Teacher's Perception on the Use of Gamification for Students with Learning Disabilities

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Abstract: Problems with the negative behaviours of special needs students cause special education teachers to experience stress in the classroom. The purpose of this study is to explore the perceptions of special education teachers on the use of ClassDojo application to reduce negative behaviours among students with special needs in learning. This study is based on the Behaviourist theory whereby the relationship between stimulus and response influences the individual learning process. This is a qualitative study that is used in structured interviews to obtain data from respondents. Interview questions were adapted and modified from Burger's (2015) study. This research question was reviewed and validated by 2 expert lecturers and 2 expert teachers. A total of 2 teachers, and 5 special needs children in Kluang district, Johor were selected as the study sample by means of sampling technique. The findings show that there is a significant change in learning behaviour during the ClassDojo application. The special education teachers feel that the ClassDojo application is very helpful in controlling the classroom while reducing the negative behaviours of the pupils during teaching and learning. Special education teachers also feel that the ClassDojo application creates collaboration and a positive relationship between teachers and parents to address learning behaviour issues. This study is a reference to future researchers in exploring other gamification applications for learning with special needs children.

Keywords: gamification, game-based learning, students with learning disabilities

INTRODUCTION

Students with learning disabilities and negative behaviours are something that affects one another. Kirk (1963)state that 15% to 40% of students with special learning disabilities behave negatively at both home and the classroom. The study also showed that the frequency of negative behaviour was more prevalent among male learning disability students compared to female learning disability students. Behaviour is defined as all a person's actions or conversation manners (Miltenberger, 2011) and in general, behaviour is an act or action that can be observed, measured and evaluated. Disruptive, distractive and dependent behaviours are the category of negative behaviours.

Behavioural problems have a direct impact on educational, social and emotional development among children with special needs (Aznan et al., 2010). In addition, the behavioural problems of children with special needs cause their daily life activities to be affected (Mahmood, 1990). This situation is causing them to be less accepted in the community and will result in less confidence and motivation of the students. According to Thangarajathi & Joel (2010), a negative behaviour will persist and be difficult to stop or mitigate if the negative behaviour is ignored. Thus, children with

learning disabilities need to be managed in a specific way in order to achieve the desired behaviour (Kazdin, 2001).

Therefore, managing the behaviour of students with learning disabilities is a very difficult responsibility and causes special education teachers to deal with a great deal of stress and anxiety (Evers et al., 2004). This is because the special education teacher's knowledge in managing behaviours of children with learning disabilities is still at a moderate level. This has been demonstrated in Aziz and Yasin(2018) study that the special education teachers' knowledge and skills in managing behaviour of students with learning disability was at a moderate level of 72.3%.

In addition, the findings of Johansen, Little & Akin-Little (2011) show that 88% of New Zealand teachers have minimal training in the management of special needs students' behaviour. Fong (2003), argues that the techniques used to manage behaviour of students with learning disabilities are still in question. According to Rashid, Boon, and Wong (2010), teachers should always think of behaviour modification techniques that are appropriate for students with special learning needs but special education teachers face time constraints, often burdened with the task of overwork and other assignments (Werts, Carpenter, and Fewell, 2014).
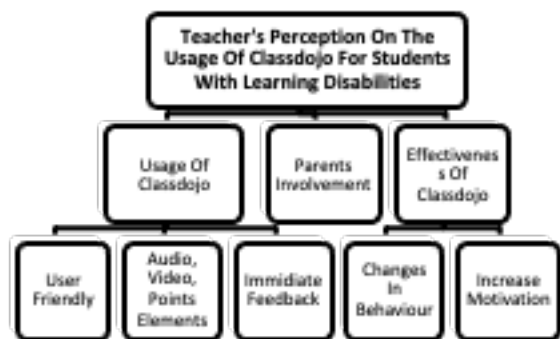
Figure 1. Teacher's Perception of Classdojo

These factors result in special education teachers choosing less effective behaviour management techniques and therefore cannot see the significant impact on the change in children's behaviour.

Most teachers say that it is difficult for students to learn if there is persistent behaviour disorder (Rahman, Jumani, Basit, Chishti, & Ajmal, 2010). Therefore, teachers should have the awareness, skills and willingness to receive new knowledge to manage the negative behaviours of children with special needs. Rapid advances in Information and Communication Technology (ICT) have led to the emergence of new and sophisticated approaches to helping teachers effectively manage learning behaviours while not inconveniencing teachers.

