

MODELING THE SCALE OF EARLY CHILDHOOD SEXUAL KNOWLEDGE THROUGH THE APPLICATION OF GAMES APPLICATIONS LET'S TAKE CARE OF YOUR BODY

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Abstract

Efforts to increase sexual knowledge in early childhood can be done through sex education as early as possible. The purpose of this research is to model the variables of body anatomy, self-knowledge, ethics, and caring for the body that affects the scale of early childhood sexual knowledge and apply educational games with the theme "let's take care of your body". The sampling technique used is simple random sampling. The sample used was 100 Kindergarten (TK) children in Kepanjen City, Indonesia. This study uses the Second Order Confirmatory Factor Analysis (CFA) Structural Equation Model (SEM) method with SmartPLS. The results of the study show that this educational game is feasible enough to be implemented and used according to the character's age and form of learning. The results of the analysis show that structural modeling using SmartPLS on the scale of game-based sexual knowledge "let's take care of your body" can be an innovation that can increase the scale of sexual knowledge in early childhood. This educational game can provide a more specific picture related to these indicators and it is easier for young children to understand the measurement process because it is adjusted to their level of understanding and the world of children is the world of play.

Keywords: Early Childhood, Educational Games, SEM Second Order CFA, Sexual Knowledge Scale.

1. INTRODUCTION

Early childhood is a child who is in the age range of 0-8 years. Early childhood is also commonly referred to as the golden age which is the basic period for a child to develop all aspects of his development optimally. The World Health Organization (2015) states that early childhood is in the age range of 0-8 years.

Every aspect of development must be developed in a balanced way, so that early childhood can develop as a whole. One aspect that is also developed in early childhood is sexual development.

The development of sexuality refers to the theory of psychosexual development expressed by Brackenridge (1994).

Brackenridge views sexual development from a more complex perspective, namely biological, social, and emotional (Brackenridge, 1994).

The development of sexuality develops from the beginning of a person's life and must be optimally developed in children after an early age.

According to Kakavoulis (2014), there are several aspects of early childhood sexual development, namely

- (1) Body anatomy,
- (2) Self-knowledge,
- (3) Ethics, and
- (4) Taking care of the body.

Robinson & Davis (2014) argue that knowledge of sexuality must be understood as early as possible.

Parents and teachers can provide sexual knowledge, this is also following what was stated by Pandia et al., (2016) that providing sexual knowledge must be done step by step and carried out since the child can communicate well.

At an early age, parents play a very strong role in providing sexual knowledge. When the child begins to enter the school environment, the teacher also plays a role in providing appropriate sexual knowledge for early childhood.

Volbert (2000) revealed that knowledge of sexuality is very important to be developed in early childhood. Friedrich (1993) explains that proper sexual knowledge will help a child avoid sexual violence.

Based on research conducted by Volbert (2000) that sexual knowledge is influenced by how parents and teachers convey material or rights related to sexuality to children.

Boys and girls have different knowledge of sexuality, for example, 58% of girls understand their body parts faster than boys, and 15% of boys can express specific body functions compared to boys. with girls her age.

Efforts to increase sexual knowledge in early childhood can be done through sex education as early as possible.

Based on the results of interviews conducted by researchers, the implementation of sexual education places more emphasis on students' understanding of gender differences, body anatomy, and maintaining body hygiene, not yet covering the social and emotional aspects of students.

The media used by teachers is to use images related to body anatomy to explain body parts, only a few schools have sufficient facilities that use learning videos to introduce body anatomy to students.

Zuhriyah & Ndari (2021) revealed that animated videos can help increase sexual knowledge in early childhood, of course, the material provided must be following the level of understanding of early childhood.

In this study, researchers developed a digital-based measurement tool, in the form of an educational game with the theme "let's take care of your body" which will be used to measure early childhood sexual knowledge, with material and scoring adapted to indicators of sexual knowledge in early childhood.

Here are some displays of educational games with the theme "let's take care of your body"



Figure 1: Display of an Educational Game with Let's Take Care of Your Body

2. LITERATURE REVIEW

2.1. Sexual Knowledge in Early Childhood

2.1.1. Definition of Sexual Knowledge in Early Childhood

Early childhood is a unique individual and has different characteristics compared to adult humans. One aspect that is developed in early childhood is psychosexual development. Crain (2015) reveals the stages of psychosexual development in humans. Psychosexual development is the stages of growth and development of sexual function that can affect the psychological development of the individual. The stages of psychosexual development are as follows (Crain, 2015):

1. Oral / Mouth Phase (0-18 months), this phase is the first phase that must be passed by a child since birth. At first, the baby cannot distinguish between his lips and his mother's nipple, which is the association between satiety and breastfeeding. The first primitive reaction to objects is that the baby tries to put everything he is holding in his mouth. Babies feel that the mouth is a place of gratification (oral gratification). Hunger and thirst are fulfilled by sucking on the mother's nipples. Infants' needs, perceptions, and modes of expression are primarily concentrated in the mouth, lips, tongue, and other organs associated with the oral region. The oral drive consists of 2 components, namely libido drive and aggressive drive. The libido drive is the sex drive in children, which is different from the libido in adults.

