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Research Paper

Emogamification to enhance emotional competency among primary school children

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ABSTRACT

The objective of this study was to test the Emogamification apps among the primary school children to reduce their emotional and behavioural risk of school dropout. The research method was Quasi-experimental design, with 60 participants age range 7 to 12 years, boys (N=29), girls (N=31) from primary level of education of school in Perak, were recruited for the study. Emotional and Behavioural Risk Scale of School dropout among Primary School Children was administered for pre and post assessment. Students were randomly assigned in control group (30) and therapy group to play Emogamification (30). The Emotional Behavioural risk scale of school dropout was administered to assess the pre and post results, among therapy and control group. Results reveals that there was significant mean difference among the score of pre among therapy group of Emogamification. There was significant difference ($p < 0.05$) within the groups. The results show statistical differences for the control group and therapy group of Emogamification in comparison to their pre and post results analysis. Emogamification app is an effective tool to enhance emotional competency and behavioural management among primary school children. The research provided evidence that the application has usability and efficacy to be administered in school and counselling settings.

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1. INTRODUCTION

Technology is always growing, making it a platform for transforming human existence and behaviour. Mobile phones are becoming essential. Mobile phones have the potential to improve health and well-being due to their growing popularity and incorporation into our lives [1].

Children use mobile phones too. The huge number of apps accessible can help people change their social behaviour, improve education, and improve health. Several apps help adults and children detect or develop emotions. Creating learning disability-specific apps is an excellent way to raise awareness. Future technologies can aid learning disabled persons and their communities in education, communication, and basic necessities [2].

In comparison to a population of roughly 33 million, the number of children who stop attending primary school has demonstrated a substantial value [3]. The majority of elementary school students who do not complete their education belong to the B40 category, as stated by the Minister of Education. This is most likely the result of the parents' lack of interest in their children's education, as seen by the fact that they permit their children to leave school before completing their required coursework. The Education Development Plan for 2013–2025 includes provisions to address this concern. Some of the children that belong to the B40 group have a lower socioeconomic status and were brought up in worse conditions. Because of this, some children are more likely to choose not to continue their education and end up falling prey to the harmful influences of society. Students who are slow learners sometimes drop out because they give up trying to catch up. They have a negative outlook on the educational system and believe they will fail. Our educational system is solid and effective [4].

We focused on designing an application that employs cutting-edge technology to improve children's essential learning skills due to the potential benefits of a mobile app for children with unique learning issues. Emogamification, a smart phone application built by researchers, will help primary school pupils, especially slow learners; increase their emotional intelligence (EQ). The game's actions followed Goleman's Theory of Emotional Intelligence [5], [6]. In the emogamification game, each domain of emotional intelligence; self-awareness, self-management, social awareness, social management, and motivation, is combined into sixteen modules. This study has the potential to have a substantial impact on the prevention of emotional imbalance, which can lead to slow learners choosing to remain enrolled in school rather than dropping out of school altogether.

In early life, social and emotional intelligence development is crucial. Theoretically and empirically, it has been shown that boosting emotional in early life is important for assuring the success of forming and sustaining a positive self-image. Children with higher EQ have superior attention spans, a greater capacity for compassionate behaviour, better academic performance, and more pleasant peer connections and interactions [7]. Game based learning is often thought of as an educational technique that encourages student engagement and motivation [8]. In recent years, an increase interest in using gamification to study emotions, engagement and motivation amongst the research community [9]. Gamification has been described as the notion of incorporating game elements into products or services in order to attract more users and increase the user's overall experience, engagement and loyalty. There are various gamification design components that have been linked to specific emotional effects [10].

2. METHODOLOGY

This research designed as development-based research which has four phases. The needs analysis study of phase one involved a quantitative and qualitative study. Total of N=10 primary school teachers and using purposive sampling. The results thematic analysis revealed the themes of four components of emotional issues among children including, self-awareness, self-management, social awareness and social management. Based on the finding researcher developed the instrument of emotional behavioral risk scale of school dropout among primary school children, validated by 7 experts (CVR=80%) and module activities of Emogamification app, and module was validated by 7 experts from psychology, special education, early childhood and teachers of primary school (CVR=86%). Overall reliability of the Emotional Behavioral Risk

Scale of primary school children was scored using a Cronbach's Alpha value of of .97 for all the items of scale [11].

