THE
DOCTORAL
RESEARCH ABSTRACTS
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Name: MUHAMAD FAIRUS BIN KAMARUZAMAN  
Title: DEVELOPING TOUCHSCREEN NUMERACY LEARNING APPLICATION FOR CHILDREN WITH AUTISM  
Supervisor: PROF. DR. MUSTAFFA HALABI HJ. AZAHARI (MS)  
DR. HARRINNI MD NOOR (CS)

Education is fundamental to nation building, providing every child with building blocks for success, which in the end shaped the nation's economic growth and social cohesion. It is imperative the children with autism talents be continuously cultivated and not be neglected. Children with autism are conditions where children may exhibit developmental disabilities, communication obstacle, significant social, behavioural challenges and process information differently compared to their normal typical peers. Known as visual thinkers, the use of visual images as a visual support in the learning environment has been found effective for children with autism. The use of assistive learning technology such as tablets has gained state-of-the-art research interests as children with autism have an affinity with the mechanism. Nevertheless, research on assistive learning technology as intervention approach for children with autism is still at its experimental level, here in Malaysia. Research have shown it is important for children with autism to acquire fundamental skills to achieve some degree of independence. Despite large enhancements in early diagnosis and interventions, most children with autism are unlikely to live independently when they grow up. This qualitative study aims to 1) examine the current learning process for children with autism 2) determine how assistive learning technology application may influence the learning process for children with autism and 3) formulate the assistive learning technology application for children with autism. A touchscreen assistive learning numeracy application (TaLNA) was developed by using Adobe Flash Professional CS6 with Adobe AIR 19.0 integration and ActionScript 3.0. It works on a smartphone as well as a tablet device. TaLNA is an educational tool that consists of a learning module and learning activities with different learning outcomes. TaLNA focuses on children with learning disabilities in primary schools in Malaysia specifically for children with autism in Special Education Integration Program classes. The subject content was adapted and aligned with the Integrated Curriculum for Learning Disabilities issued by Ministry of Education Malaysia. In order to motivate the children with autism to concentrate and keep learning, an interactive agent was embedded inside the said apps. Thirty children with autism and six special education teachers from two integrated primary schools and one autism centre in the Klang Valley, Selangor, Malaysia participated in this research study. Based on the experimentation, direct observation and interview with the special education teachers as well as autism experts, it is shown that the children with autism gained positive attitude, increased self-confidence and obtained self-reliance in using the TaLNA. It is an aspiration that TaLNA could uplift the instructional learning environment for children with autism, which could avail boost in early childcare education (ECCE) and thus foster the quality of life for children with autism.

Name: NOOR AZLY MOHAMMED ALI  
Title: AN EXPLORATION OF PRINTING CHALLENGES AND STRATEGIES AMONG MALAYSIA COMMERCIAL PRINTERS  
Supervisor: PROF. DR. MUSTAFFA HALABI HJ. AZAHARI (MS)  
ASSOC. PROF. DR. NORZUWANA SUMARJAN (CS)

The printing market across the globe today is very challenging with many printing companies are striving to sustain their existence in the market. Malaysia printers are not excluded and received the similar pressure. Realizing the affect of this scenario in the long run, this study explored the printing challenges faced by the Malaysia commercial printers and the strategies used to maintain in the market from the management’s perspectives. A qualitative with the exploratory research design was used. The data collection was done in two stages. First, a preliminary study was conducted with fifteen companies in order to have a general understanding about the scenario and challenges faced by Malaysia printers. The themes from this stage were then analysed and then collapsed into four main themes: market challenge, technology development, human resources challenges, and quality implementation and enforcement. The themes generated from the first stage were then used to further explore the scenario at four large commercial printing companies that are established. In depth interviews were conducted with twenty-two to investigate whether the companies encountered the challenges and to compare the strategies used to retain in the market. All the participated printing companies highlighted and agreed that the global printing challenges impacted their printing businesses. It is recommended that printing companies to smartly utilize their existing resources, keep abreast with the latest technology, aware and adapt to market changes, and improve employees’ competency. Practically, this study could help Malaysia commercial printing companies to improve their businesses performances and stay competitive. Additionally, the sustainability strategies identified can be shared and benchmarked by other printers in improving their performance. The findings also could help relevant agencies to review current policies to augment the overall performance of Malaysia printing industries. Theoretically, the findings of this study enrich the existing literature with the current issues or challenges faced and strategies adopted by the Malaysia printers, which is very minimal being empirically studied before. This study focused on large printers, thus, future studies are encouraged to explore on Small and Medium Enterprise (SME) printers who play vital role in Malaysia printing industry.