

**UNIVERSITI TEKNOLOGI MARA**

**DEVELOPMENT AND VALIDATION  
OF A MODEL OF TECHNOLOGY-  
SUPPORTED LEARNING FOR  
SPECIAL EDUCATIONAL NEEDS  
LEARNERS IN MALAYSIAN  
INSTITUTIONS OF HIGHER  
LEARNING**

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Thesis submitted in fulfillment  
of the requirements for the degree of  
**Doctor of Philosophy**

**Faculty of Education**

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## **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 the results of my own work, unless otherwise indicated or acknowledged as referenced work. This topic has not been submitted to any 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

This study is intended to develop and validate the Model of Technology-Supported Learning for Special Educational Needs (SEN) Learners in Malaysian institutions of higher learning (IHLs). This is due to the lack of technological-research based on the SEN learners particularly in IHLs in Malaysia. Utilizing the design and development research (DDR) approach, this study comprises three phases. The first phase of the study is the needs assessments and model development. Needs assessments were conducted among the eight public as well as 66 SEN learners from eight selected Malaysian IHL through interview as well as an adapted and validated questionnaire. Content analysis on the selected Malaysian IHLs' websites was carried out for the initial foundation of the prototype for the Model. Information from needs assessments, content analysis and literature review was then used to develop an initial extensive prototype of the Model of Technology-Supported Learning for SEN Learners. The second phase of the study is the Model validation, involves a heterogeneous group of subject matter experts (SMEs). Eleven SMEs were involved in validating the Model through Delphi technique. After thorough revisions and recommendations by the SMEs, the final extensive version of the Model of Technology-Supported Learning for SEN Learners was developed which consists of six important elements that are: 1) Academic Affairs, 2) Student Affairs, 3) Library, 4) University Administration, 5) Community, Industrial Networking and Alumni, and 6) Special Department/Unit for SEN learners. The third phase of the study is the instantiation of the Model. For the purpose of instantiation, one of the elements in the Model i.e. 'e-group' was chosen to be exemplified. To instantiate the Model, two e-groups were created for SEN learners who were currently studying in Universiti Teknologi MARA (UiTM) and public. The usefulness of the technology for the SEN learners was observed. The overall findings of the needs assessments showed that SEN learners faced various challenges and barriers in IHLs and these including barriers in teaching and learning and challenges in dealing with the IHLs community. For the second phase of the study, the 11 SMEs reached a consensus on the Model in the round two of Delphi. This indicated that the Model is feasible to be implemented at the Malaysian IHLs. The findings of the third phase of the study proved that the technology supported SEN learners socially and emotionally. Through the support, SEN learners could sustain in their learning journey in IHL. It is thus recommended that the Model of Technology-Supported Learning for SEN Learners could be used as one of sources by the Malaysian IHLs authorities in their planning for the development and improvement of the existing educational system so that an inclusive environment could be established in IHLs.

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