Module was tested as quasi experimental design on 60 participants from the primary school district of Perak, Malaysia for its effectiveness to reduce Emotional and behavioral risk of the school dropout among primary school children. 30 students were assigned to control group and 30 students were assigned to therapy group of Emogamification randomly. The recruited children were from same school and class with the recommendation of school teacher. The boys were 29 and girls 31 ages of 7 to 12 years old participated. The permission from the Ministry of Education and the school administration, ethical approval from RMIC and permission from participants parents were followed to carry out the research. Students of both groups were administered with the Emotional and behavioral Risk Scale of Primary School dropout (EBRS) as pre and post assessment to study the effectiveness of the Emogamification module app. The students in the therapy group of Emogamification were allocated one hour to play the games as part of their therapy for 5 days per week, for the control group participants, the post assessment was conducted without any given intervention. The results of pre and post assessment scale score were statistically analyzed for further investigation.

3. RESULTS AND DISCUSSION

Data obtained were analysed using descriptive and inferential statistics. According to, descriptive statistics are used solely to describe the characteristics of a collection of scores and it includes the mean and standard deviation. The results show the difference of control group participants and therapy group of Emogamification among the primary school children. 60 students including boys (N=29) and girls (N=31) with age difference 7-12 with (M=9.52), all the children's parents were working with SPM and doctorate level of professional history, the children had average of 3 -4 sibling, from the middle-class economic status including race of Malays, Indians and Chinese. The participants were all from the same school and same level of education form 2.

Table 1. Comparison of Pre and Post Assessment of Control Group and Therapy Group

EBRS Score	Group	N	Mean	Standard Deviation
Pre assessment Self-awareness, self-management and motivation	Control	30	41.9	13.296
	Therapy	30	46.4	12.286
Pre assessment social awareness and social management	Control	30	30.7	13.469
	Therapy	30	37.7	10.292
Post assessment Self-awareness, self-management and motivation	Control	30	41.3	12.995
	Therapy	30	20.7	7.991
Post assessment social awareness and social management	Control	30	22.3	10.357
	Therapy	30	15.4	5.257

The mean score of pre assessment on self-awareness, self-management and motivation M=41.90 with control group and M=46.47 with therapy group, the pre assessment of social awareness and social management with control group M=30.77 and therapy group M=37.73, the post assessment of self-awareness, self-management and motivation M=41.37 with control group and M=20.73 with therapy group, the post assessment of social awareness and social management with control group M=22.33 and therapy group M=15.43. Show the statistical difference among the pre and post assessment within the control group in therapy group of Emogamification ($p<0.01$).

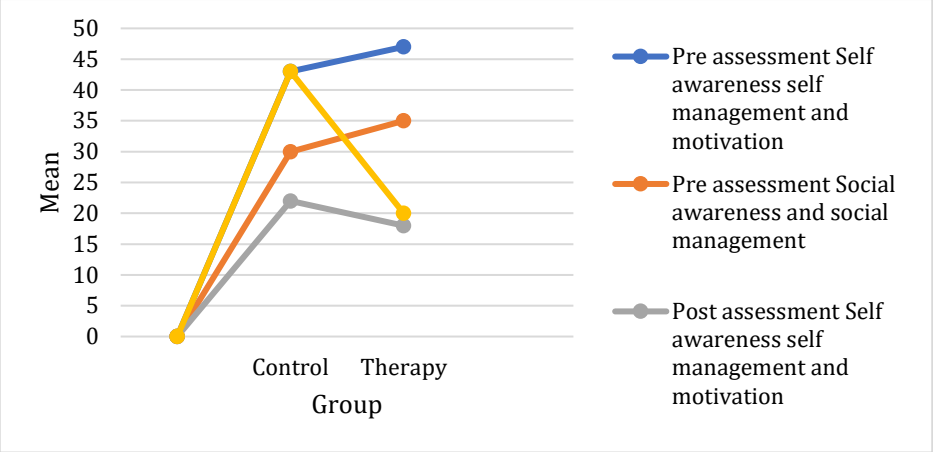


Figure 1. Difference of Mean of Pre and Post Assessment between Control Group and Therapy

