

**UNIVERSITI TEKNOLOGI MARA**

**THERAPEUTIC GAME DESIGN  
MODEL FOR ADOLESCENTS  
SUFFERING FROM DEPRESSION**

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**PhD**

**August 2020**

## AUTHOR'S DECLARATION

I declare that the work in this thesis was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the results of my own work, unless otherwise indicated or acknowledged as referenced work. This thesis has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulations for Post Graduate, Universiti Teknologi MARA, regulating the conduct of my study and research.


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## ABSTRACT

Therapeutic game is among the most recent growing research areas whereby its main aim is to use game play to improve the effectiveness of therapy. However, therapeutic games made available for specific mental illnesses are rather scarce. In fact, some designs of the therapeutic game fail to aid the target users. This study aim is to propose a therapeutic game design model for adolescents suffering from depression based on a number of games in various genre, psychotherapy and psychology theories, as well as game design foundations. The model developed in this study is called 'Therapeutic Game Design Model' (TGDM). A therapeutic model called Cognitive Behaviour Therapy (CBT) was embedded in the model to support therapeutic aspects. As such, four specific objectives were formulated for this study: (i) to determine the components and elements of TGDM, (ii) to conduct comparative analysis and expert consultation in constructing the TGDM, (iii) to conduct an expert review in validating TGDM (iv) to conduct a quasi-experimental study to measure the applicability of the model in enhancing player engagement. The Design Science Research Methodology was adopted in this study. The proposed model had been constructed and integrated with three main phases, which are: Therapeutic Design, Game Context, and Design Evaluation. Meanwhile, the aspects derived from CBT, which were integrated in the CBT Therapeutic Strategies, was comprised of two components, which are: Cognitive and Behaviour. On top of that, elements of engagement factors were also incorporated into the model in order to support player engagement. Thirteen experts validated the TGDM through expert review. A prototype named CBT4Depression developed by following the steps in the TGDM. With that, an instrument called Q-PE was developed to measure player experience in term of engagement among TGDM users. For that purpose, four dimensions were elicited from various relevant studies to generate Q-PE, which are: i) immersion, ii) sensory, iii) usability, and iv) challenge. 115 respondents participated in the quasi-experimental study. Pearson Correlation test, Paired Samples *t*-Test, and descriptive analyses were utilized in the analysis process. The findings from the evaluation of player experience revealed that all dimensions had been significantly correlated to the overall player engagement. The Paired Samples *t*-Test show that the use of TGDM significantly reduces the scores of Beck Depression Inventory, which is, indicates the reduction in the depression level after the use of CBT4Depression. The descriptive analysis show that the overall player engagement for CBT4Depression is high. All these results have demonstrated that the TGDM is indeed useful for designing therapeutic games, apart from providing both theoretical and practical contributions to many parties such as game designers, mental health professionals and reseachers in the related area.

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