes were identified as factors related the research questions. The themes provide insight into the implementation perceptions of teachers for the digital token economy system in inclusive classrooms. The findings of this study provides educators insight on the successes and challenges of implementation of digital token economy in inclusive classrooms.

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Chapter 1: Introduction

Teachers in inclusive classroom settings face challenges while supporting students with exceptionalities. Often these challenges are related to teachers not having access or proper training to resource tools (Mukherjee & Bear, 2017). Challenges occur in teachers' personal attitudes about inclusion of students with disabilities. Challenges also occur in the environment and population of students within the inclusive class (Mukherjee & Bear, 2017). Students with exceptionalities often struggle with academic achievement compared to peers in general education (Ahmed, 2018). Challenges occur for students with exceptionalities that are placed in inclusive classroom settings (Hymel & Katz, 2019). These challenges often include difficulty with behavior that interferes with academic achievement (Riden et al., 2019). Teachers face difficulties with student motivation on academic related tasks within the classroom (Roberts-Yates & Silvera-Tawil., 2019). Increase availability of digital token economies have become convenient for educators (Sherin, 2016). Teacher perceptions on the implementation of a digital token economy system provide necessary insight on the value of a digital token economy as a behavior intervention.

Use of an intervention behavior strategy such as a token economy has been shown to enhance behavior and academic gains in inclusive classrooms for students with exceptionalities (Homer et al., 2018). Research also suggests that computer-based learning has a positive effect on students in inclusive classrooms for students with exceptionalities (Knox et al., 2020). Prior research suggests token economies have helped motivate various students (Carnett et al., 2014). Motivation can enhance student success and academic progress (Homer et al., 2018). The use of digital tools has also helped

students stay engaged in the learning process (Wu et al., 2017).

Statement of the Problem

Students with exceptionalities are sometimes placed in inclusive classrooms. In these settings, teachers can use classroom management techniques to influence behavior or their students. Effective teachers also use classroom management strategies to enhance student learning (Soares et al., 2016). Using familiar techniques during standardized testing could influence positive outcomes that reflect academic success (Rana, 2017).

People are influenced by reinforcements which controls their behavior (Cooper et al. 2017). Digital based academic resources are proven to be effective tools for students with exceptionalities (Constantin, 2017). Token economies have also been proven to help motivate various students in general education and with exceptionalities by combining digital resources and learn for reward (Knox et al., 2020). Digital based resources have influenced new classroom management presentations for students. Digital token economies are becoming increasingly common in inclusive ESE classrooms to make a variety of digital reinforcements (Roberts-Yates & Silvera-Tawil., 2019).

The Research Problem

There is a gap in the literature regarding teacher perceptions of the use of a digital token economy to address the needs of students with exceptionalities in the inclusive classroom, particularly in regard to student behavior, motivation, and academic success. Interventions such as token economies are typically used for the purpose of classroom management and are not intended as a tool for academic gains (Sherin, 2016). However, access to digital tools creates an engaging learning environment (Wu et al., 2017). Students in inclusive ESE classrooms often become complacent and may lack motivation

to succeed (Homer et al., 2018). Though studies have indicated digital token economies are useful for engagement and classroom management, few studies have explored the implementation of digital token economies to address motivation and academic success among ESE students. This investigation examines teachers' perception of their implementation of a digital token economy. The research will focus on how this behavior intervention may influence student motivation. Experienced teacher perceptions are needed to determine the reliability of a digital token economy as a behavior intervention strategy for classroom management and its usefulness to address student motivation and academic success.

Using a behavior intervention method that enhances academic success is ideal for educators to use in the classroom. Students with exceptionalities struggle with focus during various academic and non-academic tasks (Constantin, 2017). Research suggests that instant feedback can promote student focus (Wu et al., 2017). A digital token economy provides instant feedback for students. Students with exceptionalities are sensitive to sensory stimulants especially those with autism "Mainstream technologies—including Mobile Apps, computer games and virtual reality devices—are commonly used to facilitate interpersonal communication for students with intellectual disability and autism" (Roberts-Yates & Silvera-Tawil, 2019, p. 199).

Background and Justification

Since the 1960's teachers have been using token economy as a reinforcement-based system capable of changing behavior across multiple people. The token economy system has been proven to be an effective behavior management system while supporting individual students in a manageable system implemented by teachers (Hudachek, 2021).

In recent years token economy systems have been transitioned to digital platforms. Increased use of technology in classrooms has expanded token economy systems to a virtual setting. The increased use of digital token economies has expanded the possible effectiveness of the token economy system. The integration of token economy into a digital platform has provided convenience and effectiveness for teachers (Raja & Nagasubramani., 2018). Virtual accessibility of the token economy provides enhanced data collection. Student learners are engaged in virtual learning and digital technology (Knox et al., 2020).

The components involved with a digital token economy include target behavior, digital platform exchange system, and menu of preferred items. The digital token economy is a behavior change system that drives motivation in students. Behavior science has been used to effectively treat the needs of individuals (Cooper et al., 2017). Preferred items are often discussed with students for establishing operations. The digital token economy display is an antecedent that influences student behavior for desired consequences (Morano et al., 2021).

In a digital token economy, an exchange system is established using a digital platform the best fits the needs of the teacher to support students. Class currency is displayed, and records kept on the digital platform. A critical aspect of the digital token economy is focusing on target behavior. The digital token economy is designed to address target behavior for multiple participants. Effective teachers provide support focused on the individual needs of each student (Riden et al., 2021). The digital token economy is a universal design for learning. Teachers using the digital token economy use differentiated instruction to meet the needs of each individual student. Providing

individualized support is difficult to implement (Cheng & Lai., 2020). Displays in the classroom are necessary to remind students of the system.

Deficiencies in the Evidence

The overall research conducted falls short of attempting to investigate the progress of how a token economy paired with technology can motivate students with exceptionalities (Riden et al., 2021). Teacher perceptions provide an exclusive look that is unique in reporting an understanding of the effectiveness of a digital token economy. There are deficiencies in understanding how teachers influence student dependency on digital token economy. Evidence is needed to determine the effect of a digital token economy as a reward system and reinforcer for student motivation. More information is needed to determine teacher perceptions of the practicality of using digital token economies in inclusive classrooms for students with exceptionalities (Riden et al., 2019).

Evidence is needed on how teachers utilizing digital token economy for students with exceptionalities in inclusive classrooms. More information on challenges and benefits of using a digital token economy from perceptions of teachers (Raja & Nagasubramani, 2018). Teachers' perceptions on the process to support classroom management using a digital token economy (Soares et al., 2016). Information on effective incentives for student motivation (DeFrancis, 2016). Observations of academic achievement influenced by the digital token economy (Hymel & Katz, 2019).

Audience

This research is important for teachers, specialists, and administrators to determine if a digital classroom token economy is a successful resource. Other researchers can refer to this work to expand on the benefits of using a digital token

economy. Teachers can use the information presented in this study to determine the need of a digital classroom token economy for an intervention strategy. Principals could use this research to back an approach that encourages inclusive ESE classrooms to use a digital token economy.

Setting of the Study

This study investigates inclusive ESE classroom settings with teachers using a token economy with digital tools. These students have access to various digital tools throughout the day. Teachers use behavior intervention strategies to influence student learning. Secondary teachers will be selected throughout a school district in southeast united states with inclusive ESE classrooms. A selection of ten secondary teachers with experience in inclusive ESE classrooms with an academic year of using no token economy, an academic year with using a token economy, and an academic year of using a digital token economy.

Feasibility of the Study

This study will investigate the success and challenges of digital token economies by interviewing teachers who have used a digital token economy throughout an academic year and a year of using a token economy. Teachers that use digital academic tools will be essential to the study. Previous experience using a token economy is necessary to compare to their perceptions in using a digital token economy. Surveys will be used to determine eligible experienced teachers. Information provided by teachers will be examined to determine the effectiveness of a digital token economy.

Chapter 2: Literature Review

The purpose of this proposed qualitative study is to explore the use of a digital token economy as a behavior strategy that can be used beyond classroom management and utilized for focused academic success. In inclusive ESE classrooms a common classroom management strategy is using a token economy. Due to technology integration many of these token economies have become digital through use of various education software. Recent research examines the correlation between the use of digital technology and enhanced student focus (Roberts-Yates & Silvera-Tawil, 2019). This enhanced focus with the use of digital technology and the management of a token economy drives motivation in students. The specific purpose of this study is to explore teacher perceptions of the use of token economy in inclusive classroom, challenges faced, and benefits determined.

This literature review was conducted using academic resources from the Alvin Sherman Library at Nova Southeastern University and the John C. Hitt Library at the University of Central Florida. These resources included databases ProQuest, EBSCOhost, and Google Scholar. Keywords and phrases used to research focused on: teacher, perception, digital token economy, implementation, inclusive classroom, and exceptional student education. The research was conducted by examining the progression of digital technology paired with the implementation of token economy. The recentness of digital token economy systems is a limitation on studies available to review.

Conceptual Framework

The use of token economies in education is related to behavior science. Token economies are used to provide a behavioral response that is likely closely followed by a

satisfying result in a pattern that influences student behavior to occur again (Hackenberg, 2009). Thorndike's puzzle boxes provided a theoretical basis for understanding the role of consequences on behavior (Matson et al., 2016). Thorndike (1927) provided the law of effect on how new skills are learned. He created a puzzle box for cats to escape using latches. In his research he discovered that cats did not understand the consequences of their behavior but were able to solve the puzzle box through trial and error. Thorndike (1927) tracked data to find the rate at which the cat could solve the puzzle box. He discovered that the rate of acquisition increased with each trial through conditioning. Behavior changes because of its consequences which then creates new behavior habits. Behavior that was rewarded through satisfying results was more likely to be repeated compared to behavior that resulted in unsatisfying results for the participant.

Skinner's (1968) operant conditioning is a type of learning where the consequence of one's behavior shapes future behavior. Operant conditioning is based on the idea that behavior can increase or decrease by adding a consequence. Consequences are either a reinforcement or a punishment in a digital token economy. Digital tokens and rewards are either being presented or removed which will result in behavior either increasing or decreasing if effective. Reinforcement using digital tokens and rewards increases the chances of a behavior to more likely to occur. Punishment using digital tokens and rewards decreases the likelihood of a behavior to occur.

Skinner's (2014) reinforcement theory suggests that behavior can be formed by its consequences. Positive token reinforcement systems can increase the possibility of the rewarded behaviors' repetition. Providing students with a tokens reinforcement system that can be exchanged for a reward encourages performance of the behavior to reoccur.

Positive reinforcement with digital tokens motivates students' behavior through reward. According to reinforcement theory, reinforcement is more effective in behavior management compared to punishment. Positive reinforcement using a digital token economy conditions desired behavior through repetitive reinforcement and gradually eliminates undesirable behavior. Compared to negative reinforcement, positive reinforcement avoids bad feelings towards activities or persons. Effective rewards must meet the participants expectations, have high value, and be consistent.

