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THE VALIDITY AND RELIABILITY OF VIDEO MODELING MODULE FOR CHILDREN WITH ASD

Farrah Syuhaida Ismail[1] and Yeo Kee Jiar[2]

This study introduces the Video Modeling Module for children with ASD in order to increase their social interaction and emotional intelligence in classroom. Video modeling is a visual teaching method that used to teach multiple skills including social behaviors, daily living skills, adaptive skills, and conversation skills to children with ASD. The study aims to determine the validity and reliability of the Video Modeling Module for students with ASD which comprises on 10 sub modules which adapted from 10 video modeling. After the module developed, the analysis of validity and reliability were tested. There are four experts has been chosen to test the validity of the Video Modeling Module and the result showed that the value of validity coefficient is high which is .93 while the reliability analysis that was tested by using SPSS version 19.0 showed that the value of reliability coefficient is also high which is .906. The findings conclude that all the sub modules for the Video Modeling Module have a high validity and reliability and are ready to use by special education teachers in order to increase social interaction and emotional intelligence among ASD children.

Keywords: Video Modeling Module,Validity, Reliability, Social Interaction, Emotional Intelligence, ASD.

1. INTRODUCTION

Children with Autism Spectrum Disorder (ASD) always have problems in social interaction and emotional intelligence that include lack of response to another person's emotions, lack of reciprocal social emotional interaction and difficulty reading social cues (Critchley *et al.* 2000). They just make or accept fewer social interaction and spend their time playing alone compared playing with their friends (Koegel, Koegel, Frea, and Fredeen, 2001; Shabani *et al.*, 2002).

Children with ASD also have difficulty establishing and maintaining relationships. They tend to interact less with other children and show preference to play alone. They also do not respond to non-verbal forms of communication likes facial expressions, eye contact and physical gestures. They quite difficult to understand other people's feelings and emotions, and also difficult to start conversations with other people or difficult participating in them properly. It will affect their ability to have activities with other people and it is also hard for them to share interest with their friends. For this reason they may seem aloof and distant. Because they always delayed in their language development and difficult to make

[1] Universiti Teknologi Malaysia, *E-mail: farrahcool82@hotmail.com*
[2] Universiti Teknologi Malaysia, *E-mail: kjyeo_utm@yahoo.com*

sense of other non-verbal forms of communication, they will always have repetitive behaviour and play, so that they will avoid social interaction and also have problems in emotional intelligence.

A large number of studies have shown that children with autism can increase their social interaction and emotional intelligence when we provide them with appropriate and well planned treatment strategies. One of the strategies is by using video modeling. Video modeling is a visual teaching which described as observing the appropriate target behaviour via video model prior to an opportunity to perform any skill or target behaviour. So, this paper explains the steps on how video modeling module was developed and the procedure used to test the validity and reliability of Video Modeling Module.

2. VIDEO MODELING

Video modeling is an approach used to teach multiple skills including social behaviors, daily living skills, adaptive skills, and conversation skills to children with ASD (Charlop, *et al.*, 2008; Cihak and Schrader, 2008). Successful use of video modeling in teaching academic, functional skills and social skills to children with autism has been found in three last decades. It helps the child to memorize, imitate, generalize and adapt target behaviour. It is also effective to help children with ASD to learn any behaviours or skills by watching and observing the modeling from the video several times and it would not do if provided with live models (Charlop and Milstein, 1989). According to Bandura (1969), people can learn new skills or behaviours by watching other people and this is known as observational learning or modeling.

Children with ASD often get advantages from visually cued instruction (Quill, 1997) and show strengths in visual information and thinking rather than verbal information. This might be because visual information lasts longer and is more concrete than spoken or verbal information. The visual information from video modeling helps children with ASD to look an example of target behaviour and after that the children will imitate the specific behaviour in a given setting (McCoy and Hermansen, 2007).

