

# Mantuku (Manekin Tubuhku: As an Adaptive Media for Sex Education to Toddlers)

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## ABSTRACT

Sexual assault to children in Indonesia or global has become a serious issue. Ideally, sex education is introduced since the children is in early age. Therefore, *MANEKIN TUBUHKU* (MANTUKU) is made as an adaptive technology for sex education to early childhood. This research includes a research and development uses ASSURE model which consists of (1) problem identification, (2) empirical studies, (3) replication, (4) synthesizing, and (5) reviewing. The implementation is done to normal and disability early age children in East Java Province. From the result of the research, it is concluded that MANTUKU is an effective adaptive technology which helps sexual education learning for early childhood.

**Keywords:** MANTUKU, Early Age Sexual Education, Sexual Education Adaptive Technology.

## 1. INTRODUCTION

Sexual assault in Asia pacific is the highest on the world. Generally, the victims are under 15 years old and have sex on coercion. This phenomenon becomes a concern because it impacts on unwanted pregnancy, unsafe abortions, and the spreading of sexual diseases.

There are about 90 million growing children in Indonesia. Where according to the constitution number 35, 2014 of Indonesia, a child is someone who has not been 18 years old including fetus in the womb. The research about sexual harassment towards children does not systematically or periodically recorded. Indonesia needs improvement in researches on children data collection. Lacks of available data and the differences has become international notice. This is reasonable since Indonesia is a populated nation where the number of the children is more than a quarter of total 266,91 million people projected population per 2019

Some cases about pedophilia like underage pornography in facebook involves 16 children as objects of forced sex for 7400 group members. The Republic of Indonesia Witness and Victim Protection Agency shows data of increasing pleas of protection and legal aid from sexual assault towards children. 35 applications in 2016, growing twice in 2017, 149 applications in 2018, and in 2019, counted from January to June, there has been 78 applications submitted. By following data, 80.23% sexual abusers are the victims' relatives while 19.77% are strangers.

Indonesian Children Protection Commission (KPAI) also monitors the growth of sexual assaults towards children. Based on the monitoring, since January to April 2019, KPAI reports that sexual harassments and assaults

frequently committed by teachers in elementary schools. The cases spread in Java Island, Sulawesi, and Sumatera. The impacts of sexual harassment to the victims can be psychic trauma, shifts of behavior, up to physical disease like what happened to the victim of sexual assault in Jakarta International School in 2014 but the judgment process hasn't been done until 2019. The corresponding case shows us that sexual harassment can be happening to early age children in kindergarten, elementary students or even junior high, and from rich family or from poor.

The description above has proved enough to explain the condition of Indonesia which is in emergency of sexual crime towards children. To solve it, sexual and reproduction education needs to be integrated in the curriculum so it can appear on school systematically. If schools are highly committed to supports the students to know and comprehend the concept of freedom, values, rights and responsibilities, then the success rate of implementing any school programs are higher.

Netherland Government mentioned that the purpose of sex education is to prepare everybody can be responsible for their own sexual life when they are mature. Therefore, sex education is considered as one of the empowerment there. The ideal strategy to start building sexual knowledge is from formal education. To be effective, sex education has to be applied comprehensively. Comprehensive sex education aims to give proficiency about sexuality and reproduction adequately so that every young generation can determine how to use their reproduction and sexual right wisely, safely, and honorable. Effective sex education ought to be started since in the early age proper to childhood development and undergoing curriculum.

In Asia, only China, government of Korea, Mongolia, and Philippine who have include comprehensive sex

education into their formal school curriculum. While in Pacific, only Papua New Guinea and Fiji which has the same policy. From those countries, many recommend that sex education should be started while children is 5 years old. The contents are also should be limited on health, not yet to put gender norms, behavioral changes, human rights and discrimination.

In Indonesia itself sex education had already integrated in Curriculum 2013 thematically and implicitly. The education starts from Preschool level. In K13, early age children are targeted to know the name of body part correctly and understand which body parts are touchable for the opposite sex and which are not. Other than that, children are expected to be able to give rejection response like screaming for help if there is a person except parents or teacher suddenly touch breast area or penis.