Token economies are used to create opportunities in which teachers use Premack's Principle for learning opportunities to drive student motivation. Premack's Principle "states that making the opportunity to engage in a behavior that occurs at a relatively high free operant (or baseline) rate contingent on the occurrence of low-frequency behavior will function as reinforcement for the low-occurrence behavior" (Cooper et al. 2017, p. 265). Premack's principle is used to complete a first task that is undesirable to achieve access to a more desirable activity. Premack's principle is sometimes referred to as grandma's rule in which the contingency of one activity must be completed first to then gain access to the desired reward. Response deprivation hypothesis refers to the increased value of a reinforcement that has not been obtained by an individual in a prolonged period (Cooper et al., 2017). In a digital token economy, motivating operations are established through response deprivation by making a reinforcement more valuable by establishing obtainability of the reward then removing the availability of the reinforcement to make reward more desirable. This process is essential to influence desired behavior.

Hall (2014) explores an apparent conflict between Adam Smith's (2010) invisible

hand theory and theory of moral sentiments. This conflict of Smith's (2010) beliefs that motives of behavior in private sphere will be different from the rules of the public sphere. "I argue that the higher-level economic order relies fundamentally on norms of behavior and rules of conduct that are nourished by the sympathy fostered in the lower-level orders of family and friends. At the same time, the economic order affects these lower orders, influencing in turn the norms of behavior and rules of conduct that support economic activity" (p. 240). Bridging these two theories helps explain the motivation of participants of an economy. This motivation of participants in an economy could be applied to students participating in a classroom setting. Students that participate in a digital token economy are subject to social norms of behavior and conduct that is established in their environment. Student conduct is influenced by behavior and rules supported through the digital token economy.

Zuo-ming (2011) developed the theory of generalized virtual economy which is "based on Marx's mode of "life objects" about human activity (p. 21). Generalized virtual economy was created as a term for any virtual economy that satisfies individual and collective needs. A generalized virtual economy is at the same time dominated by psychological needs Zuo-ming (2011). The research suggested generalized virtual economy provided a dual value system that is constantly in use which evolves into a physical value while being of virtual value. The information medium of a digital token economy system develops these values by constantly cycling physical value and virtual value as a path of development. Tong and Jiayou (2021) developed a generalized token economy theory based on the generalized virtual economy theory from Zuo-ming (2011) in which they referred to a token economy as "a circulated encrypted digital economy"

(p. 21). The digital token economy system could provide individual and collective class social needs such as being part of a community. Digital citizenship represents ways that teachers can help promote and develop students critical thinking abilities, enhance digital communication skills, and influence the class community by connecting their in-school learning with civic participation (Gleason & Von Gillern, 2018).

Knox et al. (2020) examines machine behaviorism which is the inevitable intense data driven environment for learning. Machine behaviorism is a strategy in which data driven environments are created using machines such as a digital token economy for altering behavior. The influence of these intensive data driven machines is based on applied behavior analysis and how education activities are conducted. A machine could be designed to achieve one goal but once deployed could be doing other things not related to the original purpose due to interfering factors. Knox et al. (2020) envisions a near future in which radical behavior theories are combined with machine learning systems that fit the needs of student learning. This concept of data driven environments is used by systems such as Positive Behavioral Interventions and Supports (PBIS) which provides insight to educators on how to approach behavior that interferes with learning.

The previous concepts found in these studies has led to the importance of analyzing the perceptions of teachers that have implemented a digital token economy. This collection of concepts helps support the existing findings in relation to the factors of a digital token economy system. A digital token economy contains factors of the previous research that is relevant to promoting student success. Factors include digital token economy relation to the implementation of behavioral science by teachers, including data collection on student management. Importantly machine behaviorism is a

factor in student engagement in a digital token economy system which promotes student learning.

Token Economies

Thorndike (1927) established The Law of Effect that states, “behavioral responses that were most closely followed by a satisfying result were most likely to become established patterns and to occur again in response to the same stimulus” (p. 212). Token economies have been a form of behavior management since the 1960’s. Behavior research done by B.F. Skinner in operant conditioning and differential reinforcement through shaping is an important part of token economies. Significant researchers in token economies are Teodoro Ayllon, Nathan Azrin, Gordan Paul, and Leonard Krasner who conducted research in mental hospitals to determine the effectiveness of shaping behavior through differential reinforcement (Liberman, 2000). W.C Becker and Alan E. Kazdin contributed to research of token economies use in classroom environments (Matson et al., 2016).

Ayllon and Azrin (1968) used the term token economy to refer to the use of a monetary incentive program to enhance therapy and rehabilitation for patients. Evidence-based research indicated success for token-based interventions, but the researchers expressed concerns with consistency of implementation, stating, “Despite the evidence-based success of token economies, they failed to follow patients into community facilities during the past three decades of deinstitutionalization” (Liberman, 2000, p. 1398). These researchers expressed the need for more research on this topic.

There were various reasons the researchers felt it was difficult for the implementation of token economies. “Training staff to be consistent and positive in their

interactions with patients was daunting, and maintaining staff consistency with the quality standards of token economies required intrepid organizational and management skills" (Liberman, 2000, p. 1398). Using a token economy caused resistance from professionals whose education had focused on an understanding of intrapsychic and psychodynamic mechanisms to explain behavior. "The token economy posed challenges to program managers who found the enriched, individualized, and planned environmental design required by this approach to be anathema to cost constraints and bureaucratic inflexibility" (Liberman, 2000, p. 1398). Most of all it proved difficult to create programs that created natural reinforcers that could provide support for improved behavior brought about by incentives for the token economy.

In 1973, Payne created a structed book designed for teachers to establish a currency-based token economy system that would be relevant for the student population. In the late 1970's token economies had gained popularity in classroom settings. Token economies had also been proven successful from randomized controlled trial research (Wade, 1979). Token economies were found consistently successful for management of student populations compared to standard treatment and specialized milieu therapy (Greenberg, 1975). Continued evidence-based research in recent years also provides credibility of token economies as a successful classroom management strategy (Soares et al., 2016).

Digital dependency has increased exponentially in the new millennium (Pedró, 2007). The use of digital technology in the classroom has become increasingly available and "there is a need for finding and analyzing innovative educational responses designed to better accommodate new millennium learners into educational settings, benefiting as

much as possible" (Pedró, 2007, p. 260). Teachers use digital tools based on the needs of their students. Education curriculums are increasingly based on digital platforms to support and track data of student progress (Knox et al., 2020). The Covid-19 pandemic of 2020 increased the demand for digital tools including token economies (Ting et al., 2020).

Knox et al. (2020) mentions "the era of data-intensive technology is necessitating renewed attention to the ways 'learning' is being conceived and practiced" (p. 41). The increased use of digital tools in classrooms and effective classroom management strategies such as token economies are inexorable. Digital applications such as Classroom Dojo, Live School, and Classcraft are increasingly used to manage student behavior through a digital platform including data collection results that can guide learning. "The immediate use and successful application of digital technology to tackle a major, global public-health challenge in 2020 will probably increase the public and governmental acceptance of such technologies" (Ting et al., 2020, p. 461).

According to Sherin (2016) "A digital token economy allows for the provision of a token economy through the use of a technology device (Hammonds et al., 2013). Tokens are rewarded and removed through digital means. The device will allow for student behavioral data to be summarized, tracked, and shared with relevant stakeholders" (p. 11). Token economies like other aspects of academia are being used more frequently in a digital format. Learning communities are increasing their dependency on digital devices (Constantin, 2017).

Digital tools in classrooms such as token economies have become popular in ESE class settings. Teachers use digital token economies as the primary facilitators of

academic interventions in the classroom. Through previous experiences teachers can provide insight on the effectiveness of digital token economies for students. Teacher perceptions are critical in examining how a digital token economy can provide an academic influence beyond the intended purpose of classroom management. More research is needed to determine how digital token economies influence on students could enhance academic gains.

History of Token Economies in Education

Systems for behavior reinforcement and incentives have been widespread for centuries. Currency exchange systems for goods and services in exchange for tokens that represent value is a prime example (Matson et al., 2016). The modern token economies have been influenced by creating incentives for students. Incentives for students have been used since at least the 7th century to influence student learning. Monks in Southern Europe provided biscuits of leftover dough known as "petriolas" or "little rewards," to children who learned prayers (Doll et al., 2013). Skinner (1971) described instances in which the use of food was advocated by the Renaissance Dutch philosopher Erasmus in the 16th century as an incentive for children to learn Greek and Latin. Western teachers increase use of incentive systems to manage student learning has expanded since the 1800's (Doll et al., 2013).

Joseph Lancaster's "Monitorial System" originated in England which gained popularity in New York schools. In this economic system, teachers would select certain students to be "monitors" to a group of student peers in which they determined privileges and rewards that would be given as motivation for desired results. This system was used by teachers to manage large populations of students within the learning community (Doll

et al., 2013). Another system called “Excelsior” was used in the late 1800’s in the United States. This early form of token economy in a school setting consisted of giving out tokens of “Excellent(s)” and “Perfect(s)” to students that were then exchanged for “Merits”. These merits were saved and exchanged for a certificate of great performance from the school. Token economies in education have been used as a classroom management program that promotes student learning through incentives (Doll et al., 2013). According to Rodriguez et al. (2005) a token economy precursor was found in a textbook published in 1859 Madrid, Spain. In this teaching textbook, under the chapter for discipline it is translated that “among the rewards that can be delivered in schools the tickets (vales) are in the first place because by nature they are applicable to all students” (Rodriguez et al., 2005, p. 427).

Established from Behavioral Science

B.F. Skinner began studying aspects of behavior in 1928. During his research he created an operant condition chamber called a “Skinner box” in 1930. In his research to examine behavior he used rats and pigeons to condition their actions to receive food as a reward through a dispenser. For the rat or pigeon to receive the food reward they must first receive a light token to signal the availability to pull the lever that dispenses the food reward. B.F. Skinner had discovered from operant conditioning that tokens can shape behavior when a reinforcer is provided (Matson et al., 2016; Skinner, 1971).

In the late 1950’s, 1960’s, and early 1970’s B.F. Skinner (1971) brought to forefront behavioral science which provided educators with research-based interventions using operant conditioning. Before they were used in a school setting for students they were used to educate and shape behavior for individuals with severe developmental

disabilities in psychiatric hospitals (Matson et al., 2016; Liberman, 2000). Skinner (2014) believed that behavior could only be observed. Skinner (1968) believed there is no free will because organisms are reacting to their environment.

The introduction of token economies in mental hospitals was the forerunner to providing an economic form of management within an inclusive setting (Liberman, 2000). “Until the 1960’s retarded persons were considered incapable of benefiting from most types of therapy. Custodial care was the dominant philosophy and practice of institutions. Therapeutic goals were virtually non-existent” (Wade, 1979, p. 11). Through behavior science strategies such as a token economy became an effective form of intervention.

Staats (1958) published a variety of research that expanded behavior applications using operant procedures with a focus on improvement of literacy skills. Staats & Butterfield (1965) reported on improving vocabulary and improvement in reading for a “culturally deprived juvenile delinquent” with a token reinforcement system combined with a reading curriculum which included improvement of classroom behavior of one student. Staats has been credited with inventing time-out procedures and the token reinforcer system which is later referred to as a token economy (Cloninger, 2000; Strauss, 2006; Staats, 2012).

Krasner (1990) described Staats research as the first to use a back-up reinforcement-based system in a reading program. Morris et al. (2013) suggested that this claim of Staats being the first to use a back-up reinforcement-based system in a reading program is not well supported in literature and are sometimes disputed. Nevertheless, Staats contributions were essential in the development of behavior interventions using

tokens as a reinforcement system. Later, Staats (1970) expanded research for his token-reinforcement remedial reading program based in an African American community. This research supported the effectiveness of a token economy with a larger population needing support for emotional behavior disorders.