In video modeling, a student is shown a video of someone modeling a targeted behaviour or skill and then imitating the behaviour skill wanted. The recorded model is shown a few times and after that, the student will get a chance to perform the scripted behaviours observed on the video. After viewing a model's behaviour then it is hoped that the student will show the similar behaviour in regular settings (Haring, Kennedy, Adams, and Pitts-Conway, 1987; Morgan and Salzberg, 1992). In general terms, video modeling can be described as simple and effective teaching tool that motivating children to learn through a fun and interesting visual medium.

3. STATEMENT OF PROBLEM

Children with ASD have difficulties in behaviour, communication, sensory sensitivity and social interaction. The example of social interaction likes eye contact, verbal communication, non verbal communication and social reciprocity (Bellini and Akullian, 2007; Maag, 2006; Mechling and Gustafon, 2008; Shukla-Mehta, Miller and Callahan, 2011; Weiss and Harris, 2001). Children with ASD make or accept less social interaction and have great difficulty interpreting what they see and hear. A lack of involvement in social interaction can cause an inability to make friendships. Lack of friendships can cause a poor school adjustment, depression and anxiety problems (Kokina and Kern, 2010; Solomon, *et al.*, 2011; White, Koening and Scahill,2010). Because of the pervasive nature of the core social interaction deficit in autism, it will also affect their emotional intelligence. According to Cloward (2012), children with impaired emotional intelligence will experience difficulties during social interactions due to their difficulty interpreting emotional signal of others.

Many studies have been conducted to promote the social skills of children with autism by focusing on increasing their social interaction and emotional intelligence with other people. Nowadays, there has also been interest in the use of treatments such as video modeling and module for children with autism. Even though a lot of study on video modeling had been carried out, but studies related to validity and reliability of module in Malaysia are still low and researcher still does not find any development of module using video modeling in order to increase social interaction and emotional intelligence among ASD children. Therefore, this research is carried out to build the video modeling module and to ensure that a module really works before using it, the validity and reliability of the content must be obtained.

4. OBJECTIVES OF THE STUDY

General objectives of the study are to develop Video Modeling Module for students with ASD which has a high level of validity and reliability. The specific objectives of the study are:

1. To develop the Video Modeling Module for student with ASD.
2. To test the validity of the Video Modeling Module for student with ASD.
3. To test the reliability of the Video Modeling Module for student with ASD.

5. METHODOLOGY OF THE STUDY

This part discusses the methodology used in the study including the research design, instruments and sample of the study, validity, reliability and data analysis.

5.1 Video Modeling Module

In this study, Video Modeling Module was developed based on ADDIE Model. This model is an approach to help instructional designers, any content's developer, researchers or even teachers to plan an effective teaching design by referring to the processes of the ADDIE model on any instructional product. In addition, this systematic process is represented in the acronym ADDIE, which stands for the important components in the process of creating the instructional design, which are Analysis, Design, Development, Implementation, and Evaluation. The model has been generally utilized by many Malaysian researchers, for example, Muhammad Izuan Abd Gani (2015), Jamaluddin Harun and Siti Nurulwahida (2009) and Norasykin Mohd Zaid and Faridah Mohamad (2010) in order to determine the validity and reliability of their modules. This model contains of five stages, which are Analysis, Design, Development, Implementation, and Evaluation. Each stage in ADDIE model is connected and interacts with each other.

The first stage is analysis. It is start with gather information about the intended audience (characteristics and knowledge/skills) and then identifying the challenges that exist, the task to be completed, delivery option and the learning objectives. Next, the second stage is design. This stage focused on content selection, instructional strategy and methods and also material selection. After that, it will be followed by development stage. It is include the development of reference material and assessments. Then, at the fourth stage, the module itself will be implemented. In order to test the validity and reliability, the outline of the module will go through a pilot test. If it is confirmed that this module is high in validity and reliability, then it can be proceed to the last stage, evaluation. Finally, after following these five stages, the module can be conducted in a real study. Figure 1 below demonstrated the process of module development based on ADDIE Model.