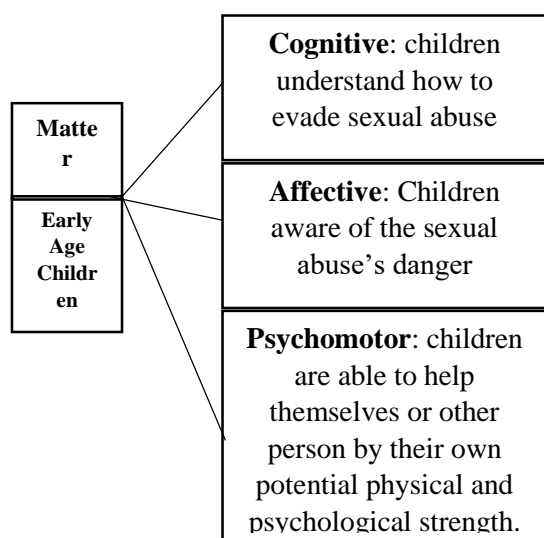


Fig 1. Blooms' Taxonomy of Sexual Education for Preschool in Indonesia

The sexual education provision to children in Indonesia still has not been spread evenly by all educational institutions. Nevertheless, nowadays, discourse related to good quality sex education for early age children is being highlighted. Hopefully, early age children are provided with skills to understand and act critically in order to avoid exploitation and sexual harassment so that they can have a good sexual and reproduction health development in their life. Sex education also has become focus in western society because it is in line with the progression of childhood modern concept.

## 2. METHOD

Generally, a research is defined as a data collecting and analyzing process which is conducted systematically and logically to reach certain goals. Those methods had already tested so they have standardized methods. This research includes a research and development using ASSURE model that consist of (1) doing problem identification, (2) conducting empirical studies, (3) replicating, (4) synthetizing and reviewing, and (5) using and evaluating the result of the research.

ASSURE model is developed by Heinrich and Molenda in 1999. ASSURE model is designed to help using median or technology effectively on learning process. Gagne portrays the ASSURE model as a learning model that can emerge students' interest because students involved fully in the learning experience through media and technology. ASSURE model is easy to implement in the learning process either individual or classical. So, it is suitable conduct to this research that aims to help teachers giving basic sex education for early students through MANTUKU as an adaptive technology. The objective of the media development is to make early age children understand which one sensitive area and vice versa, then what she/he should do if they touched by others.

Implementation had been done to 46 children years 4-6. 27 male and 19 female. 23 normal early age students and 23 exceptional early childhood comprise. 4 imbecile; 4 moron; 3 autism; 9 deaf; 1 blind; 1 down syndrome. The sampling technique using simple random sampling. The problem identification started from researcher's experience as an educator. Empirical studies was done in SLB B Kedung Kandang Malang. The replication was done in East Java region consist of Tunas Bangsa Blitar Special School, SLB Kedung Kandang Malang Special School, Putra Jaya Malang Special School, and Kartika IV-68 Pandaan Kindergarten.

To reassure the result about effectiveness of MANTUKU as a media to help in teaching basic sex education, there is teacher validation. Videlicet an assessment of the classical and individual learning which is held in each schools. The validators are the teachers who scores in scale 1-5 for each items out of 20 question items relating to the material and sex education learning media for early age children in accordance with the undergoing curriculum. So, the validation scales from 0-100. Furthermore, there is interview about material and media.