2. The anal phase (1.5 - 3 years), this phase is marked by the maturation of the anal sphincter muscle nerves so that the child begins to be able to control his stools. In this phase, the child's satisfaction and enjoyment lie in the anus. Enjoyment is obtained when holding stools. Pleasure vanishes after defecation is over. If the pleasure that is obtained by children in this phase is disturbed by their parents by saying that the production results are dirty, disgusted and so on, even if it is accompanied by anger or even threats that can cause anxiety, then this can interfere with the development of the child's personality. In the development of adult sexuality, children feel disgusted (dirty) towards their genitals and cannot enjoy sexual relations with their partners.
3. Philip phase (3-5 years), in this phase, the child's attention begins to be directed to his genitals. Children begin to understand the gender differences between themselves and other people around them. The child begins to feel that his genitals are a place that gives pleasure when he plays with that part. But parents often get angry and even issue threats when they see their child holding or playing with their genitals. During this period, the Oedipus complex and electra complex also occur, where children feel very comfortable when they are around parents who are of a different sex from them (daughters are with their fathers, while boys are with their mothers).
4. Latent phase (6 -11 years), in this phase all sexual activities and fantasies seem to be depressed because the child's attention is more focused on things outside the home. But curiosity about sexuality persists. Children begin to be oriented toward their peers of the same sex (as seen from the group and play behavior that arises during this period, namely: children will tend to group with friends of the same sex). It is possible, children will receive information about sexuality from friends of the same sex, which is not necessarily true, openness with parents can correct wrong and misleading information. In this phase, disturbances in homosexual relations can occur in both men and women.
5. Genital phase (11 years and over), in this phase the process of psychosexual development reaches its "end point". The sexual organs begin to be active in line with the functioning of the sexual hormones so physical and psychological changes occur at this time. Girls reach their maximum growth rate at around 12-13 years old, while boys are around 14-15 years old. In young women, menstruation occurs, and in young men, wet dreams occur.

The development of sexuality at each age stage shows different conditions of development and indicates sexual knowledge within a child. Volbert (2000) states that sexual knowledge in early childhood will increase when parents and teachers provide insight that is comprehensive enough and adapted to the stages of early childhood development. Pandia et al., (2016) based on the results of their research revealed that sexual knowledge must be formed from an early age so that it can become a basic asset for a child to be better able to know his condition biologically, which in turn can help to understand the conditions of other people socially, emotionally, and form ethics in early childhood.

2.1.2. Aspects of Early Childhood Sexual Knowledge

Aspects of sexual development support the formation of sexual knowledge in a person, which will develop from an early age.

Kakavoulis (2014) states aspects of sexual knowledge, namely:

- a) Anatomy of the body, including the parts of the body and the functions of the limbs.
- b) Self-introduction, including gender identity and gender differences
- c) Ethics, including gender roles, respect, and respect for oneself and others
- d) Taking care of oneself includes maintaining cleanliness, and body health, and avoiding things that can hurt or harm oneself

Sexual knowledge is very important to be developed from an early age. Volbert (2000) revealed that knowledge built from an early age can be the basic capital for a child to be able to understand the condition of himself and others and be able to protect himself and others from sexual violence. Astuti et al., (2017) described materials about sexuality knowledge needed in early childhood, including

- (1) Introducing the differences that exist between men and women,
- (2) Introducing reproductive organs and their functions,
- (3) How to take care of the health of the intimate organs and
- (4) The ability to protect oneself from sexual violence. Children who have reached these indicators have good knowledge of sexuality. Dahlia et al.,

2.1.3. Factors Affecting Sexual Knowledge in Early Childhood

Frederick (2007) states that sexual knowledge is influenced by individual, family, and environmental factors. At the individual level, the age and sex of the child are among the most investigated and predicted factors; Several studies have revealed that sexual knowledge in normative and clinical groups is highly related to the age of the child. Kater & Baartman (2000) states the factors that influence sexual knowledge in early childhood are as follows:

1) Situational Factors

Depending on the child's developmental level, changes in the environment and situation can increase sexual awareness. Preschool-aged children are naturally very curious about themselves. Situational factors are conditions in which the environment provides insight or proper knowledge to early childhood about the condition of their bodies, limb functions, gender roles, how to treat themselves and other people, and how children can take good care of their bodies.