Gamification is an approach that incorporates game techniques in the teaching and learning process that helps teachers promote specific behaviours and create an active learning environment (Hanus & Fox, 2015). One type of gamification application that enhances positive behaviour and reduces or alters negative behaviour is the ClassDojo application. ClassDojo is one of the most popular and highly successful classroom and behaviour management applications in the world, involving more than 3 million teachers and 35 million children in 180 countries, predominantly in primary schools by 2016 (https://www.classdojo.com /).

ClassDojo is a free mobile application that allows teachers to mark points for their desired behaviours from children in the learning process. ClassDojo is also a computer-based program that monitors student behaviour, and allows teachers to have direct and immediate communication with parents about children's behaviour in the classroom (Lin, 2014). The findings of the study (Azreena et al., 2018; Burger 2015; Martinez, 2016; Saeger, 2017; Chiarelli, Szabo, & Williams, 2015) show that the ClassDojo application is capable of altering and decreasing negative behaviours and shaping positive behaviours in students with special needs.

However, most studies conducted using ClassDojo focus only on secondary school students and university students. There are a few studies that focus on typical students and only a few studies are conducted to see the effectiveness of ClassDojo on children with special needs. Studies on teachers' perceptions of the use of ClassDojo applications for children with special needs involving various learning problems have received little attention. Therefore, it is advisable to conduct a study to examine teachers' perceptions of using ClassDojo applications to reduce negative behaviours among children with learning disabilities so that the applicability of the application can be clearly seen.

METHOD

This study is a qualitative study that used structured interviews as the main instrument to gather information from the study sample. A qualitative approach enables the researcher to obtain accurate information and understanding of the phenomenon without any manipulation of the actual situation (Kemmis and McTaggart, 2000). Therefore, the researchers chose this approach to understand the true perception of special education teachers in using ClassDojo applications to reduce the negative behaviour of children with learning disabilities in primary schools.

Researcher uses purposive sampling as sampling technique because it is a technique commonly used in qualitative studies (Marican, 2005). 2 special education teachers, and 5 children with learning disabilities were selected as study samples. The sample of students was selected based on the average level of functioning between 9 and 13 years old who could follow the instructions of the teacher. The study involved 3 male students and 2 female students in the ADHD category, Albino, intellectual disability, slow learner and dyslexia. The researcher has selected 2 samples of special education teachers with more than 3 years teaching experience.

In order to collect data on teacher's perception, the researcher has used structured interview items for interview items adapted from the Burger's (2015) study. The interview protocol was developed based on Gay and Airasian (2000). All interviews were recorded and transcribed and processed using Nvivo 7 software. All data were grouped according to the themes of the study design constructs.

FINDINGS & DISCUSSIONS

Findings

The following are the findings obtained from data collected through structured interview techniques for two special education teachers, figure 1, table 1. The researcher divides the findings into 3 main themes: the use of the ClassDojo application, the effectiveness of the Class Dojo application and the parental involvement.

Table 1. Summary of findings based on identified themes

Theme	Sub theme	Description
Usage of ClassDojo	User friendly	Teachers believe that this application is easy to use, easy to understand, and not burdensome for teachers. Teachers state that their use does not require a lot of sophisticated technology tools. It only requires smartphones and laptops
	Audio, visual and points elements	The sound elements contained in this application are of great interest to students. Red colour for point deduction (negative behaviour), and green for points earning (positive behaviour). Makes it easy for students to see their points well. Points awarding lessens negative behaviours
	Immediate feedback	Immediate feedback on student behaviour by point system.
Parental involvement	-	Improves the relationship between parents and teachers. Parents receive immediate information about their children's behaviour.
Effectiveness	Changes in behaviour	Negative behaviours of special needs students have decreased significantly. Promote positive behaviours among students.
	Increase motivation	Students are motivated and compete for points. Motivated to follow the teacher's instructions.

Discussion

The study was aimed at exploring and analysing the genuine perceptions of special education teachers on the use of ClassDojo applications for special needs students. The study was conducted to help special education teachers to gain new knowledge about ClassDojo which is a widely used behaviour management application for free around the globe. This study also guides special education teachers in

adopting a new approach favoured by special needs students in not only managing their behaviours but also in managing classrooms effectively through the integration of ICT.