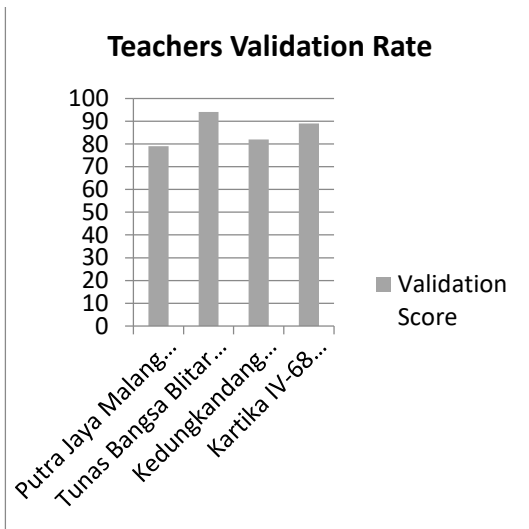


Fig 2. Material and Media Validation Result by Teachers

The evaluation was done by participatory observation method. When class was ongoing, the co-teacher described to assess students' cognitive, affective and interest to the media. Main teacher then intensified by the non-test evaluating technique in the form of question and answer orally. Afterwards, the result interpreted into scoring scales from 1-5 for 20 items. So, the validation scales from 0-100. The media also validated by 2 experts in educational technology. By scoring 20 questions, the result showed that MANTUKU is valid until 97%.

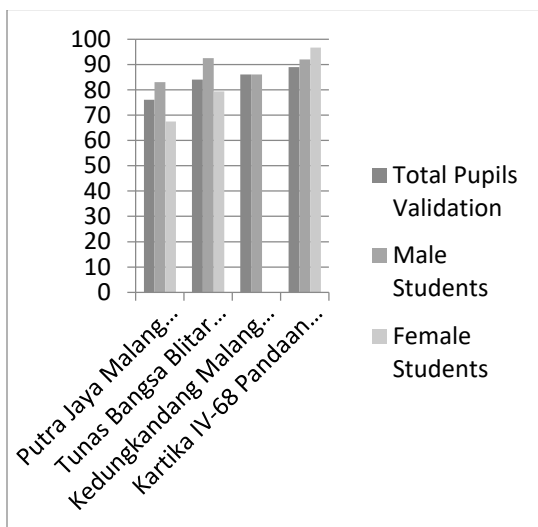


Fig 3. Students Validation Result

### 3. DISCUSSION

Maria Montessori views that children is a particular pole in human life. Children life and adults' considered as two corresponding poles because children life experience will affect their behavioral pattern and life in the future, on the contrary, grownups treatment to the children will affect their development.

The definition of early age according to Preschool Sub directorate which limits the meaning of early age on 0-6 years old, is until the child finishes kindergarten. According to Sigmund Freud's theory of psychosexual. He emphasizes in sexual motivation, developmental phases called psychosexual stages, i.e.

Table 1. Psychosexual stages by Freud

Stage	Psychosexual Stages by Freud	
	Age	Essential Elements
Oral	0-1	Mouth. Related to basic needs satisfaction such as food and drinks
Anal	1-3	Anus. Behaving children on toilet training.
Phallic	3-5	The genitals are the source of erotic pleasure; boys may fear castration, girls develop penis envy
Latency	6-puberty	At the beginning of this period infantile amnesia hides our earlier experiences from us; recovering them is the major task of psychoanalysis
Genital	Puberty-adulthood	If the earlier stages were resolved successfully, then normal adult life proceeds

Another Freud's theory about seduction criticized by many researchers caused settled father as a perpetrator of childhood sexual assault. Nevertheless, the data discovered that prominently perpetrators are children's relative. However, sexual assault is immoral and belongs to a criminal. So, it must be pivotal to have a program about sex education.

The Regulation of Minister Education and Culture Number 146, 2014 Chapter 5 related to Preschool curriculum structure covers about developmental programs that consist moral and religion, motoric physic, cognitive, language, social-emotional, and art. Based on those theories, MANTUKU can be a preventive solution through education to early childhood.

Exceptional Children are those who are physically, intellectually, mentally, emotionally, or socially challenged, so they need special treatment in order to minimize the hindrance. Disabled groups are more prone to sexual assault rather than normal individual. On average, disabled society experiences becoming victims

of sexual harassment, and rapes are twice in their life, but in a higher number of population in the United States of America shows even ten times.

Even more, the assaults are not only encountered by females but also males. Disability's male also a higher chance of becoming victims of sexual assault. The problem grows even broader because this sexual assault disables more little probability of heal caused by the number of survivors than the professional healing personnel is encountering a wide gap.

