

***Teaching Students with Autism Spectrum Disorder (ASD): An e-Module for
Teacher Training in Lao's People Democratic Republic***

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Abstract

The global prevalence of autism spectrum disorder (ASD) has increased markedly in recent decades. However, many mainstream teachers are lacking knowledge and skills to teach students with Autism Spectrum Disorder (ASD) in inclusive settings, particularly in countries with limited resources. To address the issue, we designed an e-module called 'The Story of Khamdy', which will be made available in the Facebook Social Learning Platform for free access. A novelty of this e-module is the presentation of a story through the compilation of over 200 pictures that illustrate the everyday experience of a boy with ASD called Khamdy and how his parents and teachers helped him cope with different daily living challenges. The acquisition of knowledge from the story was reinforced by 100 quiz questions which were designed to facilitate knowledge recalling and retention. The generalization of knowledge was enabled by the application of CCAF model (the initials stand for context, challenge, activity, and feedback) in the design of the assessment questions of this e-module. In a preliminary study, the efficacy of this module was assessed to inform the effectiveness of this e-module as a virtual interactive e-learning application for the purpose of ASD teacher training in Lao's People Democratic Republic, a country categorized as one of the least-developed countries by the United Nations.

Keywords: Autism Spectrum Disorder; Lao PDR; Teacher Training

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Introduction

Today, there is increased awareness about Autism Spectrum Disorder (ASD). However, many teachers reportedly do not have adequate knowledge and skills to teach students with ASD in inclusive classrooms (Low, Lee & Che Ahmad, 2018, Low, Lee & Che Ahmad, 2019). ‘The Story of Khamdy™’ is a 20-unit teacher training module about effective social communication and inclusion for young children with Autism Spectrum Disorder (ASD) (Low et al., 2019). The main component of this module is a 20-unit story which illustrates the everyday experience of Khamdy, a boy with Autism Spectrum Disorder (ASD), and how his parents and teachers helped him manage different learning and daily living challenges. The topics covered in this module include disputing the myths of ASD, identifying the early signs of ASD, early diagnosis and intervention, support for family, preparing for inclusion, social communication strategies, learning skills, friendship and bullying prevention, and transition to puberty and adulthood. Through a series of illustrations with easy-to-understand descriptive texts, this module aims to provide a meaningful and engaging way of learning about effective social communication and inclusion for young children with ASD. The module consists of four components:

The entire module is presented through a Social Learning Group called “The Story of Khamdy™” via the Facebook platform. It utilises the advantages of eLearning to enable module learners access the learning materials at any convenient time and locations. Guided by the general principles of Universal Design for Learning (UDL), each component is specially designed to optimise the learning outcomes (Rao, Edelen-Smith, & Wailehua, 2015) Multiple modes of presentations are used to deliver the module content, including video, infographics and texts, in order to offer learners a variety of ways to interact with the module contents. Additionally, the quizzes and assessments comprise questions in different testing formats that help learners engage with the materials and personalise their learning.

Facebook is chosen because of its popularity, familiarity, accessibility and affordability to communities of many countries, particularly to those in developing and the least developed countries. This means that barriers such as acquisition of complex technological skills can be reduced drastically. Secondly, Facebook has a relatively strong sustainability record and policies that allow free access and maintenance of pages, all of which are important for ensuring the sustainability of this module in the long term. YouTube and Google Form are embedded in the module to complement and enhance content delivery.

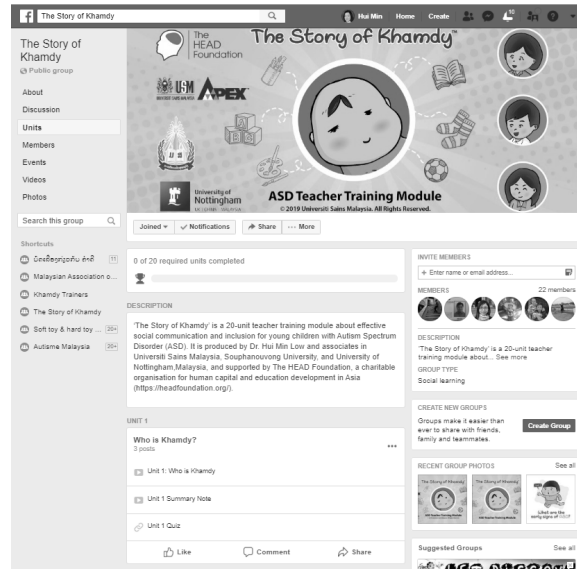


Figure 1 Facebook Social Learning Group

Module learners are encouraged to pace their own learning according to their convenience, schedule and learning capacity. For instance, learners can choose to complete a few units in a day or pace their learning across several days within a week or two. Pacing their learning across a few days instead of cramming all 20 units into one day will also allow learners sufficient time to process and retain the information effectively, as well as to reflect and apply the knowledge gained. To test the efficacy of using this e-module for teacher training, a preliminary study was conducted with a sample of teachers in Luang Prabang, Lao PDR.