2) Child Growth Environment

The growth environment for a child is the family, school, and peer environment. Sexual knowledge will be formed from the closest environment for children, namely the family, where parents have an important role in instilling knowledge since the child can be invited to communicate. Teachers play an important role in the implementation of sex education which can be integrated with schools, and peers within the social sphere will provide information that can shape sexual knowledge in early childhood.

3) Culture

Cultural factors are factors that play a role in shaping sexual knowledge in early childhood. Parents and teachers provide an understanding of the values, morals, and culture that develop in the local area. Example: there are differences in views between

eastern culture and western culture. Western culture believes that sexual knowledge is a natural thing if it is developed from an early age and becomes very important. Eastern culture still has several countries that think that knowledge is taboo and should not be given from an early age because it will make young children have thoughts that are too mature. Some argue that sexual knowledge should be given when children are teenagers, at the time of puberty, because children are considered more prepared.

4) Availability Literacy

Sexual knowledge in early childhood is also influenced by the availability of appropriate literacy that contains information about sexuality. The development of the era demands literacy which is also growing regarding sexuality. Some forms of literacy that are commonly used are in the form of posters that make pictures and explanations about the body parts, and their functions, how to care for the body, parents, and teachers must provide proper literacy for early childhood so that children's sexual knowledge can be formed appropriately.

Volbert (2000); Kater & Baartman (2000); Savitri et al (2017) revealed that how people and teachers provide information about sexuality in early childhood also greatly influences early childhood sexual knowledge, this is also influenced by their perceptions of sexuality and abilities and skills in providing appropriate sexual knowledge. for early childhood.

Many perceptions form the rationale for providing sexual knowledge in early childhood, but parents and teachers must unify their perceptions before providing sexual knowledge in early childhood, which of course is adapted to the conditions of early childhood development.

Barimani et al., (2018) explain that knowledge of sexuality is influenced by 3 factors, namely:

- 1) Factors related to parents: gender, inadequate insight, high concern, doubt, shame, uncertainty, lack of education, knowledge from ineffective sources, perceptions about children and their role as parents, and perceptions about sexual education.
- 2) Teacher-related factors: gender, age, teaching experience, academic qualifications, area of residence, area of work, marital status, having children, religious practices, participation in educational training, inadequate knowledge, uncertainty in education provision, lack of comfort, shame, worry about parental attitudes and lack of access to educational resources.
- 3) Cultural and community-related factors:

Schonfeld et al., (2012); Sattayathewa et al., (2018) based on the results of their research stated that sexual knowledge in a child can be supported by providing an understanding of themselves and the environment, how they should interact with the environment and treat themselves and others. This understanding is given gradually to children through social-emotional learning which includes several things, namely: Self-awareness, Social Awareness, Relationship Skills, Self-management, and Responsible decision-making which will help children more easily understand themselves and their environment better, this was also revealed by Jones (2019) that social-emotional learning will make it easier for someone to absorb the information provided and form an understanding within themselves.

3. METHODOLOGY

3.1. Research Design

The research model uses the Second Order Structural Equation Model (SEM) as shown in Figure 3. In Figure 3 the educational game "let's take care of your body" consists of four exogenous variables, namely Body Anatomy (X1), Self-knowledge (X2), Ethics (X3), and Caring for the Body (X4) with an endogenous variable, namely the Sexual Knowledge Scale (Y).

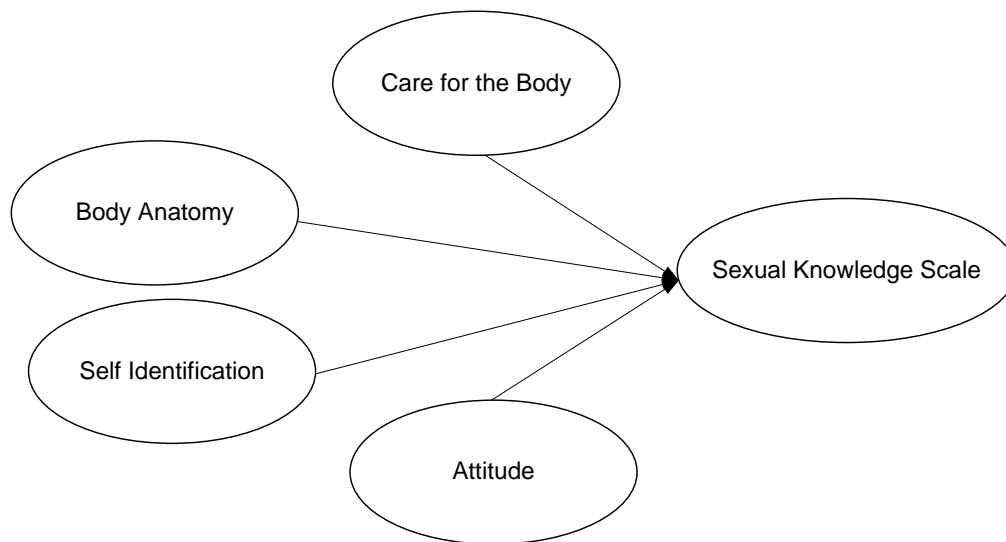


Figure 3: Research Framework

3.2. Samples and Data Collection

According to Solimun et al., (2018) the smallest element or unit means the unit where the data will be measured or researched can be an individual, group of people, organization, or region.