Based on the result from the data analysis, it is determined that the emogamification module can be used a framework to produce an emotional competency module among children with learning difficulties between the ages of 7 to 12 years old. Emotional understanding is the capacity to predict the emotion a person would feel as a result of a certain situation. In order for individuals to have the capacity to comprehend emotions, they need to have had their own experiences to learn what feelings are generated by a specific event. Understanding the consequences is an essential component of this process. Understanding emotions requires figuring out where they come from in order for children to be able to comprehend the emotions of others, they must first learn to identify and name their own feelings [12]. It is possible to discern the beginnings of emotional language in a child as young as two years old, and this comprehension continues to grow throughout the ages. When it comes to complicated emotion like guilt and appreciation, children have a hard time comprehending them [13]. Children are capable of distinguishing between different emotions. The children discover that they may feel a variety of emotions at the same time, both positive and negative, as young as eight years old. They also understand that emotional responses do not always represent what a person is genuinely experiencing, and that emotions should sometimes be concealed.

It is necessary to offer emotional and social education to young children in order to raise them who will be successful in their lives. By introducing emotional intelligence early in different environment, either at home or in school, we may help these children achieve better outcomes not just in the present, but also in the future [14]. The findings from this research contribute in ways to increase awareness among parents, community and friends on their misconception, misunderstanding and cultural expectation regarding children with learning disability that may lead to school dropout risk which may cause them to attempt [15]. People might have a general misconception that children that with learning disability problems are only seeking-attention, however this is partially true. Some children with learning disability problems are not known until they reach their teenage years. Besides that, this research also gives the idea for whole community to not take school dropout behavior as a minor issue in today's society. Based on the current results and results from past researches, stated that school dropout behavior is a major issue to be concern of. The community should play a role in preventing this as, nowadays social conformity from society is common.

4. CONCLUSION

The early prevention strategy of dropout behavior among primary school students using emogamification well-being module had been discussed in this article thoroughly. The results added evidence that the mobile based app of Emogamification increased the students learning on emotional self-awareness, self-management, motivation, social awareness, and social management. The finding of the study is unique to help the students to reduce the risk of school dropouts by providing them meaningful and

learning based activities to enhance their emotional competency, which are stronger indicator of life skills, future education and health growth.

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Author Contributions Statement

Name of Author	C	M	So	Va	Fo	I	R	D	O	E	Vi	Su	P	Fu
Asma Perveen	✓	✓	✓	✓		✓		✓	✓	✓	✓		✓	
Wan Nurul Izza Wan Husin	✓		✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
Ahmad Nurzid Rosli		✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓
Kannamah A/P Mottan	✓	✓	✓	✓		✓	✓		✓		✓	✓	✓	✓
Aroyewun Temitope Falashade	✓		✓	✓	✓	✓	✓		✓	✓		✓	✓	✓

C : **C**onceptualization
M : **M**ethodology
So : **So**ftware
Va : **Va**lidation
Fo : **Fo**rmal analysis
I : **I**nvestigation
R : **R**esources
D : **D**ata Curation
O : Writing - **O**riginal Draft
E : Writing - Review & **E**diting
Vi : **Vi**sualization
Su : **Su**pervision
P : **P**roject administration
Fu : **Fu**nding acquisition

Conflict of Interest Statement

The authors declare that there are no conflicts of interest regarding the publication of this paper.

Informed Consent

All participants were informed about the purpose of the study, and their voluntary consent was obtained prior to data collection.

Ethical Approval

Not Applicable.

Data Availability

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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	**Kannamah A/P Mottan,** seems linked to the Faculty of Education, Language, Psychology and Music at SEGi University, Petaling Jaya Malaysia. In her Google Scholar profile, you can see research topics that lean toward special education, disability studies, special needs, and psychology, kinda all connected.
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