Considered by many researchers to be a landmark study (Kazdin 1977; Morris et al., 2013), the use of token economies in mental hospitals were first used to manage behavior of patients mostly in California, Oregon, and Illinois. Ayllon and Azrin (1968) used a token economy for a monetary incentive program to enhance therapy and rehabilitation for patients in Anna State Hospital in Illinois. Importantly data was collected on the application of the system to support their findings regarding the use of token economy (Ayllon & Azrin, 1968; Matson et al., 2016). Data collection on the application of the token economy logged distribution of tokens for completion of tasks, payment for jobs, and self-care. Data collection also included participants increased or decreased contingency performance. In Anna State Hospital they elements of success with the token economy for behavior modification but found that staff struggled to keep consistency with the system needed additional training (Ayllon & Azrin, 1968; Wade, 1979).

Atthowe and Krasner (1968) contributed understanding of token economies in relation to behavior modification. Atthowe and Krasner studied behavior environment relations for the benefit of individuals and society. Atthowe and Krasner's research of environment as an influencing factor to behavior lead him to the application of token economies in mental institutions. Atthowe and Krasner found that token economies in mental institutions as an effective form of managing the environment "tokens could be

exchanged for the "good things in life" such as passes, movies, and well-located beds (Atthowe & Krasner, 1968; Wade, 1979). Krasner would advocate using a token economy as a part of the classroom as a planned environment which he referred to as “environmental design” (Krasner, 1976).

Paul (1974) was an early pioneer in using token economies for social learning including organizational development, staff training, performance enhancement. Paul found that token economies were successful for treating aggressive adults with schizophrenia. Paul’s research suggest that token economies would be effective behavior modification for highly adverse clients. Paul found that the token economy as a cost-effective method that was available for institutions to use as a form of behavior management (Paul, 1974). Clients were observed for improved social skills due to the shaping of their behavior via integration in a token economy (Paul et al., 1997).

In the 1970’s token economies had increased in popularity due to success from previous studies by Ayllon and Azrin (1968) and Krasner (1977). In 1977 a landmark study by Paul found that in a randomized controlled trail that token economies were more effective for behavior development compared to specialized milieu therapy or standard treatment (Paul & Lentz, 1977). Alan E. Kazdin (1977) listed a set of components that are necessary for an effective token economy. These components include “(1) specific target behavior(s), (2) tokens or points that the individual receives for exhibiting the target behavior(s). (3) Reinforcers that the individual receives access to by exchanging tokens that he or she has earned. (4) Create procedures for earning tokens and exchanging for reinforcers. (5) Establish a ratio of exchange” (Matson et al., 2016, p. 2).

Due to success in behavior modification results from previous research increased

interest for applying token economies in classroom environments had gained popularity in the late 1960's and 1970's and was suggested for use for across populations and groups (Doll et al., 2013; Matson et al., 2016). This success led to the implementation of token economy use in the classroom. Krasner (1990) referred to O'Leary & Becker (1967) research as one of the first use of a token reinforcement system to control a large class of emotionally disabled children. Krasner (2012) would also contribute during the 1970's the idea that token economy use is for classroom management and behavior intervention designed on reducing disruptive behavior. Also increasing attentive behavior including individual contingencies and group contingencies.

O'Leary et al. (1969), provided a systematic review of a token economy use in a public school. The purpose of this study was to determine if a token economy was an effective behavior intervention to reduce disruptions in a general education classroom. The results of a base rate collected on seven students suggested that a token economy provided a combination of rules, educational structure, praise, and ignoring nearly eliminated all disruptive behaviors for five out of the six students during the observation. A withdraw of the token economy was also observed which led to increase disruption compared to during and prior the implementation of the token economy. The token economy was then implemented again which resulted in four out of five students decrease in disruptive behavior in the class. Increase in academic achievement had also occurred which was attributed to decrease in disruptions (O'Leary et al., 1969).

Becker (1973) would go on to provide research separate from O'Leary that further provided evidence that support success of token economies in general education classroom. Becker originally sought to guide teachers in classroom management

strategies to minimize disruptions in the class. Becker (1973) found through classroom research and data collection that token economies were successful for typical classroom settings. Becker (1973) suggested that teachers develop knowledge is important for stimulus control procedures. Token economy was an application suggested as a classroom technique for learning processes and social reinforcement.

Kazdin and Bootzin (1972) provided research that further provided evidence of token economies for individuals in various institutionalized settings that were successful. Kazdin in his research compared a token economy to the general United States economy to explain influence of a reward system (Wade, 1979). Kazdin had determined the effectiveness of the reinforcement was dependent on the delay. Token exchange for reinforcement was dependent on an individual's endurance to delay reinforcement, the wait time between completion of behavior and reception of token, also the reward for token exchange. Improper delay in timing of token reinforcement and reward could either strengthen target behavior or adversely affect the desire outcome. Target behavior of the client could be shaped using a desired reinforcer through a token economy. "In contrast, a token economy may not be effective due to several variables. Such factors include the relationship between the individuals earning and delivering tokens, their social interactions, and their expectations" (Matson et al., 2016 p. 2).

Jones and Kazdin (1975) investigated programming response maintenance after withdrawing token reinforcement. Jones and Kazdin had found that a way of reducing dependency on tokens through other reinforcement using contingencies. In the late 1970's and early 1980's Kazdin (1982) began to publish academic articles that reflected on the success token economies had during the late 1960's and early 1970's. Kazdin

promoted the idea that token economies were an effective behavior management system due. This was credited to affordability to implement, practicability for staff management, and customizable for individual clients (Kazdin, 1977).

Token Economies in the Classroom

By the 1980's, researchers Ayllon, Azrin, Becker, Kazdin, Kasner, O'Leary, Paul, and Staats had become the most influential researchers investigating token economies (Kazdin, 1982; Liberman 2000; Matson et al., 2016). Other researchers began to build upon the established findings of previous research especially the token economy system influence on classroom settings. Gable and Strain (1981) determined from their research that despite a student's learning history or personal experiences, a token economy could be tailored for behavior management for an individual student that could be effective. The effectiveness of a token economy not only improved behavior management but also influenced social and academic gains. This social and academic development was influenced by behavior management strategies that is enabled using the token economy (Kazdin, 1982).

DeVries and Feldman (1983) also probe the concept that a token economy behavior management influenced academic success in the classroom setting. DeVries and Feldman explored the efficacy of token reinforcement system combined with behavioral contracting to increase acquisition in vocabulary and site words. The results indicated the token economy system influenced increase in motivation. DeVries and Feldman credited change in the acquisition through the cause-and-effect relation of a token economy system:

Since the teacher's prescriptive, methodology remained constant across baseline

> and treatment conditions, the systematic introduction of the continued management procedures appear to be a plausible causal agent in effecting enormous acquisition rate change. Student motivation was influenced by the impact of preference surveys, reward menu, behavior contracts', and the material rewards system. (p. 11)

A study in 1983 by Rucker and Feldman demonstrated how influential a token economy system can become in classroom settings. Rucker and Feldman (1983) observed a group of teachers that selected fifty random students of 2nd and 3rd graders which were first measured through baseline on their ability to start up latency, appropriate utilization of instructional hardware, and group decorum. They were then broken off into two classrooms to examine two different token economy system approaches. In one classroom there are groups of students were measured through self-monitoring their behavior using tokens. In the other classroom there are selected student leaders in each group that will determine the distribution of tokens. The results of the study resulted in successful of both token economy systems compared to the baseline. The results of the study suggested that contingent reinforcement was the key factor that led to compliance with startup latency, appropriate utilization of instructional hardware, and group decorum. The researchers also suggested that the student lead token system was more potent than the self-measurement approach.

Salend and Johns (1983) research also demonstrated how influential token economy systems were in classroom environments. Salend and Johns examined two educators with negative attitudes in mainstreaming an exceptional student of eight years old with emotional disorder. The teachers also expressed frustration with working with

other exceptional students in general education classes. During a twenty-two-week data collection a baseline and a token economy system intervention was measured and compared. The token economy as a behavior intervention for the student was successful. While the teacher's attitudes about exceptional students being mainstreamed remained the same, they did feel more confident with a token economy as an effective behavior intervention.

Even though token economy systems during the 1980's had become increasingly less relevant in various general education classroom settings, it was recognized as an effective behavior intervention for students with disabilities especially for students' emotional behavior disorders. Schoen (1985) referred to token economy systems as "a powerful impact on the predictability of compliant behavior" (p. 7). Schoen (1985) advocated for token economy systems to be used as a behavior intervention for noncompliant students with disabilities. Schoen (1985) credited the Premack Principal as the theoretical concept implemented for compliance with noncompliant students. Rosenberg (1986) would also support findings that token economy systems were particularly effective for classroom settings that promoted behavior management for students with disabilities.

Rosenberg (1986) investigated how to maximize the effectiveness of a token economy system. In the discussion of the research, Rosenberg had determined that various factors included in a token economy system would enhance the quality of behavior management. These factors included the use of classroom rules to set expectations, providing student opportunities to earn tokens, and teachers providing new incentives for token exchange. "Instead of the behavior exclusively occurring under lock-

stepped, teacher-directed, and teacher-dependent conditions, the student is given the opportunity to become more self-directed and independent" (p. 247).

Van Brock and Elliot (1987) determined which behavior intervention rated the highest in effectiveness and acceptability. The result suggested the Token Economy system was the highest rated and found most favorable and practical for teachers in the study. Another study that found the token economy system favorable is in Smith et al., (1988) study that found that a token economy system was successful in reducing disruptive behavior that interfered with student learning. Implementation by teachers tend to be problematic despite favorability, suggestions of additional training is required for impactful implementation.

Gaughan and Axelrod (1989) investigated the relationship between behavior and achievement for student with emotional behavior disorders (EBD). In the study it was referenced that there are inconsistent results when comparing levels of on-task behavior with standardized achievement. Shook et al., (1990) in contrast found that token economy systems also reduced disruptive behavior but also allowed students to engage in course work more often. Like previous studies consistency with implementation by teachers was a driving factor in effectiveness of the token economy system. Miller et al., (1990) investigated motivation as a factor in the token economy system. The results of the study found that the fines given to adolescents caused animosity which increased social disruption and increased aggression for participants in the token economy.

Stover's (1994) report on the application of a token economy for students in an emotional support classroom result indicated increase on-task behavior and decreased undesired call outs. "Comparison of baseline and intervention indicated significant

improvements in behavior, which were maintained during a fading period. The students liked the token economy system" (p. 1). Lyon and Lagarde (1997) promote the use of a digital token economy system for teachers looking to motivate their students. In the article it explains that students find a graduated reinforcement system easy to understand. Lyon and Legarde convey the importance of data when determining intervention for target behavior. Data tracking being a necessary part for a success token economy system including the use as a behavior intervention.

Charlop-Christy and Haymes (1998) examined using objects of obsession as tokens for ASD students compared to use of standard symbolic tokens. Students with ASD were provided images or items that were of interest or desire for the students that represented token currency. The researchers found that the individualized token currency for each student was more effective compared to generalized tokens for all students. Leblanc et al. (2000) investigated the use of a token economy system to reduce excessive inappropriate behaviors. In the study it was suggested that age is not a factor for token economy use as a behavior intervention for participants that lack adequate social skills. Leblanc et al. found "the procedure was so effective that response cost was rarely implemented" (p. 142).