In this study the elements are individuals. A sample unit is a unit (consisting of one or more elements) that can be used as a basis for sampling.

The sample unit in this study was kindergarten children in Kepanjen City, Indonesia.

The population of this study was all kindergarten children in Kepanjen City, Indonesia.

Data was obtained through a questionnaire with a Likert scale. Variable measurement in primary data uses the average score of each item.

The sampling technique used is simple random sampling. Simple random sampling is a technique in which each item in the population has the same chance and probability of being selected. (Thompson, 2012).

The sample used was 100 Kindergarten (TK) children in Kepanjen City, Indonesia.

Variable measurements in this study used a questionnaire by applying a Likert Scale.

This scale model is generally used to measure respondents' attitudes, opinions, and perceptions of objects (Nazir & Afza, 2009).

The research instrument as shown in Table 1 consists of 26 questions that must be answered by respondents.

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Table 1: Variables and Instruments

Variable	Indicator	Variables are measured in questions
Body Anatomy	X1.1	Understanding of gender identity
	X1.2	Understanding of body parts
	X1.3	Understanding of the function of body parts
Introduction	X2.1	An understanding of the gender identity of others
	X2.2	Understanding of gender roles
	X2.3	An understanding of the parts of the body that can be touched and not touched by other people
Ethics	X3.1	An understanding of valuing and respecting oneself and others.
	X3.2	An understanding of behaving and speaking politely to others
	X3.3	An understanding of behavior and things that can harm your own body or others
Caring for the Body	X4.1	Understanding of keeping the body clean
	X4.2	Understanding of maintaining a healthy body

Source: Researcher

3.3. Analyzing Data

Modeling and data analysis in this study used the Second Order Confirmatory Factor Analysis (SEM) Structural Equation Model (SEM) method with SmartPLS.

The analysis prerequisite test uses a significance level of 0.05 (5%).

Second order CFA is a form of measurement model in SEM consisting of 2 levels which shows the relationship between latent variables at the first level as indicators of a second level latent variable (Dewi et al., 2015).

4. FINDINGS/RESULTS

4.1. Second Order SEM Test Results

The results of this study consisted of four exogenous variables, namely Body Anatomy (X1), Self-knowledge (X2), Ethics (X3), and Caring for the Body (X4) with an endogenous variable, namely the Sexual Knowledge Scale (Y).

After modeling using SmartPLS, the Second Order SEM model is obtained according to the predetermined variables presented in the following figure.