Method

110 teachers from 25 schools in Luang Prabang were recruited by District Department of Education in Luang Prabang, Lao PDR to participate in this teacher training. Among these teachers, 87 of them completed the pre- and post-training knowledge assessment, using the Lao language version of Autism Stigma and Knowledge Questionnaire, ASK-Q (Harrison et al., 2017). The permission of translation was obtained from the ASK-Q developer. ASK-Q consisted of 49 items which assessed three specific domains of ASD knowledge, namely knowledge of diagnosis (18 items), etiology (16 items), treatment (14 items) and a general question about ASD knowledge (i.e., “I have prior knowledge of autism”). Among the 48 knowledge specific items in ASK-Q, there were 29 correct statements (e.g., Some children with autism may lose acquired speech) and 19 incorrect statements (e.g., Autism is preventable). Reserved coding was conducted for items with incorrect statements using the Excel template created by Harrison et al. (2017). Given that, only a unitary set of binary responses (i.e., ‘1’ and ‘0’) was produced, in which ‘1’ reflects having had the correct knowledge; while ‘0’ reflects not having had the correct knowledge. Composite scores were computed to represent the overall ASD knowledge and also the knowledge specific scores (i.e., knowledge about diagnosis, etiology and treatment).

Results

Comparison of pre-training and post-training ASK-Q results (N=87) revealed statistically significant knowledge gain in the all the three knowledge dimensions, $p < .001$ (refer to Figure 2). Specifically, the most notable knowledge gain was recorded for the dimension of diagnosis; from only 34.3% of teachers having had adequate diagnosis-related knowledge before the ASD teacher training to as many as 68.8% of them having had adequate diagnosis-related knowledge after the training (34.5% increase). This was followed by increase in the dimension of treatment-related knowledge (from 7.5% with adequate knowledge to 21.9% with adequate knowledge), and lastly in the dimension of etiology-related knowledge (from 1.4% with adequate knowledge to 7.5% with adequate knowledge).

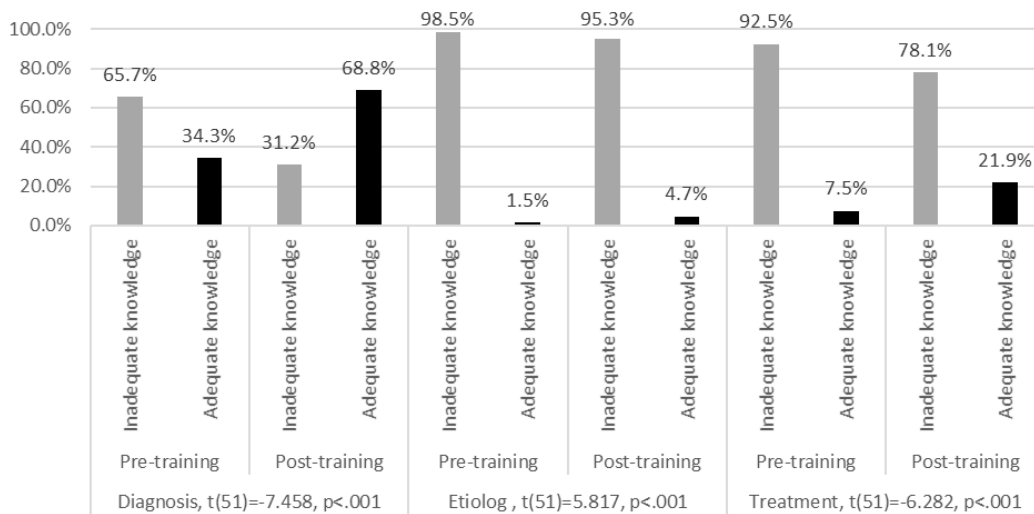


Figure 2 Pre- and post-training knowledge levels

Discussion and Conclusion

The creation of The Story of Khamdy™ is unique in several aspects. First, it is the first teacher training module on the topic of ASD that delivers information about ASD through a pictorial narrative approach (Low et al., 2019). The teacher training using this module is done through the process of telling a story using colorful illustrations which portray the every life experience of a child named Khamdy and how his parents and teachers supported him in this growing and learning process. Second, to make the teacher training fun and entertaining, the story is told using 20 multimedia videos which incorporated animation effects, audio narration and background music. The multimedia effects were added to add extrinsic motivation to the teacher training and ease memory retention. Third, this module is one of the most comprehensive teacher training modules on the topic of ASD as the content covers 140 information about effective social communication and inclusion for young children with ASD, including as many as 92 activities that teachers can replicate with young students with ASD in schools.

The findings from the preliminary study demonstrated that The Story of Khamdy™ is effective in promoting positive knowledge gain in a sample of teachers in the Lao PDR. Statistically significant knowledge gain was recorded across all knowledge

specific domains measured, namely knowledge about diagnosis, etiology and treatment of ASD. In conclusion, it is hoped that this module offers a means of easily accessible and sustainable teacher training on the topics of effective social communication and inclusion for students with ASD in the Lao PDR and other countries alike.

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