History of Digital Technology in Education

Digital technology has transformed learning in classrooms. Teachers have become increasingly familiar to using digital technology in classrooms as a tool to enhance learning. Technology in education is continuously evolving factor in classrooms. Many aspects of technology have added to the classroom experience. Digital use in classrooms advanced classroom technology due to the convenience of information that

can be shared through images and audio.

Notable Digital Precursors in the Classroom

A notable predecessor to digital technology was the use of the Magic Lantern projector created in 1870. The importance of this projector was the ability of enhancing an image presented by the teacher using light and glass plates. This technology was the first to be able to show and change images through a presentation (Shepard, 1987). The invention of the radio in the 1920's was also an early digital predecessor that could relay information through audio (Tyler, 1939). Display and audio are two aspects of digital technology that provide value in classroom.

After World War II overhead projectors began to appear in classrooms. Much like the magic lantern projector, teachers could present images to students but also making it flexible for presenters to share own customized information (Roberts, 2014). In the 1950's headphones such as the Koss SP-3 became available for students to wear when listening to transmitted audio. Headphones were an early device that allowed individualized use of electronic technology (Stasiunas, 2001). Film projectors also became available in the 1950's classrooms which provided predeveloped instructions and lectures (Ellis, 1964).

Skinner's teaching machine (1958) was an early device individualized for student learning. Skinner's teaching machine is a machine technology that enhances student learning through conditioning. The Skinner teaching machine provides quick and automatic feedback to students that increases their likelihood of learning retention. Students were more likely to engage with the learning material in the teaching machine. Students were able to control their access to information and to learn on an individualized

pace (Skinner, 1958). The Skinner teaching machine continuously engaged students that were actively using the machine by practice and testing of content in which the student was learning. Students were provided information with minimal delay by providing instant answers to the learning assessment within the machine. Students were able to review their answers by instantly comparing the results to the prerecord answers within the machine. This would provide flexibility in the rate for individual students meeting their learning needs.

Emerging Digital Displays in the Classroom

The photocopier was first introduced which provided more visual detail and availability to capture images and text in detail (Housner, 1995). In 1972, handheld calculators were becoming available in classrooms (Demana and Waits, 2000). These calculators much like the Skinner teaching machines were able to provide instant information for learning. Also in 1972, the scantron system of learning provided teachers quick grading to determine student progress. The use of photocopiers, calculators, and scantron machines were the first digital displays in the classroom (Moncaleano & Russell, 2018).

Emerging Computers with Digital Displays in the Classroom

In the mid 1980's, Apple laptops and Toshiba laptops began to become available for personal use. These devices were able project digital displays that were most useful for typing and saving text documents. In 1987, Apple introduced a program called "Presenter" which was bought by Microsoft company that same year later and renamed PowerPoint. This program helped project information as a digital display for presenter such as a teacher or student. LCD digital data projects were created in 1988 and by the

early 1990's had become available for purchase for education and personal uses. The first interactive white board was first introduced. The interactive white board would help student engage in digital displays presented by the teacher. Although this technology was created at this time, it was rare for most classes to have access to this technology.

Increase in Information Exchange

In 1993, the world wide web had become available for commercial use which provided an increase on the ability to share information, research, and communication through digital networks. Also, in 1993, Apple introduced the first Personal Digital Assistant that helped users organize information through a small transportable device. In 1997, Google had become an available search tool that could provide researchers with information available on the internet. In 1999 Bluetooth had become available for wireless data transfer using ultra high frequency radio waves.

Cuban (2001) made many educators reassess how they approach technology in the classroom. In the early 2000's, many learning communities were making technology reforms to meet technology integration. Cuban criticized learning institutions for placing large amounts of money into computer hardware and expecting academic gains from the investment. Governments and education financial backers were looking for investment returns for students that would prepare them for technology centered workplaces. Reforms in accountability and productivity because a focus in technology education. Reforms included expectations of measuring learning and meeting learning objectives with the use of computers. Teachers often were apprehensive in the use of computer technology due to their unreliability to access and to integrate in large population of students. Software at the time was not relatable to the needs of various classrooms.

Technology issues were concerning to many teachers due to the risk of technology not properly working which would take away valuable academic time (Bitner & Bitner, 2002).

There were factors that hindered early integration of technology in education in the 2000's. Many teachers lacked technology training to integrate computers in the classroom (Bitner & Bitner, 2002). Low-income schools were unavailable to access technology, while more affluent communities were able to provide computer access to students. Even when low-income schools were eventually provided computer access to students, teachers were often unavailable to provide meaningful instruction to students due to more complex learning environments due to social economic needs (Cuban, 2001).

Digital Token Economies in Education

Zuo-ming (2005) introduced the idea of virtual value and a broader perspective of a computerized economy in which the researcher credited Karl Marx (2015) for the general concept. Zuo-ming (2005) research expanded the idea of token economy system expanding beyond the realm of finance. In his research he sought to provide a system that met the psychological needs of participants and not necessary the increase in commodity gains. In the research a proposed virtual value to provide to those who work economic jobs to earn incentives based on human preference beyond providing financial wealth. Zuo-ming (2005) suggested that the use of a virtual value would have "the power of controlling culture". Tong and Jiayou (2021) would later expand on this research by suggesting the digital token economy could be an effective substitute for financial risk. As a financial substitute a digital token economy could help institutions be effective in providing services.

Digital Token Economies With Students in Inclusive Classrooms

Digital token economies began to appear in classrooms with the creation of several web applications. Classroom Dojo was created in 2011 as a way for primary school teachers to build a positive classroom culture through feedback for skill sets in a class. The web application expanded as a communication tool for parents and teachers. This included individualized profiles for students online in which Dojo points were tracked for achievement in skill sets (Harris, 2016).

LiveSchool was also created in 2011 as an alternative to Classroom Dojo (2011). The web application focused more for secondary schools by providing a simplistic visual compared to Classroom Dojo and a schoolwide economic system of points and focused communication between teachers of the same students. “LiveSchool converts points into a token economy, by creating “paychecks” using an internal banking system and allowing students to spend their checks on predetermined items (e.g., homework passes, school supplies, stickers, and candy) as designated by the school” (Riden et al., 2019).

ClassCraft was created in 2014 as a web application that produces a school wide digital role-playing game designed. Students create highly detailed individualized avatar profiles that increase in design by student accumulating points given by teachers. Students earn points to upgrade their avatar profile to obtain powers that provide them privileges at school decided by the game masters (Sanchez et al. 2017). Much like Classroom Dojo (2011) and LiveSchool (2011), ClassCraft (2014) is designed for behavior management.

Soares et al.’s (2016) research for students, parents, and educators alike examined whether a digital classroom token economy was a successful tool in content

understanding retention and found that “Numerous individual studies have demonstrated successful application of TEs across populations and settings” (p. 380). The research was directed towards educators to use digital token economy system as a practical tool for enhancing content understanding in English Language Arts for students with autism. A digital token economy system that is successfully implemented could be an effective accommodation tool (Constantin, 2017). In addition, a token economy tool can be incorporated cross curriculum which is a great way to influence learning.

Extinction in Knight’s (2015) study is the gradual release of sensory rewards for student success using the digital token economy. Positive rewards for this digital token economy include instant visual feedback, audio feedback, and successful score completion for choice reward. This also includes extinction of deterrent consequence such as the teacher telling the student that they did not earn the reward for a successful assessment. Another gradual release of a negative deterrent would include the student reading a statement that encourages them to stay focused during learning and to use more effort in the next assessment. Extinction in this study is important for the student retention of behavior learning modifications for success during statewide assessments in areas of reading comprehension (Knight, 2015). In Knight’s research, findings indicated that behavior management with the use of sensory rewards in a digital economy system enhanced student learning.

Digital Token Economies With Students With Exceptionalities

The use of digital devices for students with exceptionalities has gained more popularity in recent years (Roberts-Yates & Silvera-Tawil, 2019). The use of digital tools for teachers and school districts have increased due to the academic success for various

students. Increased use of digital devices as learning tools was also influenced by the COVID-19 pandemic (Ting et al., 2020). The use of digital devices can be modified to meet the needs of individual students, including modifying behavior for success in their learning goals.

Students with autism are highly influenced by sensory stimulants compared to peers. The use of digital tools is appealing to many students with autism (Roberts-Yates & Silvera-Tawil, 2019). Students with autism are influenced by reinforcements like their peers and will modify behavior according to the appeal of the extrinsic motivator (Rana 2017). The combination of token economy and digital use as behavior modifiers can be used to engage the interest of the individual. This appeal to the sensory stimuli for students with autism maybe more successful for this population compared to other settings.

Homer et al., (2018) reported on field experience that was related to incentive-centered design classroom environment of elementary schools with English as second language (ESL) students by using digital badges-and-points which students could earn by achieving specific behaviors and learning goals. The research showed significant improvement in positive on task behavior and student learning via test scores for grade levels 3 and 4 with the use of a digital token economy. Roberts-Yates and Silvera-Tawil (2019) explored the use of digital technology for secondary students who have an intellectual disability and/or ASD. The study suggests that technology that is emerging in inclusive classroom settings can “provide guidance to groups of students, encourage them to express their ideas, motivate physical activity, and improve general social interaction skills” (p 197). The results of the study included evidence that technology can be used to

engage students with disabilities in multisensory, active, and experimental learning. Technology encourages active listening, motivation, reinforcers for positive social behavior, reduces anxiety, and promotes learning across the curriculum.

DeJager et al. (2020) researched token economies positive reinforcement compared to the use of response cost negative reinforcement or combination of both, to determine which was most successful for student learning grades K-5 in a rural elementary school in all subjects throughout the school day. In the single subject research design, the data indicated that using a token economy with positive reinforcement only provided more academic engagement and less off task behavior compared to other interventions. Surveys and interviews with participants also indicated more favor to the implementation of a positive reinforcement token economy over all other features of behavior management. Glodowski et al. (2020) examined how effective token economies were paired with a token schedule on response rates for students with ASD. Glodowski et al. (2020) found a higher rate of responding occurred using token condition compared to extinction for participants. The researchers suggested the results support the systematic evaluation of token schedules of reinforcement in clinical settings.

Riden et al. (2019) provided a detail investigation of applications that provided positive classroom environments using electronic behavior management programs. Riden et al. (2019) found that classroom management is critical in producing desired student outcomes. For the teachers who have difficulty with classroom management often have difficulty implementing a reinforcement contingency. Digital token economy provides a viable option to implement a reinforcement system to manage behavior. Riden et al. (2019) also expressed the importance of the facilitator’s implementation of the digital

token economy. Digital token economy is perceived as a user-friendly interface that promotes implementation (King et al., 2021).

According to dos Santos and Ruiz (2021) “ClassDojo proved, according to the data, that it can motivate kids’ participation in the online classes, foster healthy competitiveness among classmates, and enhance learning and enjoyment. The findings showed that students were able to learn, interact, and have fun at the same time.” These results providing evidence of classroom dojo being an effective resource for distance learning and in the effort to prevent the spread of COVID-19.