Use of ClassDojo application

Teachers should feel comfortable using technology in the classroom. If teachers are not comfortable with the technology used, the technology will not affect the students in neither positive nor negative manner (Sugar & van Tryon, 2014; Thielst, 2007). Through the interviews, both A and B teachers found the ClassDojo application to be simple, stress-free to use and easy to understand. They also feel comfortable using this application as it does not burden them. This finding is supported by a study conducted by Burger (2015) which states that teachers are comfortable using the ClassDojo application because it is easy to use and assists teacher's mobility as it can be used anywhere and anytime. Teacher B said that he would use a smartphone if he could not use a laptop because he had to bring a variety of materials to the classroom. Thus Manolev, Sullivan, & Slee. (2019) state that the ClassDojo application is user-friendly as it is easy to access and free.

According to Sekar (2017), an amount of over RM 6 billion was spent by the Ministry of Education (MOE) to complement the ICT infrastructure in schools across the country but there was still a shortage of ICT facilities such as computers, tablets and so on. Mohd Hanafi et al., stated that Among issues raised by the respondents are lack of infrastructure, particularly in relation to basic amenities that include chairs,desks, fans, teaching aids, projector equipment, computers and others. The use of gameplay such as Kahoot, and Quizzes requires more than one technological tool such as computer, laptop or tablet as it is handled individually, in pairs or groups. The lack of adequate technological tools has led to special education teachers integrating less or nearly no gamification approaches in the classroom. But teachers A and B point out that using ClassDojo applications does not require a lot of advanced and sophisticated technological equipment. They only use technology tools such as laptops, smartphones, projectors and speakers.

In addition, the interviews of teachers in the study showed that the audio, visual and points awarding elements made students develop more interest in ClassDojo applications. Teacher A stated that the students were very sensitive to the sounds enclosed in this application. They can identify and differentiate the sound when losing a score or adding a score. Teacher B, on the other hand, states that students are sensitive to colours as they know that red is used for negative behaviour and green for positive behaviour.

Studies conducted by Chiarelli, Szabo, & Williams, (2015) also show similar findings where the visual and audio elements and marks (points) in the ClassDojo application enable students to be aware of their behaviour. For example, if a student hears a "ding", then they are behaving in a positive manner and if they hear a "buzz" they are behaving negatively. The findings of Plump, C. M., & LaRosa, J. (2017) also suggest that music, colour and fun provided by the Kahoot app can encourage students to be more focused while making a positive impact in the classroom. ClassDojo carries the similar features to this.

Moreover, immediate feedback through the provision of points for each behaviour enables the students to identify the type of behaviour shown. According to teacher A and B, pupils reduce or stop negative behaviours once they hear the buzz sound. A study conducted by Saeger, (2017) shows that frequency of positive behaviours and reductions in negative behaviours occur when students receive consistent feedback on their behaviour. This is also supported by Manolev, Sullivan, & Slee. (2019) and Walberg & Twyman, (2013) where teachers' immediate feedback on student behaviour enhances a desired behaviour and reduces target behaviour to change or decrease.

Parent Involvement

Parental involvement in education shows a positive implication to students' academic achievement, motivation, behaviour, social competence and self-efficacy (El Nokali, Bachman, & Votruba-Drzal, 2010; McWayne, Hampton, Fantuzzo, Cohen, & Sekino , 2004). But the attitudes of parents who are too selfish to focus on their children's behaviour (Ilias, Ponnusamy, & Normah, 2008) and not spending time with children are also factors contributing to negative behaviour among children with special needs.

The findings of this study indicate that the use of the ClassDojo application enhances parental involvement in students with learning disabilities' learning. Teacher A and B state that parents can monitor the behaviour of their children anywhere and anytime as well as even when they are working overseas such as Singapore and Thailand. This is supported by the findings of Masruri, M., Murtiyasa, B., Kom, M., & Muhibbin, A. (2017) who stated that through the ClassDojo application, parents can easily monitor and observe their children's behaviour even when the parents of the students live far away. The findings of this study also suggest that the use of this application has made it convenient for parents as they do not need to meet with their teachers face-to-face to gather insights into their children's behaviour and performance.

The use of the ClassDojo application further strengthens the relationship between parents and teachers. Teacher B says parents always ask about their children's behaviour through this application. Teacher B also said that communication between parents and teachers has improved ever since using the application. Peterson (2013) and Suryanto (2015), argue that this application serves as an effective link between teachers and parents where all students' behaviour can be seen clearly and easily. This application allows teachers to provide information about students to their parents.