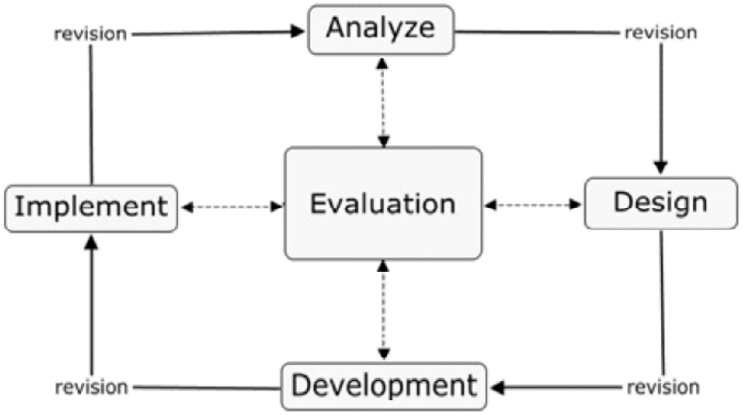

Figure 1: The Process of Module Development Based on ADDIE Model.

Then, the next step is to compile the content of this module based on the 10 sub modules which adapted from 10 video modelling. The module is developed according to two variables, communication and social connection based on theory of mind put forward by Simon Baron-Cohen, Alan Leslie, and Uta Frith (1985) and also according to The Four Branches of Emotional Intelligence basic concepts put forward by Mayer and Salovey (1997), namely Perceiving Emotions, Facilitating Emotions, Understanding Emotions and Managing Emotions.

Each sub module has its objective and also activities and worksheets that need to be completed by ASD children. The selection of activities in this module depends on the knowledge, skills and values that the teachers want to instill in order to increase social interaction and emotional intelligence among ASD children. Each activity must be in parallel to and in accordance to the standards of teaching and learning objectives contained in the Special Education syllabus or known as 'KSSR Pendidikan Khas (2010). There are 10 video modelling approach proposed in the module, namely Can i borrow?, My family, Good morning teacher, Let's play snake and ladder, Can I go to toilet?, Listen to the instruction!, Let's share foods!, What is your name?, Teacher, i didn't understand and Let's eat!

Then, activities in the module were compiled based on 10 sub modules which adapted from the 10 video modelling. These activities have been included several graphic elements and interactive activities in order to increase interest and attention of ASD children for example, activities likes colouring, singing, and incooperative play mode, which aims to simultaneously and increase social interaction and emotional intelligence among ASD children. According to Sidek Mohd Noah and Jamaludin Ahmad (2005), in order to make the module become interesting, the selection of activities is the most important thing.

5.2 Validity and Reliability

The validity of the module has been done by considering the opinions of four experts who were qualified in psychology and special education field and also have experienced in developing module. According to Majid Konting (1998), one of the methods to determine the content validity of a measurement tool is through expert opinion. These experts evaluate the suitability of the items used to measure the selected domain in the module and instruments. In order to measure it, the researcher developed a form of questionnaire based on the objectives of each sub module.

Then, the scale that has been used is Likert Four Scale starting from number (strongly disagree) until 4 (strongly agree). The calculation method for content validity is using formula by Jamaludin (2008), apart from opinions by Russell (1974). Formula for content validity used as follows.

$$\frac{\text{Total Score expert } (X)}{\text{Maximum score } (25)} \times 100\% = \text{Content Validity Achievements}$$

After getting the experts validity, the reliability of video modeling module has been carried out involving 10 ASD children in Johor Bahru. The evaluation of a module can be tested by observing the ASD children are able to follow or not the steps in each activity (Russell, 1974). Then, the reliability of a module can be tested by utilizing a questionnaire based on the steps of module's activity or the objectives of the module (Sidek Mohd Noah and Jamaludin Ahmad, 2005)

To determine the reliability of a module, the sample of the study need to answer questionnaires created based on the steps in each activity in the module. After they had completed all the activities in the module, they had to answer the questionnaires during pilot test. Then, to get the reliability coefficient of the module, the researcher analysed the questionnaires using Cronbach Alpha. Hair (2006) suggested that the measurement reliability measured by using Cronbach Alpha coefficients, with a scale of measurement that is more than 0.70 is considered as an acceptable reliability indicator. While Majid Konting (2004) suggested that Cronbach Alpha level of 0.60 and above has a high reliability.