Hudachek (2021) explored the use of a reinforcement-based system that is capable of changing multiple behaviors across multiple people while in a virtual environment during the COVID-19 national quarantine. The reinforcement-based system includes creating a menu of items, privileges, or rewards during the first week of school while students are in a group discussion. The reinforcement-based system involves students in the decision making of an appropriate reward. Teachers would have the menu of agreed rewards available to be seen in the classroom. Physical tokens can be used with students that prefer tactile learning such as representative money, token chips, or stickers. According to Hudachek (2021), digital token economies are increasing in popularity among students with digital fluency. Teachers using a reinforcement-based system should repeat expectations and have differential expectations for each student (Constantin, 2017). In the study, the token economy is effective when a “first” “then” expectation is established.

Research Questions

The purpose of this generic qualitative study is to examine middle school teachers' perceptions of digital token economy as a tool to support classroom management, student motivation, and academic achievement for students with exceptionalities in inclusive classrooms in Florida.

1. What are teachers' perceptions of digital token economy as a classroom management tool for students with exceptionalities in an inclusive classroom?
2. What are teachers' perceptions of digital token economy to motivate student with exceptionalities in an inclusive classroom?
3. What are teacher's perceptions of digital token economy as a support tool for academic achievement for students with exceptionalities in an inclusive classroom?
4. What are teachers' perceptions of challenges and successes when implementing a digital token economy for students with exceptionalities in an inclusive classroom?

Chapter 3: Methodology

Aim of the Study

The aim of the study was to investigate teachers' perceptions of digital token economy as a tool to support classroom management, student motivation, and academic achievement for students with exceptionalities in inclusive classrooms in Florida. The expected contribution of this research was to provide educators with insight on how digital token economy functions as a classroom management tool for students with exceptionalities in an inclusive classroom. I also aimed to find teachers' perceptions of digital token economy to motivate student with exceptionalities in an inclusive classroom. I investigated teachers' perceptions of digital token economy as a support tool for academic achievement for students with exceptionalities in an inclusive classroom. Lastly, the aim was to analyze teachers' perceptions of challenges and successes when implementing a digital token economy for students with exceptionalities in an inclusive classroom.

Qualitative Research Approach

The methodology used for this proposed study was generic qualitative research. The generic qualitative research design provided flexibility for the researcher to obtain and present findings pragmatically (Kostere & Kostere, 2021). Creswell and Poth (2018) suggest that methodology is a continuum of knowing. The generic approach was appropriate for this intended study for insight on research that centers on subjective opinions with supporting literature (Kostere & Kostere, 2021). This methodology selection focused on data from the participants' own words.

Various methodologies such as case study, phenomenology, and grounded theory required a certain element depending on the design. This generic qualitative study focused on the understanding of perceptions, as collected through an interview process. The approach provided data on subjective beliefs, attitudes, opinions, and reflections of experiences. A generic qualitative approach can be used when the researcher has a previous understanding of the investigation and looks to add on to previous knowledge (Kostere & Kostere, 2021). Previous knowledge and understanding from the researcher provided a unique look into the topic (Jahja et al., 2021).

Participants

The participants of this study varied in age, ethnicity, and gender. The participants were purposively selected teachers with at least three years of experience in middle school inclusive classroom with exceptional students and experience using a digital token economy. Purposeful sampling was necessary in selection of participants (Creswell & Poth, 2018), meaning that participants were deliberately chosen based on the experience of implementing a digital token economy in inclusive classrooms. There was 10 participants in total. The number of participants was necessary to provide a variety of perceptions and experience for data saturation. According to Malterud et al., (2016) a purposive sample of 6 to 10 participants provided sufficient information in a qualitative research study. The research site where I recruited participants was at an online school in a Southeastern state in the United States. My current role at this research site is teacher of 7th grade Civics and Advanced Civics.

According to Hennink & Keiser (2021) data saturation is determined by the characteristics of the study. The focus on research objectives guides researchers in

determining if enough data was gathered for saturation. Factors to consider are “sampling strategy, stratification of sample, researcher's experience in qualitative research, saturation goal, and degree of saturation sought” (p. 8). Considering the parameters creates a custom sample size for each study. Data saturation was complete when research questions can be answered based on the data collected.

Data Collection and Instruments

Qualitative data in this research was collected through interviews using an interview protocol. Data was recorded using the protocol in this study (see Appendix A). I interviewed participants using the preplanned questions to determine their perceptions of their implementation of digital token economy for students with exceptionalities in inclusive classroom settings. Background information questions and a follow up question were included in the interview protocol so that participants can expand on their experiences. The interview questions went through refinement to strengthen the reliability to obtain quality data.

According to Castillo-Montoya (2016) there is a four-phase process to refine an interview protocol for validity. In phase 1, I ensured that the interview questions were aligned with the research questions. This was complete by having my dissertation chair and committee member validate alignment. In phase 2, the interview protocol was developed to promote conversation by composing interview questions differently from the research questions. Phase 3, a doctoral colleague reviewed the interview protocol and provided feedback that was used to refine the questions in the protocol. Lastly, Phase 4 of the interview protocol refinement of this research included two pilot interviews that provided feedback which was used to further refine the questions in the protocol.

Procedures

Upon the study's approval from Nova Southeastern University IRB and approval from school and district research site, I email potential teachers' information regarding participation in the study (see Appendix C). Permission from the school district and the principal was obtained prior to contact with participants. The principal of the school provided email contact information to communicate with potential participants. Participant teachers responded to me directly for the study. Teachers were asked to respond to my email within seven days if they were interested in participating in the study, then complete the interview consent form (see Appendix D).

There was a two week recruitment process. An initial recruitment email will be first sent see (Appendix B). One email reminder was sent during these two weeks. If there was not enough participants another recruitment email (see Appendix B), would have been sent for two more weeks of recruiting with the same process. Teachers who agreed to participate via email and meet the inclusion criteria were scheduled for an interview at an agreed time. I sent them a follow up email as a reminder for their upcoming interview. The interviews took place using Microsoft Teams conferencing application.

Interviews

A list of names and addresses of potential participants were be provided by the research site. I evaluated the information provided by the research site to determined which participants would be contacted for request to participate in the study. Participants selected for the study were encouraged to elaborate their experiences based on their perceptions which included thoughts, beliefs, images, feelings, sensations, memories, etc.

Participants were encouraged to be honest in their perceptions and that there was no right or wrong answer to the questions in the interview. I conducted the interviews by meeting with participants one-to-one at an agreed upon meeting time.

Each interview on Microsoft Teams took up to 45 minutes to complete. Participants were provided the question in text and read aloud. Interview questions were be displayed on the conferencing application which allowed the participants to view and elaborate on the questions. Participants were observed during the interview process for non-verbal cures. Online conferencing applications provided interviews more data collection opportunities compared to a phone interview.

Online conferencing applications make the study efficient by eliminating travel time and other cost normally associated with face-to-face qualitative interviews. (Glassmeyer & Dibbs, 2012). This also provide convenience to the participants of the study. Follow-up questions were asked to clarify responses when needed. The participants in the study were encouraged to provide a detailed explanation of their perceptions, which includes their thoughts, memories, beliefs, imagery, feelings, sensations, etc. Data that was collected and transcribed was also be provided to participants for an opportunity to review the transcript of the interview.

For this study, a qualitative interview tool was developed and used by me for data collection. Data collection through interviews was necessary to gain insight on teacher perceptions of using a digital token economy as a tool. The interview questions was based on the research questions (see Appendix A). The questionnaire was reviewed and confirmed by research experts my dissertation chair and dissertation committee member (Castillo-Montoya, 2016). The process I used for interview protocol refinement include:

(1) Ensuring question alignment with research questions, (2) constructing an inquiry-based conversation, and (3) receiving feedback on interview protocols (Castillo-Montoya, 2016).

Data Analysis

After the interview process I transcribed the audio to text for accuracy using Microsoft Teams online application which includes a transcription tool. Participants reviewed their responses and make any corrections, edits, or omissions when provided the completion of the transcription. I then used the notes and annotations provided by the participants as data. The transcripts were coded in bivo, and data will be analyzed using thematic analysis. According to Nowell et al., (2017) there are six phases to thematic data-analysis: (a) I become familiar with the collection of data through analysis of the interview transcriptions, (b) in vivo coding was be used to organize data, (c) I identified and categorize the data, (d) I reviewed the results of the data and develop categories, (e) I identified common themes amongst the categories, (f) I then presented the findings in discussion.

Ethical Considerations

Confidentiality and anonymity of participants was an important priority when publishing the results of the study. The participants were anonymous to everyone except for myself. Participants had the option to withdraw at any time without penalty. Confidentiality and anonymity of the research site was also included. All documents were secured, collected, and protected on a password-protected computer then will be deleted after three years from the computer hard drive. Data collection did not begin until the

study was approved by Nova Southeastern University IRB and research site approval. When the study was approved only data related to the study will be collected.

Trustworthiness

In qualitative research that includes interviewing participants, trustworthiness was a necessary concern. I had a reflection journal throughout the interview process. Triangulation was included by sharing with participants the interpretations and findings of the research to confirm validity and reliability (Nowell et al., 2017). Thematic data analysis promotes truth value. This was accomplished when I provide information regarding how data analysis was conducted by providing transparency about assumptions that I used to provide my analysis (Nowell et al., 2017). Specific elements of trustworthiness are discussed below.

Credibility

Credibility is contextual to the research and is an essential aspect of trustworthiness (Hammarberg et al. 2016). In this research a criteria was used to evaluate and set standards for creditable evidence and truth value. Authoritative sources such as transcriptions of interviews with experienced teachers by the researcher provides credibility to support findings. Description of the data collection process is provided. A field journal will also be used as a tool to reflect on the context of the evidence collected (Hammarberg et al. 2016).

Dependability

Dependability or reliability was determined by the consistency of the results. For this research data that consists of patterns provides supporting evidence (Hammarberg et al. 2016). Member checking was used to confirm statements made by the participants.

Variation of participants are used to prevent limited research. Variation of participants brought a variety of insight. Given the same data other researchers could replicate the research and find similar patterns.

Transferability

Applicability for this research was related to the findings from interviews with teachers that met the criteria of the study and their previous experience (Hammarberg et al. 2016). The findings of this study was applied to the understanding of the implementation of a digital token economy in an inclusive classroom for students with exceptionalities. Authentication was achieved by interviewing several participants in which data patterns can occur for evidence. Expert sampling was used to recruit a group of participants with specific criteria.

Confirmability

The consistency of the findings determined the confirmability of the research results. In this study it was necessary to promote consistency to ensure validity. The strength of the qualitative study relied on the perceptions of the participants in their own words. Participants reviewed their comments transcribed to verify the authenticity of their comments. The participants were provided the opportunity to provide notes and annotations on the provided transcriptions (Schwandt et al., 2007). I used the information provided as part of the data collection process.

Potential Research Bias

Bias is any deviation from the truth. “Bias is any trend or deviation from the truth in data collection, data analysis, interpretation and publication which can cause false conclusions” (Simundić, 2013 p. 12). Bias in research can be detrimental to the

conclusion of a study. Confounding variables and limitation of the research will be reported. Limitations were reported to reduce and minimize the deviation from the truth. Fairness and completeness in data analysis and interpretation in this research included collecting data until there was no gain on new insights and looked for potential outliers.