Teacher B says that ClassDojo lets parents who are uneducated know about their children's behaviour as they can see through the analysis of behaviours found in the form of pie charts despite the need for words. This is because the ClassDojo application is not only user-friendly for teachers but also for parents. In addition, the collaboration and cooperation between parents and teachers will have a positive impact on children with learning disabilities at both the school and at home (Sheridan et al., 2007). Teachers A and B state that the ClassDojo application enhances the collaboration between teachers and parents. This collaboration and partnership helps teachers and parents solve problems that students face most at home and at school (Sheridan & Kratochwill, 2007). This opinion is also in line with the opinions of El Nokali et al., (2010) and McNeal (2012) where negative behaviours among elementary school children decreased with parental involvement in their children's education.

The Effectiveness of the Classdojo Application

According to Mok (2011), positive reinforcement is a stimulus that can increase the probability of a repetition of behaviour while negative reinforcement is a stimulus that are transferred or eliminated with the aim of enhancing positive behaviour so that positive behaviour can continue. Through interviews with both teachers A and B, it was found that having a point based scale allowed for more targeted and exclusive modification of behaviour. According to the Behaviourism theory, behaviour is reinforced through positive reinforcement (McEwan, Gathercoal & Nimmo 1999).

Teachers A and B state that teacher assignments are made easier using the ClassDojo application. Teachers also state that the ClassDojo application can serve as a report book where teachers can view student behaviour at any time. This finding is supported by K. A. Razhiyah's (2005) opinion that teachers should record behaviour problems that arise in a daily report book for future attention and reference. The interview results show that teachers can record and view student behaviour on a daily, weekly, and monthly basis. Indirectly, this analysis helps special education teachers design appropriate interventions to change the behaviours of learning disability students while

mitigating teachers' task of recording and analyzing daily records of behaviour.

Changes in negative behaviour can be clearly seen through the use of the ClassDojo application. The findings of this study prove that the app successfully promotes positive behaviours and reduces negative behaviours among students with special needs. This view is supported by the study of Saeger, (2017) and Burger (2015) where ClassDojo applications can improve positive and negative behaviours. One of the features of gamification is that pupil's behaviour can encourage a pupil's target behaviour. Awarding scores together with sounds and colours greatly influences pupils' behaviour.

In addition, according to teachers A and B, this application enhances students' motivation both intrinsically and extrinsically. They also think that students like to compete with their peers for points. The gamification approach enhances the motivation of students to continue learning while completing assigned tasks. Findings Gooch et al. (2016) has shown that the use of 'ClassDojo' gamification in teaching has increased motivation among dyslexic students in primary school. High motivation leads to the achievement and accomplishment of special needs students academically. Healthy competition among students enhances their motivation to continue learning and focus. In addition, Brigham 2015; Caton & Greenhill, 2014; Cheong, Filippou, & Cheong, 2014; Leaning, 2015 also supports the findings of this study where gamification enhances motivation and promotes active learning.

CONCLUSSION

The findings of recent studies prove that gamification is a new trend in today's digital educational system that can be integrated into the learning of special needs students. The findings of previous studies discuss gamification approaches that have a positive impact on the developmental, social and emotional growth of special needs pupils as well as enhancing the academic achievement of special needs students. In line with this, the study was conducted to explore the real perceptions of special education teachers regarding the use of ClassDojo application for students with learning disabilities in the classroom.

The findings show that special education teachers have an overall positive perception towards using the ClassDojo application as it enhances students' motivation, promotes active learning, easy to use, user friendly and changes student behaviour. The findings of this study also indicate that the use of gamification can ease the task load in recording the behaviour of special needs students. This study also proves that

parental involvement is clearly visible through the use of this application. However, this study is subject to several aspects; 1) This study is restricted to primary schools running the Integrated Special Education Program (PPKI) in the Kluang district. The children involved come from various socioeconomic and gender standards. 2) The sample of this study involved only the teachers, and the students following the selected Integrated Special Education Program using purposive sampling method. Samples were also selected based on age limits of 9 to 13 years. 4) This study only analyzes teachers' views on using ClassDojo applications in the classroom. This study is conducted during school hours only 5 days a week from Sunday to Thursday from 7.30 am to 1.00 pm.

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