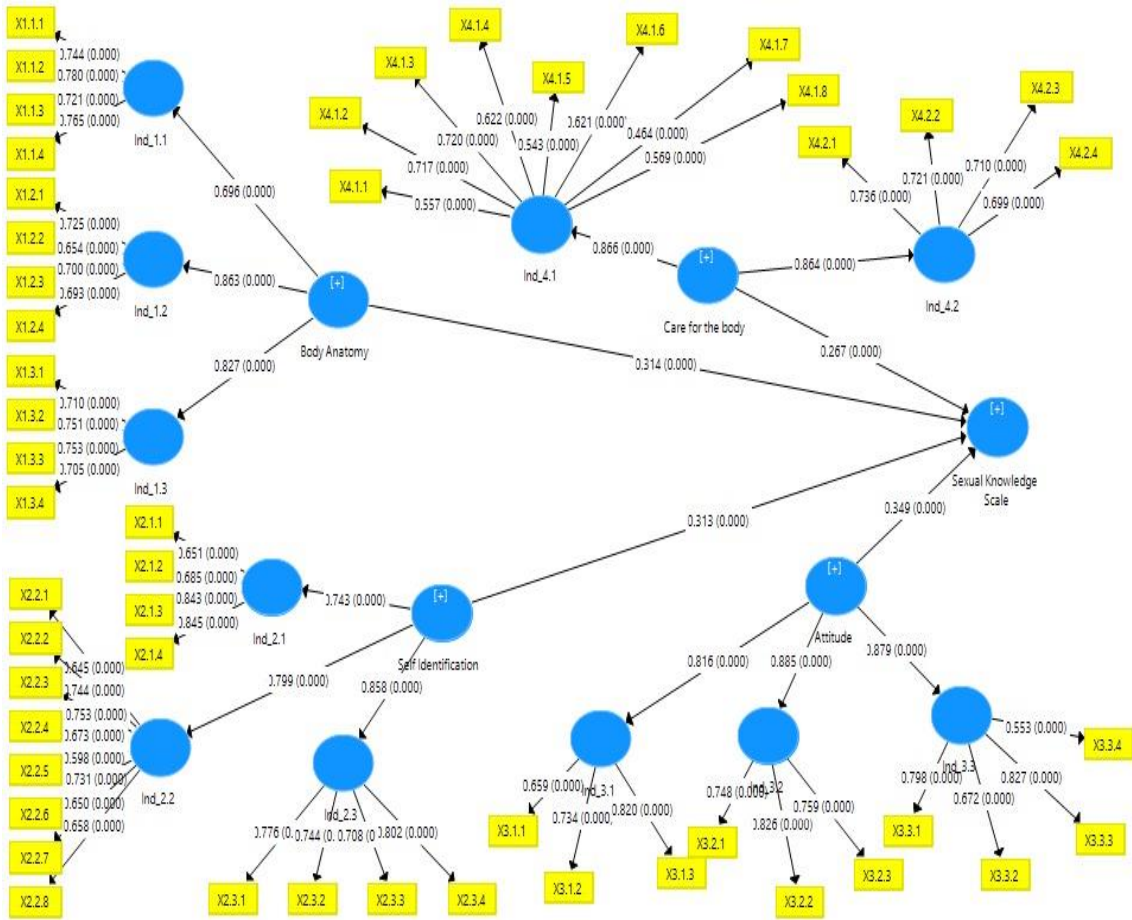


Figure 4: Second Order Chartered Financial Analyst Model

Table 2: Second Order Total Effect SEM Test Results

Connection	Coefficient	Standard Deviation (STDEV)	P Values
Body Anatomy -> X1.1	0.696	0.076	0.000
Body Anatomy -> X1.2	0.863	0.025	0.000
Body Anatomy -> X1.3	0.827	0.036	0.000
Body Anatomy -> Sexual Knowledge Scale	0.314	0.035	0.000
Ethics -> X3.1	0.816	0.068	0.000
Ethics -> X3.2	0.885	0.040	0.000
Ethics -> X3.3	0.879	0.030	0.000
Ethics -> Sexual Knowledge Scale	0.349	0.030	0.000
Caring for the Body -> X4.1	0.866	0.036	0.000
Caring for the Body -> X4.2	0.864	0.031	0.000
Caring for the Body -> Sexual Knowledge Scale	0.267	0.030	0.000
Self-Introduction -> X2.1	0.743	0.063	0.000
Self-Introduction -> X2.2	0.799	0.040	0.000
Self-Introduction -> X2.3	0.858	0.029	0.000
Self-Introduction -> Sexual Knowledge Scale	0.313	0.026	0.000

From the calculations of Table 2 and Figure 4, the estimated significance (p-value) is <0.05. Because all relationships have significant p-values, it can be said that the model is fit and can be analyzed.

4.2. Second Order Variable Measurement Model (Outer Model)

The variables in this study use a reflective indicator model and each variable is measured by several indicators and each indicator is measured by several items. Testing the reflective indicator model will obtain the outer loading value. The outer loading value shows the weight of each indicator as a measure of each latent variable.

The indicator with the largest outer loading shows that the indicator is the strongest (dominant) variable measurer. The results of testing the measurement model for each research variable are shown in Table 3 below:

Table 3: Second Order Measurement Results

Connection	Outer Loading	P Values
X1 <- Sexual Knowledge Scale	0.753	0.000
X1.1 <- Body Anatomy	0.703	0.000
X1.1.1 <- Eng_1.1	0.744	0.000
X1.1.2 <- Eng_1.1	0.780	0.000
X1.1.3 <- Eng_1.1	0.721	0.000
X1.1.4 <- Eng_1.1	0.765	0.000
X1.2 <- Body Anatomy	0.867	0.000
X1.2.1 <- Eng_1.2	0.725	0.000
X1.2.2 <- Eng_1.2	0.654	0.000
X1.2.3 <- Eng_1.2	0.700	0.000
X1.2.4 <- Eng_1.2	0.693	0.000
X1.3 <- Body Anatomy	0.828	0.000
X1.3.1 <- Eng_1.3	0.710	0.000
X1.3.2 <- Eng_1.3	0.751	0.000
X1.3.3 <- Eng_1.3	0.753	0.000
X1.3.4 <- Eng_1.3	0.705	0.000
X2 <- Sexual Knowledge Scale	0.799	0.000
X2.1 <- Self-Control	0.742	0.000
X2.1.1 <- Eng_2.1	0.651	0.000
X2.1.2 <- Eng_2.1	0.685	0.000
X2.1.3 <- Eng_2.1	0.843	0.000
X2.1.4 <- Eng_2.1	0.845	0.000
X2.2 <- Self-Control	0.782	0.000
X2.2.1 <- Eng_2.2	0.645	0.000
X2.2.2 <- Eng_2.2	0.744	0.000
X2.2.3 <- Eng_2.2	0.753	0.000
X2.2.4 <- Eng_2.2	0.673	0.000
X2.2.5 <- Eng_2.2	0.598	0.000
X2.2.6 <- Eng_2.2	0.731	0.000
X2.2.7 <- Eng_2.2	0.650	0.000
X2.2.8 <- Eng_2.2	0.658	0.000
X2.3 <- Self-Control	0.852	0.000
X2.3.1 <- Eng_2.3	0.776	0.000
X2.3.2 <- Eng_2.3	0.744	0.000
X2.3.3 <- Eng_2.3	0.708	0.000
X2.3.4 <- Eng_2.3	0.802	0.000
X3 <- Sexual Knowledge Scale	0.845	0.000
X3.1 <- Ethics	0.798	0.000
X3.1.1 <- Eng_3.1	0.659	0.000
X3.1.2 <- Eng_3.1	0.734	0.000
X3.1.3 <- Eng_3.1	0.820	0.000
X3.2 <- Ethics	0.883	0.000
X3.2.1 <- Eng_3.2	0.748	0.000

Connection	Outer Loading	P Values
X3.2.2 <- Eng_3.2	0.826	0.000
X3.2.3 <- Eng_3.2	0.759	0.000
X3.3 <- Ethics	0.876	0.000
X3.3.1 <- Eng_3.3	0.798	0.000
X3.3.2 <- Eng_3.3	0.672	0.000
X3.3.3 <- Eng_3.3	0.827	0.000
X3.3.4 <- Eng_3.3	0.553	0.000
X4 <- Sexual Knowledge Scale	0.720	0.000
X4.1 <- Caring for the Body	0.865	0.000
X4.1.1 <- Eng_4.1	0.557	0.000
X4.1.2 <- Eng_4.1	0.717	0.000
X4.1.3 <- Eng_4.1	0.720	0.000
X4.1.4 <- Eng_4.1	0.622	0.000
X4.1.5 <- Eng_4.1	0.543	0.000
X4.1.6 <- Eng_4.1	0.621	0.000
X4.1.7 <- Eng_4.1	0.464	0.000
X4.1.8 <- Eng_4.1	0.569	0.000
X4.2 <- Caring for the Body	0.858	0.000
X4.2.1 <- Eng_4.2	0.736	0.000
X4.2.2 <- Eng_4.2	0.721	0.000
X4.2.3 <- Eng_4.2	0.710	0.000
X4.2.4 <- Eng_4.2	0.699	0.000

Based on Table 3, the results of the second order measurement give significant results on all indicators and items that measure the variables of Body Anatomy (X1), Self-knowledge (X2), Ethics (X3), and Caring for the Body (X4) because of the p-value < 0, 05. In addition, the magnitude of the outer loading calculation results shows that the second indicator on the body anatomy variable, namely Understanding of Body Parts (X1.2) is the highest indicator with a value of 0.867. Thus it was concluded that the indicator of Understanding Body Parts (X1.2) is the most important indicator that influences body anatomy variables.

In the self-introduction variable, the results of the calculation of outer loading show that the third indicator, namely understanding of parts of the body that may be touched and not touched by others (X2.3), is the highest indicator with a value of 0.852. Thus it was concluded that the understanding indicator of the body parts that may be touched and may not be touched by other people (X2.3) is the most important indicator that influences the self-knowledge variable.

The ethical variable shows that the outer loading calculation value for the second indicator, namely Understanding of Behavior and Polite Speech to Others (X3.2) is the highest indicator with a value of 0.883. Thus it is concluded that the indicator of Understanding about Behaving and Speaking Politely to Others (X3.2) is the most important indicator that influences ethical variables.

Furthermore, for the variable caring for the body, it shows that the outer loading calculation value for the first indicator, namely Understanding about Maintaining Body Cleanliness (X4.1) is the highest indicator with a value of 0.865. Thus, it can be concluded that the Comprehension about Maintaining Body Hygiene indicator (X4.1) is the most important indicator that influences the variable of caring for the body.

4.3. Variable Second Order Structural Model (Inner Model)

Testing the structural model (inner model) refers to the relationship model between latent variables, some of which are recursive and not recursive.

The structural model presents the relationship between variables in a study.

The structural model coefficients state the magnitude of the relationship between one variable and another.