My bias was related to perception of successful implementation of digital token economy in personal teaching experience. There are many token economy studies but none focusing on teachers' perceptions of implementing a token economy with digital tools in inclusive classrooms. This led me to conduct this investigation. Therefore, confirmation bias was a recognized challenge. To manage and minimize confirmation bias, I continually reevaluated the interview transcripts to challenge preexisting assumptions. Participants will confirm their answers before data analysis. Transparency with the data and reported helped avoid bias.

Limitations

All research has limitations and there is no perfect design (Marshall et al., 2021). The boundaries of this research are related to time constraints and availability of participants. The participants are online teachers that often manage a large population of students in various online classrooms. Therefore, participation in the study maybe constricted. This availability may have impacted the findings or generalizability of the findings due to time constraints. The use of a single school was also a limitation that should be considered. This impacted generalizability of the findings due to the limitation of reviewing only one learning institute teacher perceptions.

Chapter 4: Findings

Teachers have increased the use of digital technology in inclusive classrooms to promote learning (Roberts-Yates & Silvera-Tawil., 2019; Knox et al., 2020). From this increased use of digital technology in inclusive classrooms, the digital token economy has emerged as a support tool implemented by teachers. Despite this increased use of digital token economy, there has been a gap in the literature related to the perceptions of teachers implementing a digital token economy in inclusive classrooms (King et al. 2021; Riden et al., 2019; Sherin, 2016) The purpose of this generic qualitative study was to examine middle school teachers' perceptions of digital token economy as a tool to support classroom management, student motivation, and academic achievement for students with exceptionalities in inclusive classrooms in Florida.

This study was guided by four research questions to determine teacher perceptions of the implementation of a digital token economy in inclusive classrooms:

1. What are teachers' perceptions of digital token economy as a classroom management tool for students with exceptionalities in an inclusive classroom?
2. What are teachers' perceptions of digital token economy to motivate student with exceptionalities in an inclusive classroom?
3. What are teacher's perceptions of digital token economy as a support tool for academic achievement for students with exceptionalities in an inclusive classroom?
4. What are teachers' perceptions of challenges and successes when implementing a digital token economy for students with exceptionalities in an inclusive classroom?

The next major section of this chapter is a description of the data-collection interview process and the inclusion criteria for the study participants. Next, this chapter includes a presentation of the study results, which are organized by research questions. This chapter concludes with a summary.

Data Collection

The interview process of this study included 10 volunteer participants that met the inclusion criteria from an online school located in the southeastern United States. After the Institutional Review Board approved this research, middle school teachers with experience in inclusive classrooms were emailed by the research site principal an overview of the purpose and nature of the study. These teachers that met the inclusion criteria were invited to participate in the study. One to one interviews were scheduled with the volunteer participants on Microsoft Teams online conferencing application. The interviews were audio recorded and lasted up to 45 minutes.

The inclusion criteria required volunteer participants to meet the following requirements:

- The participant must be a teacher with at least 3 years of education experience.
- The participant must have experience teaching students with exceptionalities in an inclusive classroom.
- The participant must have experience implementing a digital token economy.
- The participant must be available and willingness to participate in an interview process that will be recorded and transcribed. Participants will remain anonymous when data is published in the study.

After each participant's interview, I used Microsoft Teams transcription tool and paired it with the audio recording of the participant to ensure accuracy of automated transcription process on the conferencing application. To keep participants anonymous, they are designated as "participant" and the order in which they were interviewed (i.e., Participant 1, Participant 2). I verified the transcriptions process by rereading them twice while listening to the audio recordings. I then coded in vivo the verified transcriptions.

Study Results

The interview transcripts were analyzed in vivo according to the inductive six-step thematic procedure recommended by Nowell et al. (2017). In the first step of the analysis, the imported transcripts were read and reread in full to have a strong understanding of the participant responses. The second step of data analysis involved coding the data by grouping similar statements with similar meanings into categories. Due to the inductive nature of the analysis, codes emerged from the data through my recognition that the text expressed similar ideas, perceptions, and experiences. The in vivo coding process consisted of placing each block of text relevant to answering the research questions into a node. The node represented a code and was labeled with a descriptive word or phrase which indicated the meaning of the content. Transcript excerpts with meanings that were similar were assigned the same node. During this step, 186 relevant excepts from the 10 transcripts were grouped into 34 codes. Appendix E includes a list of the 24 codes formed during analysis.

In the third, fourth, and fifth steps of the analysis, similar codes were grouped to form themes (Nowell et al. 2017). Step 3 codes were grouped when they had similar meanings or in relation to a theme. This involved making identifications of themes by

reviewing the data assigned to each code and making notes on comprehensive themes to which they were assigned. In step 4, themes identified in the previous step were explored to ensure that each theme was coherent and differentiated from other themes. In vivo analysis involved placing nodes in the representing themes. The final step of the analysis involved finalizing the themes to show the significance as answers to the research questions. During these steps, 34 codes were grouped into four major themes. Table 1 indicates how the codes were grouped to form the themes.

Table 1

Grouping of Codes Into Themes

Category (listed alphabetically)	No. participants contributing	No. transcription excerpts included
Theme 1: Tool for Student Engagement	10	64
Assign student roles		
Competition between students		
Digital token distribution low for increased value		
Gamification of coursework		
Nontangible rewards		
Opportunities to reward students		
Promotes opportunities for struggling students		
Promotes persistence in students		
Promotes student engagement		
Student compliance		
Students desire physical reward		
Students feel encouraged		
Students feel they have choices		
Student recognition from peers		
Students willing to take academic risks		
Theme 2: Tool to Promote Successful Learning Environment	10	46
Environment being a factor for effectiveness		
Helps teachers with data tracking		
Improvement to student and teacher relationship		
Increases academic achievement for students		
Promotes Inclusion		
Promotes students to manage their behavior		
Students enjoy participation in the digital token economy		
Teachers feel successful in classroom management		
Teachers found implementation enjoyable		
Theme 3: Tool for ESE Support	10	15
Digital token economy used to help meet IEP goals		
ESE students additional support		
Reduce behavior disruptions		
Teachers used digital tokens with alternative assessments		
Theme 4: Implementation Challenges	10	22
Decrease participation with removal of digital tokens		
Difficulty implementing the digital token economy system		
Difficulty with students' willingness to participate		
Problems with limited rewards		
Students frustrated with the digital token economy		
Time constraints		

Theme 1: Tool for Student Engagement

The 10 participants provided various reports of how digital token economy was used for classroom management. Notably all 10 participants reported that digital token economy was engaging. Participant 9 expressed “I really believe that the students got actually engaged in learning because of the token economy, the digital token economy. Especially those kids that you know. Have those disabilities, it really model it truly motivated them, especially the ones that have those exceptionalities that are not as mild, I think encouraged them to participate in the learning”. All 10 participants reported different perceptions of how engagement occurs from previous experience. Participant 8 and Participant 1 mentioned having students run activities for other students to earn digital tokens. Participant 1 said “I would also incorporate the students and to help with running the game”. Seven participants reported that students were in competition with each other for digital tokens. Participant 10 expressed “I believe because the kids are really looking to solve the problems and to work on the problems. It lessens the behavioral disruptions because they're engaged and they want to earn those points and they want to win the game”.

Seven of the ten participants reported that digital tokens were used for gamification of coursework activities. Participant 6 stated “we use them as, mostly like, rewards for games, and good assignments. The kids could made tremendous comebacks. And then the kids were able to cash them in for, you know, extra credit. Points”. While many participants expressed use of digital tokens for competition, other participants expressed providing digital tokens to students participating in the gamification of the course work. Participant 4 said about digital tokens for student engagement “So not just

sitting there and listening, but actually participating. So, it did encourage them to participate in those lessons for digital tokens".

Seven out of ten participants expressed that digital token economy system provided opportunities for teachers to reward the students. There were two different categories of rewards mentioned by the participants. Five participants reported that they rewarded students with nontangible rewards. These rewards were provided in a digital environment. Participant 4 expressed "Throughout the whole year, and to be accurate, because if they win a badge, if they earn a badge, I should say. Then they want to see that badge because I can tell you if I earn a badge, I want to see it, right? If I earn a certificate, I want my certificate".

These participants reported that the nontangible digital rewards were a collection of accomplishments. Participant 9 used digital tokens for students to exchange for visual customization of their student avatars "We will do a background or avatar competition and then we would vote, which was the most original avatar, but in order to do that you have to buy things for your avatar or check the background with the token, so the kids truly work". Which also at times students were provided recognition from their peers according to three participants. Other participants expressed students desired physical rewards over nontangible digital rewards. Participant 8 said "That the point system, but one of the things was a token store on Fridays that they could go and buy gum or candy or makeup or lots of different things, sodas and things like that".

Half of the participants mentioned that the digital token economy system provided opportunities for struggling students. Participant 3 explained a previous experience "For one assignment, I only had a few takers like a couple. But one of those takers surprised

me. She's had some. Some personal struggles, and I was surprised that she was the one who volunteered first". Three participants mentioned that this helped condition persistent behavior in students. Persistence was influenced by student competition and availability to rewards. Four participants mentioned that students were overall more compliant when participating in the digital token economy. Participant 10 expressed "it does help classroom management because the students are more engaged in what they're doing and then that therefore it cuts down on behavioral disruptions". Four of the ten participants perceived the students to be overall more encouraged in class environment and that they had access to more choices. Referring back to Participant 10 report that "they [the student] want to participate more and therefore are more willing to take a [academic] risk".

Theme 2: Tool to Promote Successful Learning Environment

All 10 participants mentioned that the digital token economy helped increase academic achievement for students. Participant 7 reported using digital token economy to prepare for "Midterm and final exams because they were just worded in such a weird way. It was the easiest way to get the kids familiarized with the question types". This was reported by seven participants that student enjoyed participating in the digital token economy. It was also reported that teachers felt their relationships with students improved with use of digital token economy. Participant 1 described "A good classroom relationship, and I can tell you by the end of that year, we were a lot closer".

Seven out of the 10 participants reported that their implementation of the digital token economy system promoted inclusion. Participant 9 mentioned "To those kids, that token mean a lot. They work for the token, not for the sake of the course. Some of those

kids work for the token, so they put more effort into the course because of the token". The digital token economy system was used to promote students to manage their own behavior. Some teachers also felt successful in classroom management when implementing the digital token economy, including teachers reporting enjoyment of implementing the system. Participant 5 said that tracking data was also convenient when implementing a digital token economy "I think keeping up keeping accurate record is you know one of the most difficult things for me personally for my students…I just use a simple Excel sheet. You have the student's name and then a running record of their tokens and you know, depending on what area and then how you're rewarding them a column for how you're rewarding them. It's great".

Theme 3: Tool for ESE Support

ESE support was mentioned by all 10 participants. Out of these participants six of them mentioned that they used a digital token economy for additional ESE student support. Participant 6 said that "My 6th grade students. So, they're very competitive. For the tokens. Was away for some of my ESE students to bolster their grade and they also felt more like included in the class. They felt, you know more. That they belonged". Four of the participants explained that they used digital tokens to encourage ESE students with alternative assessments. Participant 3 reported "It's something that all students can do, in other words, something that students are not limited by because of their exceptionality then it adds engagement and like for example if I gave extra points for kids making something which I had done before or performing something, sometimes my students with exceptionalities would jump on that because it was not presenting things in the typical way".