Moreover, naturally, children with physic, mental, and social abnormality will affect their way of living. They will have felling of inferiority, easily irritated, frustration, and introversion so it will give them negative effect if it is not properly aided.

The facts above reaffirm that sex education should delivered both to normal and disability children. Sex education has grown to be every individual right because it is a part of human right. In more detail, sexual and reproduction right has been regulated in Sexual and Reproduction Health Rights (SRHR) and legitimated in International Conference for Population and Development (ICPD) in 1994 with 179 participating countries.

The responsibilities in giving sexual education is on parents and teachers. While the schools are responsible so that the knowledge can increase children's productivity. The problem is, many parents and teachers see that the discussion about sex is taboo and even sinful in moral etiquette. This phenomenon is also happens in Indonesia, which causes Indonesian children facing difficulties in getting information about sex and reproduction information.

Instead, children are getting the access of the information through internet, magazines, and friends which the validity is argueable. Of course invalid knowledge possess high risk in leading children towards unrealized deviant behaviors as happens in a case where teenagers thought she is helping her boyfriend take out his white bloods by doing sex. On behalf of that, it is important to provide knowledge about sexuality and reproduction through adaptive media that is able to be used either by parents at home or teachers in school as an exciting learning media.

MANTUKU basically is a simple robot. Robot is a machine produced by handmade assembly. Robot works without feeling unlike human. Early creating of robot is intended to help human, but on the future, by the evolution of technology, robots are able to take over human works completely and able to change human race variedly. In this case MANTUKU will help kindergarten teachers to introducing basic sexual education.

A sensing component of a robot is called a sensor. Sensor is a device in a robot which can change physical scale into electrical scale so that can be analyzed using certain electric circuits. MANTUKU utilize touch sensors. Touch sensor is part of contact sensors. This sensor is used to detect contact or force if there is some touches given. Touch sensor is a sensor that capable of detecting while a thing is getting a touch just the same as human skin.

Touch sensor first time developed in 1971 by Dr. Sam Hurst. Touch sensor is part of electronic devices as data input media by detecting sensor area which is getting touch. Touch or the force given on a robot generally uses fingers or hands or also using tools like stylus pen.

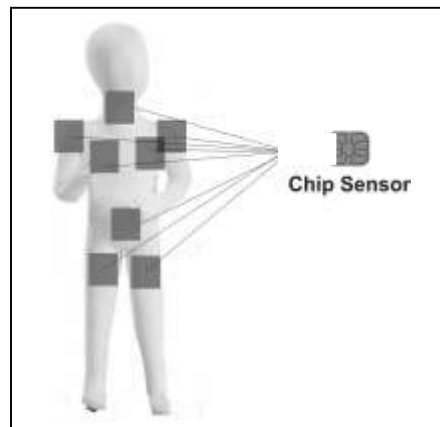


Fig 4. MANTUKU designed with sensor

How the touch sensor works is like a switch that take advantage electric current from human body. The touch sensor installed on the neck down to the thighs to introduce to early childhood. Those area should not be touched by anyone except in an emergency. If MANTUKU is touched on those part, it will issue a warning sound and a red indicator light to confirm it is dangerous or prohibited.

The use of sensors in adaptive technology is important for disabled students like students with sighting hindrance which can help them communicate and learn. The use of touch sensor applied learning media can ease them to study. Beside of that, the use of adaptive technology also can help students with impairment in learning. Technology helps students with special need in getting knowledge and skills in exceptional way.

#### 4. CONCLUSION

Based on the reimplementaion held in normal and special kindergarten, MANTUKU is effective as an adaptive sex education learning media for early age children. The level of efficiency of the learning using MANTUKU is determined by class conduciveness, especially for the special kindergarten. A class which integrate some defects with opposite characteristic tend to need extra effort in conditioning from teachers. Therefore, special kindergarten ought to do the learning activity in a small group that have equal disability. While for the normal kindergarten there is no particular hindrances or requirement for an effective learning activity. The learning activity is still effective either in the small group or big group.

## 5. HONORABLE MENTION

Our gratitude to Education Department of State University of Malang that has given us partial financial support for this research.

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