The significant influence between one variable on other variables, is marked if the p-value <0.05. The results of the direct influence are presented in Table 4.

Table 4: Results of the Direct Effect Test

Connection	Coefficient	P Values
Body Anatomy -> Sexual Knowledge Scale	0.314	0.000
Self-Introduction -> Sexual Knowledge Scale	0.313	0.000
Ethics -> Sexual Knowledge Scale	0.349	0.000
Caring for the Body -> Sexual Knowledge Scale	0.267	0.000

Based on the output of Table 3, it is found that the p-value is 0.000 for all relationships between variables.

Because p values < 0.05, there is a significant direct effect between variables.

The coefficients between variable relationships show that:

- 1) The body anatomy variable has a direct effect on the social knowledge scale with a path coefficient of 0.314. The path coefficient is positive, indicating that the more early childhood knows body anatomy, the better the sexual knowledge scale will be.
- 2) The self-knowledge variable directly influences the social knowledge scale with a path coefficient of 0.313. The path coefficient is positive, indicating that the better the early childhood self-knowledge, the better the social knowledge scale will be.
- 3) The ethical variable directly influences the social knowledge scale with a path coefficient of 0.349. The path coefficient is positive, indicating that the better the ethics of early childhood, the better the social knowledge scale will be.
- 4) The variable of caring for the body has a direct effect on the scale of social knowledge with a path coefficient of 0.267. The path coefficient is positive, indicating that the better the care for the body, the better the social knowledge scale will be.

4.4. Educational Games “Let’s Take Care of Your Body”

Zuhriyah & Ndari (2021) revealed that animated videos can help increase sexual knowledge in early childhood, of course, the material provided must be following the level of understanding of early childhood.

In this study, a digital-based measurement tool was developed, in the form of an educational game with the theme "let's take care of your body" which will be used to measure early childhood sexual knowledge, with material and scoring adapted to indicators of sexual knowledge in early childhood.

Here are some displays of educational games with the theme “let’s take care of your body”:

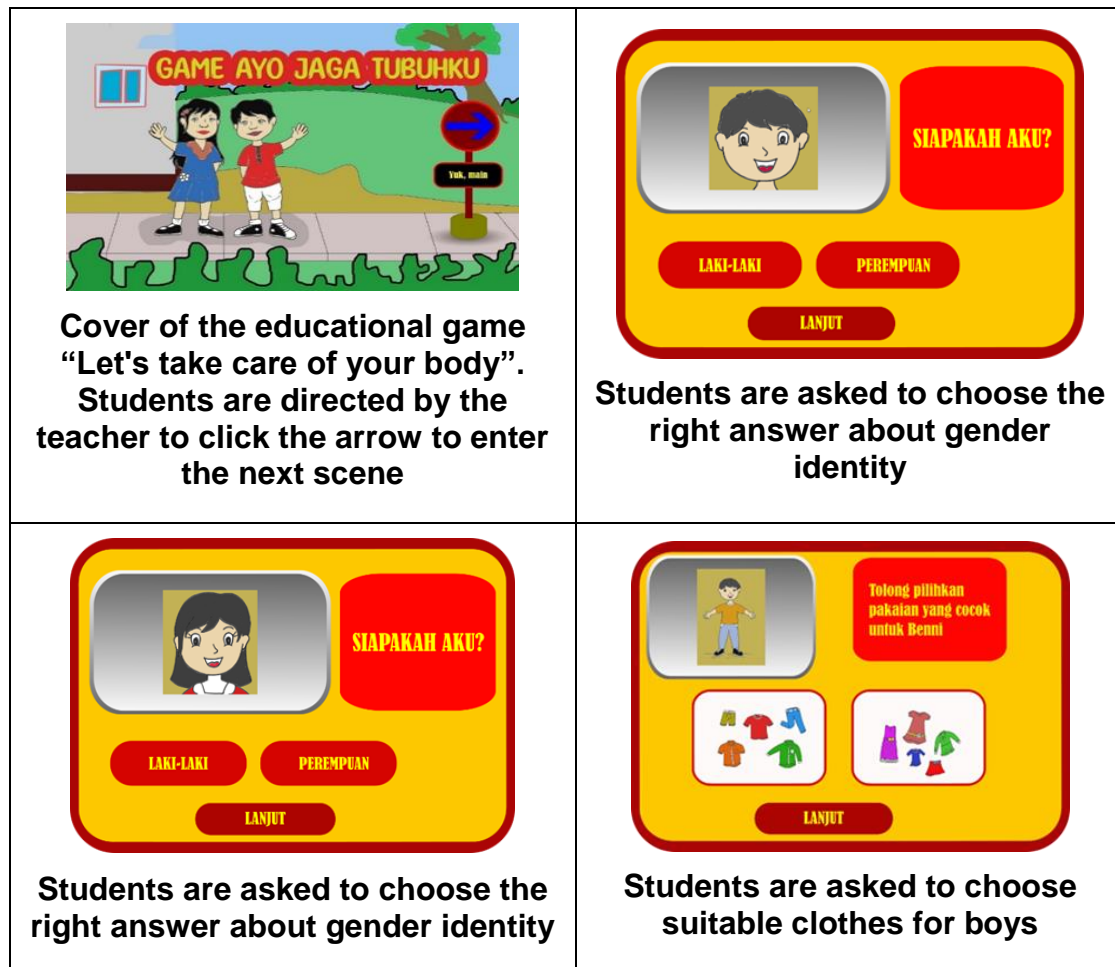


Figure 5: Educational Game “Let’s Take Care of Your Body”

5. DISCUSSION

Early childhood is a time when a child will develop all aspects of his development, one aspect of development that is of concern at this time is the sexual development within a child. Sexual development in a child will shape sexual knowledge in early childhood. Early childhood sexual knowledge can be seen from 4 indicators: body anatomy, self-knowledge, ethics, and taking care of the body.

Knowledge of sexuality in early childhood is an important thing that must be developed because it will influence behavior patterns and actions. Efforts to increase knowledge of sexuality can be carried out in various ways, through the educational process in the family by parents and also in learning settings at school.

This study tries to present the results of an assessment of the sexual knowledge scale game "Let's take care of your body" in terms of human-computer interaction technology users based on the technology acceptance model, where there are 4 variables and 11 indicators used in the questionnaire.

The calculation results show that each indicator in this study has a significant influence on knowledge of early childhood sexuality. The sexual knowledge scale game “let's take care of your body” has given a new color to early childhood learning.

Based on modeling using SmartPLS, the Second Order SEM model was obtained consisting of four exogenous variables, namely Body Anatomy (X1), Self-knowledge (X2), Ethics (X3), and Caring for the Body (X4) with an endogenous variable, namely the Sexual Knowledge Scale (Y).

The results of the estimation of significance (p-value) <0.05 , it can be said that the model used is a fit.

Furthermore, the most important indicators affecting each variable are Understanding of Body Parts (X1.2) which is the most important indicator affecting body anatomy variables with a value of 0.867.

Understanding of the Body Parts That can be touched and cannot be touched by Others (X2.3) with a value of 0.852 is the most important indicator that influences the self-knowledge variable. Understanding of Behaving and Saying Politely to Others (X3.2) is the most important indicator affecting the ethical variable with a value of 0.883 and Understanding of Maintaining Body Cleanliness (X4.1) with a value of 0.865 is the most important indicator affecting the variable of caring for the body. Testing the structural model (inner model) presents the relationship between variables in a study. The structural coefficient of the model states the magnitude of the relationship between one variable and another.

All relationships show significant results between one variable and another, marked by a p-value <0.05 . Based on the structural modeling of direct effect testing, it was found that the more early childhood knows body anatomy, the better self knowledge, the better ethics, and the better at caring for the body, the better the social knowledge scale will be. This is indicated by the positive path coefficient.

This finding is following research by Kakavoulis (2014) which states that there are several aspects in early childhood sexual development, namely

- (1) Anatomy of the body, including names and functions of body parts,
- (2) Self-introduction, including self-identity, gender identity, gender differences, physical characteristics,
- (3) Ethics, including values and gender roles, respecting and respecting oneself and others,
- (4) Caring for the body, including body hygiene and genital health.

The results of research by Kakavoulis (2014) stated that sexual knowledge is considered an important aspect in the psychological development and education of children as a whole, cultural influences distinguish the way society understands sexuality and sex education, and have an important place in human motivation.

In addition, early childhood must be valued and supported by all who provide care and education, be it, teachers or parents, for children before they are five years old. Therefore, it is suggested to (Indonesian Kindergarten Teachers Association) IGTKI and parents to teach the variables of body anatomy, self-control, ethics, and caring for the body so that they can increase the scale of digital-based sexual knowledge to a high level of understanding.

6. CONCLUSION

Based on the perception of ease of use and perceived usefulness, this educational game is quite feasible to be implemented and used according to the age of the character and the form of learning. The results of the analysis show that structural modeling using SmartPLS on the scale of game-based sexual knowledge "let's take care of your body" can be an innovation that can increase the scale of sexual knowledge in early childhood. This educational game can provide a more specific picture related to these indicators and it is easier for young children to understand the measurement process because it is adjusted to their level of understanding and the world of children is the world of play. An overview of sexual knowledge in early childhood is expected to be the basis for teachers and parents in efforts to increase sexual knowledge in early childhood.

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