Some participants using a digital token economy mentioned that there were less behavior disruptions. Two participants reported that they use digital token economy to help meet certain IEP goals. Participant 9 said “I tie the tokens with, like I said with the IEP and their goals that we wanted the kid to achieve. And that, you know, improved in the overall success of their performance in the class, and even on the social skills that they needed to work on”. These participants also mentioned how inclusion was a factor that helped promote ESE support.

Theme 4: Implementation Challenges

Challenges were reported by all ten participants. Six of the ten participants reported that some students have shown frustration with the digital token economy system. Participant 2 even going far as to say “One student, one time, got upset and knocked the table over”. A common occurrence expressed by participants that found challenges with students being frustrated with the digital token economy was availability for tokens and desirable rewards. Participant 9 expressed that “Sometimes it backfires and they should just shut down because they couldn't get the token or the dollar amount that they wanted”. Time constraints was also a factor mentioned by 4 different participants. Participant 10 said “You know, students got frustrated with not having enough time to answer the question.” and “There's a quick turnaround time and a lot of times they need more time to process and complete the problem”.

Some participants also said there were difficulties with limited rewards that were meaningful for students. Participant 7 said “They want to be rewarded in some way, it’s just very limited in our reward options”. This also coincides with some participants reporting difficulties with implementing the digital token economy system. Participant 1

mentioned that there was also a difficulty with student “Initial unwillingness to participate”. An interesting note made by Participant 9 said that “I remember when I stopped using that program, many students kind of stopped. Because one point, we changed platforms, and we didn't have that digital token economy included in the program. And I noticed that the level of achievement was less because they were accustomed to that positive reinforcement”.

Summary

Four common reoccurring themes emerged that related to every research question. Findings from all 10 participants indicated that there are four themes involved in implementation of a digital token economy for inclusive classrooms. Findings from all 10 participants indicated that student engagement, successful learning environments, elements of ESE support, and challenges with implementation were all factors in the implementation of a digital token economy in inclusive classrooms.

The purpose of this generic qualitative study was to examine middle school teachers’ perceptions of digital token economy as a tool to support classroom management, student motivation, and academic achievement for students with exceptionalities in inclusive classrooms in Florida. These themes are not only common in each research question but they are also factors unto themselves. For example, Theme 1: Tool for student engagement is also a factor of theme 2. Theme 2: Tool to promote successful learning environment is also a factor of student engagement which is Theme 1. Both theme 1 and 2 are elements of Theme 3: Tool for ESE support. All three of these themes have challenges in implementation which leads to Theme 4. Chapter 5 includes discussion, interpretation, and implications of these findings.

Chapter 5: Discussion

The implementation of token economy systems is widely acknowledged by educators and behavior scientist alike. Continuous dependency on digital technology influences the use of digital token economy system be provided on various digital platforms. In inclusive classrooms, teachers are the prime implementors of the digital token economy system. Digital token economy system is a tool which a teacher may use to influence student behavior. There are limited studies which provide teacher perceptions of the implementation of digital token economy. Their insight provides a unique perspective of behavior interventions for diverse groups of students.

There is a gap in the literature regarding teacher perceptions of the use of a digital token economy to address the needs of students with exceptionalities in the inclusive classroom, particularly in regard to student behavior, motivation, and academic success. This research investigated this gap in the literature by interviewing ten teacher volunteer participants that had experience to provide insight on how digital token economy addressed the needs of students with exceptionalities in the inclusive classrooms. These teacher participants provided insight specifically with the intent on finding perceptions of the implementation of the digital token economy particularly in regard to student behavior, motivation, and academic success.

Summary of Findings

The research questions sought to examine middle school teachers' perceptions of digital token economy as a tool to support classroom management, student motivation, and academic achievement for students with exceptionalities in inclusive classrooms in Florida. There were four occurring themes that addressed all four research questions. The

first theme reveals that digital token economy systems in inclusive classrooms is a helpful tool for student engagement (dos Santos & Ruiz, 2021). Various perceptions about this theme are supported by teachers that mentioned experiences to motivate students with rewards through gamification of the coursework (Sanchez et al. 2017). Most teachers described a desire to engage students in an enjoyable way (Roberts-Yates & Silvera-Tawil, 2019; Rana 2017).

Competition was mentioned by several teachers that motivated students. Teachers described having an influence of culture in the class through use of the digital token economy (Tong & Jiayou, 2021; Zuo-ming, 2005). Zuo-Ming, (2005) described use of digital tokens as "the power of controlling culture". Tong and Jiayou, (2021) promoted the idea that digital token economy was a way for managers of the digital token economy such as teachers to avoid actual personal financial cost while still promoting effective motivation for participants such as students in the digital token economy. This allowed teachers to use the digital token economy system a tool for classroom management with the goal to enhance the likelihood of academic achievement for their students (DeJager et al., 2020; Knight, 2015).

The second theme revealed that digital token economy systems in inclusive classrooms was a tool used by teachers to promote a successful learning environment (Homer et al., 2018). Homer et al.'s, (2018) previous findings showed significant on task behavior and student learning with the use of a digital token economy system. All the participants expressed a desire to increase academic achievement for students. Reports made by many participants that implementation of the digital token economy system was used to promote inclusion which ultimately helped the overall relationship between

teacher and students in the classroom (Riden et al. 2019). Some teachers reported the fact that they enjoyed implementing the digital token economy along with their students involved in the system. Participants reported that they felt successful implementing the system as well as it helped them track data. This enhanced the environments effectiveness to promote academic achievement for students (Riden et al. 2019).

The third theme revealed the use of the digital token economy system as a tool for ESE support. Some participants reported that use of digital token economy system was used specifically for ESE support in the classroom (Roberts-Yates & Silvera-Tawil, 2019). Roberts-Yates and Silvera-Tawil, (2019) found that use of digital token economy was appealing to ASD and ESE students to sensory stimuli. Previous themes 1 and 2 present the perceptions that the digital token economy system is a tool for engagement and to promote a successful learning environment. Some participants mentioned that digital token economy system allowed opportunities for alternative assessments for ESE students (Constantin, 2017).

Themes 1, 2, and 3 highlight the success attributes of the digital token economy system. While participants reported successful implementation of the system, many also mentioned challenges that were part of the implementation process. Half of participants expressed difficulty with initial implementation of the system in relation to student participation. This is in relation to how digital tokens are earned and what rewards are available. Over half of the participants expressed difficulty with some students being frustrated with the system process of earning tokens for rewards. This included time constraints with the overall implementation of the digital token economy system (Glodowski et al., 2020).

Theme 4 related to themes 1, 2, and 3 due to adversity that a teacher experiences when implementing a system. Challenges can occur with implementation in relation to the first three themes. The first three themes are the benefits teachers can experience from implementation. In contrast, theme 4 relates to the side issue of difficulties related to implementation of the system. Teachers often have initial difficulty implementing new systems in classroom settings (Mukherjee & Bear, 2017).

Interpretation of Findings

I developed themes based on common categories participants using in vivo coding. Appendix E presents the various categories mentioned by the participants. In the table I marked the number of participants contributing to that category and the number of transcriptions excerpts included. As I developed the themes, I kept an open mind to the uniqueness of each interview. I looked for patterns across all the participant interviews. These categories lead to four themes often were interdependent on attributes of the implantation of the digital token economy system.

All themes related back to the research questions on how middle school teachers' perceptions of digital token economy as a tool to support classroom management, student motivation, and academic achievement for students with exceptionalities in inclusive classrooms. All themes related to each research question which provided insight on the implementation process. Digital token economy implementation is a tool for classroom support due to the ability to have students engaged in the system which also promotes a successful learning environment. These aspects provide teachers opportunities to apply additional ESE support. Challenges exist in the implementation of this tool but often teachers continue to use digital token economy system due to success for students.

Teachers also found that they enjoyed implementing the digital token economy as much as students at times due to the influence on the learning environment which motivated students. These aspects were related factors that promote ESE support. All themes were interdependent to each other.

Table 2 shows a summary of the research questions and emerging themes. The first three research questions explore the use of a digital token economy as a classroom management tool, motivation, and for academic achievement. Research question four focuses on the challenges of using the digital token economy. The results of the study suggest that all four themes are related and interdependent on the implementation of the digital token economy. The challenges teachers face is a byproduct of the implementation.

Table 2

Summary of Research Questions and Emerging Themes

Research Question	Themes
1. What are teachers' perceptions of digital token economy as a classroom management tool for students with exceptionalities in an inclusive classroom?	Theme 1: Tool for student engagement Theme 2: Tool to promote successful learning environment Theme 3: Tool for ESE support Theme 4: Implementation challenges
2. What are teachers' perceptions of digital token economy to motivate student with exceptionalities in an inclusive classroom?	Theme 1: Tool for student engagement Theme 2: Tool to promote successful learning environment Theme 3: Tool for ESE support Theme 4: Implementation challenges
3. What are teacher's perceptions of digital token economy as a support tool for academic achievement for students with exceptionalities in an inclusive classroom?	Theme 1: Tool for student engagement Theme 2: Tool to promote successful learning environment Theme 3: Tool for ESE support Theme 4: Implementation challenges
4. What are teachers' perceptions of challenges and successes when implementing a digital token economy for students with exceptionalities in an inclusive classroom?	Theme 1: Tool for student engagement Theme 2: Tool to promote successful learning environment Theme 3: Tool for ESE support Theme 4: Implementation challenges

Limitations of the Study

This study aimed to investigate teacher perceptions of the implementation of a digital token economy for students in inclusive classrooms. The first limitation of this study is that it was conducted at an online school located in Florida. The participants of the study work with students online but have had experience with students in person at brick-and-mortar settings. This impacted generalizability of the findings due to the limitation of reviewing only one learning institute teacher perceptions. The second

limitation are the boundaries related to time constraints and availability of participants. This availability may have impacted the findings or generalizability of the findings due to time constraints.

Recommendations

Implications of this study suggest that teacher perceptions of the implementation of a digital token economy in inclusive classrooms have commonalities that are interdependent in the success and challenges that teachers face using the system. The study is relevant to the understanding of teachers' use of token economy as a tool for learning. The significance is related to availability of technology for teachers to use to support student learning. While the study has limitations, it nevertheless provides insightful commonalities related to implementation by teachers. This new insight provides opportunities to expand and explore perceptions of other members of the learning community. Other studies can also explore the use of digital token economy systems in other learning locations.

These recommendations are based on limitations and reviewed literature as well as the strengths of the research. The study has identified the perceptions of teachers benefits and challenges of implementing a digital token economy system in inclusive classrooms. In view of these findings, students are the focus in digital token economy systems implemented in schools. I recommend future investigations into student perceptions of the implementation of a digital token economy in inclusive classroom. Student perceptions would provide a unique viewpoint of how they experience the implementation of digital token economy.

I also would recommend other perceptions of other learning community members. Parent perceptions of the implementation of a digital token economy would provide another unique viewpoint on effects digital token economy system has on students outside the perception of teachers. Principal perceptions of the implantation of digital token economy would be insightful on how the digital token economy system influences a school. A single subject research design on digital token exchange in an inclusive classroom to analyze the effectiveness as a behavior intervention strategy would also be insightful.

Conclusion

Digital token economy system is an influential tool to engage students, influence the learning environment, and use for ESE support. Successful implementation of this academic tool has the potential to help teachers with classroom management, motivating students, and provide student opportunities for academic achievement. Implementation comes with challenges such as initial implementation and providing desirable incentives for students. Digital token economy is a readily available tool for teachers to implement who have access to digital tools in the classroom. Digital token economy should not be mistaken for a solution to all behavior management and control of learning environments. Although digital token economy should be recognized as an impactful tool that provides teachers various opportunities to support student learning. As time progresses continued dependency on digital technology will increase in the classroom.