5.3 Sample of the Study

To test the content validity of Video Modeling Module, four experts who are qualified with experience in psychology and special education fields were selected by the researcher. Then, 10 ASD children were selected for the pilot study in order to test the content validity of Video Modeling Module. All of them are among 7-11 years old ASD children from primary school around Johor Bahru.

6. FINDINGS AND DISCUSSION

6.1 Validity of Module

The result of validity test shows that the Video Modeling Module has high validity level. Below is the result of Questionnaire of Video Modeling Module found from four experts.

TABLE 1: RESULT OF CONTENT VALIDITY

No.	*Guest Assessor Experts*	*Validity Content Achievement*	*Experts Opinions*
1.	Expert 1	93%	Accepted
2.	Expert 2	89%	Accepted
3.	Expert 3	100%	Accepted
4.	Expert 4	93%	Accepted
	Total (min)	93%	Accepted

Based on the result of validity test, the content validity coefficient value was .93. The final content of good validity is based on opinions from Tuckman and Waheed (1981) and Abu Bakar Nordin (1995) which is 70 percent level, assuming the reach of high achievement. Based on the result of validity test, all the four experts agreed that the contents of Video Modeling Module is related to the objective in the item statements and suitable to be implemented to the ASD children.

6.2 Reliability of Module

TABLE 2: DATA ANALYSIS OF RELIABILITY TESTING

No.	*Sub Module Video Modeling Module*	*Number of Activities*	*Alpha Cronbach*
1.	Sub module 1: Can I borrow?	2	0.964
2.	Sub module 2: My family	2	0.952
3.	Sub module 3: Good morning teacher	2	0.972
4.	Sub module 4: Let's play snake and ladder	2	0.93
5.	Submodul 5: Can I go to toilet?	2	0.969
6.	Submodul 6: Listen to the instruction!	2	0.932
7.	Submodul 7: Let's share foods!	2	0.914
8.	Submodul 8: What is your name?	2	0.972
9.	Submodul 9: Teacher, I didn' t understand	2	0.889
10.	Submodul 10: Let's Eat!	2	0.914
	Reliability Coefficient of the Module	20	0.906

Table 2 shows the results of reliability testing during pilot test. As recommended by Sidek Mohd Noah and Jamaludin Ahmad (2005), the reliability analysis was tested by employing a questionnaire based on the steps of module's activity of the module during the pilot test and 10 respondents have answered 20 questions based on the 20 activities in the modul. Then the researcher has analyzed the response from the questionnaires using a computer assisted program Statistical Packages for Social Sciences (SPSS) Version 19.0 and the outcome showed that the value of reliability coefficient is high with .906. Based on the results of reliability testing, we can say that the samples of the studies are able to follow all the steps of 20 activities in 10 sub modules and also understand the objective of the activity. So, it means that the module is suitable to be used by researcher in real studies.

7. IMPLICATION AND SUGGESTIONS

The result of this study is hoped in contributing the knowledge growth about procedure and methodology in developing module in Malaysia. Besides that, this research also help to provide the ASD children with further and more information about Video Modeling and help the special education teachers to increase social interaction and emotional intelligence among ASD children. The researcher also

has some recommendations for further research in this area since this Video Modeling Module has high validity and reliability. For the future, researcher suggests that other researchers can refer to ADDIE Model in order to develop new modules. Besides, the experts' evaluation and the calculation procedure proposed by Russell's formula (1974) can be used in order to test the content validity of module. Lastly, to confirm the effectiveness of the module development, the qualitative approach such as observation and interview also can also be employed.

8. CONCLUSION

For the conclusion, this research has successfully developed a Video Modeling Module with high value in validity and reliability by referring the stages in ADDIE Model. Therefore, Video Modeling Module can be used in the real study and hopefully can contribute a good effect to the special education teachers in order to increase social interaction and emotional intelligence among ASD children.

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