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Appendix A

Interview Protocol

Interview Protocol

1. How long have you taught students with exceptionalities in inclusive classrooms?

2. How did you feel about using the digital token economy in your middle school inclusive class?

3. How do you use the digital token economy for motivation in your class?

4. Tell a scenario when a digital token economy was successful for students with exceptionalities in middle school inclusive class.

5. Tell a scenario when a digital token economy was not successful for students with exceptionalities in middle school inclusive class.

6. How and what ways is the digital token economy effective in your classroom management for students with exceptionalities in a middle school inclusive class?

7. How and what ways is the digital token economy effective in academic achievement for students with exceptionalities in a middle school inclusive class?

8. How and what ways did you utilize the digital token economy to support academic achievement for students with exceptionalities in an inclusive middle school class?

9. What challenges do you encounter when using a digital token economy for students with exceptionalities in an inclusive middle school class?

10. What is your perception of digital token economy as a tool in regard to classroom management for students with exceptionalities in an inclusive middle school class?

11. Is there anything else you would like to share?

Appendix B

Permission From Research Site

Permission From Research Site

VOLUSIA COUNTY SCHOOLS

October 28, 2022

Richard Thomas Richardson II
1168 Twin Rivers Blvd.
Oviedo, FL 32766

This letter serves as approval to conduct your research, Teacher Perceptions of the Implementation of a Digital Token Economy in Inclusive Classrooms. The study is part of a doctoral dissertation at the Nova Southeastern University under the advisement of Dr. James Miller. The purpose of this qualitative study is to examine middle school teachers' perceptions of digital token economy as a tool to support classroom management, student motivation, and academic achievement for students with exceptionalities in inclusive classrooms in Florida.

Per information in your request, please note and adhere to the following:

- All procedures set forth in the approved research request must be followed as approved by Volusia County Schools.
- Any variations to the approved protocol must be cleared through the Department of Research, Evaluation and Accountability.
- The study includes one school and up to twelve teachers: Volusia Online Learning and twelve (12) Volusia Online Learning teachers
- Participation in this study is strictly voluntary on the part of the district, school administrators, and staff. This study will cause no disruption to the educational process.
- Confidentiality of the district, school, administrators, teachers, staff, students, and parents will be maintained at all times.
- All Florida statutes, district policies and district procedures must be followed at all times. In particular, all requirements of the Jessica Lunsford Act must be met when visiting school campuses.
- A copy of the results must be provided to the Department of Research, Evaluation and Accountability, 200 North Clara Avenue, DeLand, Florida 32721-2118 or arteron@volusia.k12.fl.us upon completion.

Should you have any questions, please do not hesitate to contact the Department of Research, Evaluation and Accountability at 386-734-7190 x20677. We wish you much success with this study.

Educationally,

Angel R. Teron, Ed.D.
Coordinator of Research, Evaluation and Accountability

C: Dr. Carmen J. Balgobin, Superintendent of Schools; Rachel B. Hazel, Deputy Superintendent of Schools; Patricia Corr, Assistant Superintendent of Schools; Dr. Anthony A. Serianni, Principal Volusia Online Learning

Appendix C

Email for Recruitment

Email for Recruitment

Hello Potential Participants,

My name is Rich Richardson and I am a researcher and doctoral student from the Abraham S. Fischler College of Education and School of Criminal Justice at Nova South Eastern University. I'm conducting a qualitative study to examine middle school teachers' perceptions of digital token economy as a tool to support classroom management, student motivation, and academic achievement for students with exceptionalities in inclusive classrooms in Florida.

The purpose of this email is to connect with potential participants for this study. I'm in search of individual participants that meet the following inclusion criteria to be in the study:

- The participant must be a teacher with at least 3 years of education experience.
- The participant must have experience teaching students with exceptionalities in an inclusive classroom.
- The participant must have experience implementing a digital token economy.
- The participant must be available and willingness to participate in an interview process that will be recorded and transcribed. Participants will remain anonymous when data is published in the study.

Based on you meeting the inclusion criteria and agreed involvement in the study, you will part of a 45-minute recorded interview on Microsoft Teams.

If you choose to be a part of this study, please be aware that you will be free to withdraw from the study at any time. The research study will not reveal any personal information of any participants. In this researcher, there are no foreseeable risks to you. If you are interested in supporting my study, feel free to contact me by email at rr1514@mynsu.nova.edu.

Thank you,

Rich Richardson

Appendix D

Interview Consent Form

Interview Consent Form

General Informed Consent Form
NSU Consent to be in a Research Study Entitled
Teacher Perceptions of the Implementation of a Digital Token Economy in Inclusive Classrooms

Who is doing this research study?

College: Abraham S. Fischler College of Education & School of Criminal Justice

Principal Investigator: Richard Thomas Richardson II, Master of Science in Exceptional Student Education

What is this study about?

This is a research study, designed to test and create new ideas that other people can use. The purpose of this research study is to understand perceptions of teachers that use digital token economy. The use of token economy has been in education for many years. Increase use of technology in education has made many token economies go digital. This combination of digital token economy creates an intervention tool for inclusive classrooms. This study is to better understand the use of digital token economy for inclusive classrooms by expert teachers.

Why are you asking me to be in this research study?

You are being asked to be in this research study because of your experience with implementing digital interventions for students in inclusive classrooms. Online teachers are also required to have experience brick-and-mortar settings which your experience provides a unique perspective.

This study will include about 10 people.

What will I be doing if I agree to be in this research study?

While you are taking part in this research study, there will be one interview lasting up to 45 minutes.

Research Study Procedures - as a participant, this is what you will be doing: First you will respond to the recruitment email showing interest in Microsoft Outlook. Second you will read, sign, and submit this form back only to me through the recruitment email. I will then contact you back to set up an interview time on Microsoft Teams. At the time of the interview, you will only need your microphone to respond to the questions on Microsoft Teams. After the interview is complete you will be finished with participation of the study.

Could I be removed from the study early by the research team? There are several reasons why the researchers may need to remove you from the study early. Some reasons are: If you do not show up to the online interview on Microsoft Teams or leave the interview without answering all the interview questions.

Are there possible risks and discomforts to me?

This research study involves minimal risk to you. To the best of our knowledge, the things you will be doing have no more risk of harm than you would have in everyday life. All participants will remain anonymous during the study. There is a potential privacy risk that could show your participation in the study.

What happens if I do not want to be in this research study?

You have the right to leave this research study at any time or refuse to be in it. If you decide to leave or you do not want to be in the study anymore, you will not get any penalty or lose any services you have a right to get. If you choose to stop being in the study before it is over, any information about you that was collected **before** the date you leave the study will be kept in the research records for 36 months from the end of the study and may be used as a part of the research.

What if there is new information learned during the study that may affect my decision to remain in the study?
If significant new information relating to the study becomes available, which may relate to whether you want to remain in this study, this information will be given to you by the investigators. You may be asked to sign a new Informed Consent Form, if the information is given to you after you have joined the study.

Are there any benefits for taking part in this research study?

There are no direct benefits from being in this research study. We hope the information learned from this study will provide insight to other educators on the use of digital token economy for inclusive classrooms.

Will I be paid or be given compensation for being in the study?

You will not be given any payments or compensation for being in this research study.

Will it cost me anything?

There are no costs to you for being in this research study.

Ask the researcher if you have any questions about what it will cost you to take part in this research study (for example bills, fees, or other costs related to the research).

How will you keep my information private?

Information we learn about you in this research study will be handled in a confidential manner, within the limits of the law and will be limited to people who have a need to review this information. Keeping interview results on a password protect PC. This data will be available to the researcher, the Institutional Review Board and other representatives of this institution, and any regulatory and granting agencies (if applicable). If we publish the results of the study in a scientific journal or book, we will not identify you. All confidential data will be kept securely on a password protect PC. All data will be kept for 36 months from the end of the and destroyed after that time by through deletion.

Will there be any Audio or Video Recording?
This research study involves audio and/or video recording. This recording will be available to the researcher, the Institutional Review Board and other representatives of this institution, and any of the people who gave the researcher money to do the study (if applicable). The recording will be kept, stored, and destroyed as stated in the section above. Because what is in the recording could be used to find out that it is you, it is not possible to be sure that the recording will always be kept confidential. The researcher will try to keep anyone not working on the research from listening to or viewing the recording.

Whom can I contact if I have questions, concerns, comments, or complaints?

If you have questions now, feel free to ask us. If you have more questions about the research, your research rights, or have a research-related injury, please contact:

Primary contact:
Richard Richardson

If primary is not available, contact:
Dr. James Miller

Research Participants Rights
For questions/concerns regarding your research rights, please contact:

Institutional Review Board
Nova Southeastern University
(954) 262-5369 / Toll Free: 1-866-499-0790
IRB@nova.edu

You may also visit the NSU IRB website at www.nova.edu/irb/information-for-research-participants for further information regarding your rights as a research participant.

Research Consent & Authorization Signature Section

Voluntary Participation - You are not required to participate in this study. In the event you do participate, you may leave this research study at any time. If you leave this research study before it is completed, there will be no penalty to you, and you will not lose any benefits to which you are entitled.

If you agree to participate in this research study, sign this section. You will be given a signed copy of this form to keep. You do not waive any of your legal rights by signing this form.

SIGN THIS FORM ONLY IF THE STATEMENTS LISTED BELOW ARE TRUE:

- You have read the above information.
- Your questions have been answered to your satisfaction about the research

Adult Signature Section

I have voluntarily decided to take part in this research study.

Printed Name of Participant	Signature of Participant	Date
Printed Name of Person Obtaining Consent and Authorization	Signature of Person Obtaining Consent & Authorization	Date

Appendix E

Data-Analysis Codes

Data-Analysis Codes

Category (listed alphabetically)	No. participants contributing	No. transcription excerpts included
Assign student roles	2	2
Competition between students	6	8
Decrease participation with removal of digital tokens	1	1
Difficulty implementing the digital token economy system	4	7
Difficulty with students' willingness to participate	5	6
Digital token distribution low for increased value	4	4
Digital token economy used to help meet IEP goals	2	2
Environment being a factor for effectiveness	3	3
ESE students additional support	6	10
Helps teachers with data tracking	3	3
Improvement to student and teacher relationship	7	9
Increases academic achievement for students	10	10
Gamification of coursework	7	7
Nontangible rewards	5	6
Opportunities to reward students	7	7
Promotes Inclusion	7	7
Promotes opportunities for struggling students	5	6
Promotes persistence in students	5	9
Promotes student engagement	3	3
Promotes students to manage their behavior	10	10
Problems with limited rewards	4	6
Reduce behavior disruptions	2	5
Student compliance	3	5
Students desire physical reward	4	4
Students enjoy participation in the digital token economy	4	4
Students feel encouraged	7	7
Students feel they have choices	3	3
Student recognition from peers	3	6
Students willing to take academic risks	3	3
Students frustrated with the digital token economy	1	1
Teachers feel successful in classroom management	6	6
Teachers found implementation enjoyable	3	3
Teachers used digital tokens with alternative assessments	2	3
Time constraints	4	5
	4	5