

Education Model of Wise-Consumption for Elementary School

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ABSTRACT

Wise consumption can be defined as behavior in making use of all economic goods sparingly and not excessively. Wise consumption behavior is an implication of all activities including the action reflecting behavior that aims to prosper the future. This research aims to describe and formulate an education model of wise consumption for elementary school-age children. Furthermore, this research use DBR (Design-Based Research) model. The subject of this research was elementary school students in Blitar Regency, Indonesia, which amounted to 225 children, with a description; of 50 students as small group trials, and 175 students as field trials. The research findings show that 90% of students have been reached expected target of the study, and for the effective ability of the students; they are able to behave wisely in consumption. Behaviors that reflect wise consumption seen are 1) ability to sort priority scale, 2) ability to be economical, 3) ability to differentiate between need and desire and 4) productive behavior. The three findings have reflected how the education model able to give children a new perspective on the use of money.

Keywords: Wise Consumption, Elementary School Students, DBR, Effective Ability, Education Model

INTRODUCTION

Personality psychology defines wisdom as a description of actions, cognitions, emotions, and motivations which are considered relevant according to applicable moral standards (Fleeson et al., 2014). Wise refers to characteristic adaptation related to external identity that is different from character, which does not include moral motivation (Schnitker et al., 2019) explanatory styles (e.g. optimism. In the financial context, wisdom is a habit of using money properly (Lusardi, 2019; Rizkiwati et al., 2022), while extravagancy is an activity of excessive spending or without thinking about the future (Aristoteles, 1934; Grohmann et al., 2015).

Wise consumption can also be defined as behavior in using all economic goods sufficiently and not excessively (Podkalicka & Potts, 2014; Sa'adah et al., 2022). Wise consumption behavior is an implication of all activities including the action reflecting behavior that aims to prosper the future (Croce & Silvia Vaccarezza, 2017; Fleeson et al., 2014). Indicators of wise consumption behavior are; 1) children can sort Priority scale (Koeller, 2012), 2) children could be Economical in spending money, 3) children are able to Differentiate between Needs and Desires (Aflatoun & Unicef, 2012), 4) children are able to understand the importance of division of work, and 5) productive behavior.

In the 21st century, technology is developing very fast (Xiao, 2013). The development generates innovation in the education field. One of the teacher's choices to help the learning process about consumption habits is the use of learning videos like using the technology to produce animation effects in education. The use of technology in education will also affect the learning and learning environment. According to the research

(Baglama et al., 2018; Liu & Elms, 2019) it showed that animation usage in education shows a significant enhancement in the behavior and academic achievement of the students. The use of animation in education has had a lot of contribution in terms of attracting the students' attention rather than using conventional ways (Liu & Elms, 2019). Traditional or conventional method in education is less able to describe the goals which want to be achieved, while animation usage in education will make it easier to deliver the learning goals (Xiao, 2013).

The existence of animation in learning may make them proceed with the information more efficiently (Goff et al., 2017). The cognitive theory of Mayer concerning multimedia learning stated that multimedia-based learning is addictive; when the learning uses multimedia, the students will absorb the information better, because of the combination of verbal and visual, not only written (Wouters et al., 2008). Animation in teaching and learning can reduce boredom. Besides, animation can activate a sense of sight and hearing, and it can give

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examples through concrete things. The use of animation media can provide the students with higher interactive activities and also be able to stimulate conceptual thinking in which more than one sense is at work. The greater the number of senses involved in the learning situation, the better the learning activities will take place (Kwasu & EmaEma, 2015).

Moreover, the use of animated cartoons in learning can increase interest, motivation, and direct attention. Animated cartoon usage in learning will also create a positive impact. In addition, the use of animation can escalate understanding. They can learn through messages delivered in the story of an animated cartoon. The existence of a story within the animated cartoon will lead the students to act according to the characters that appeared in the animated cartoon. It has function as a behavior model which can be mimicked by the students (Banchonhattakit et al., 2012). The proper use of animation is the teacher's task where he will choose which animation is appropriate for students and what story or content is relevant to the learning material. It is also very important for teachers to develop the ability to create simple animations in order to control the content of learning videos.

METHOD

Research Design

The model of this research used DBR (Design-Based Research) from (Amiel & Reeves, 2008). DBR is a methodology designed by and for teachers which aims to increase the impact, transfer, and translation of educational research into better practice. DBR has to generate a deep understanding of both design and theory (Fig. 1).

The model of this research is DBR (Design-Based Research). DBR is a methodology designed by and for teachers which aims to increase the impact, transfer, and translation of educational research into better practice. DBR has to generate a deep understanding of both design and theory. The floating procedure in this study uses a model (Amiel & Reeves, 2008)

which consists of four phases. 1) Analysis of practical problems of wise consumption education for children, 2) Prototype development, and validation tests 3) Evaluation and testing of Quizizz prototypes and animation learning videos, 4) Documentation and improvement of Quizizz learning and animation learning videos.

Participants

The subject of the research is Elementary School students in Blitar Regency, East Java Province, Indonesia. The number of the students is 225 students with the following categories : 50 students as small group trials, and 175 students in field trials.

Data Collection Tools

Determination of product quality assessment developed by adapting (Akker et al., 2007) is validity, practicality, and effectiveness. Thus, relevant and mutually supportive theories are needed (Mustami et al., 2019). In addition, to find out the validity of a developed research instrument, it must be validated by a relevant expert, they are media experts and material experts. Both experts have the right to intervene and provide input for the development process of all aspects of the product as targeted. (not out of line which what has been designed).

The effectiveness of the learning developed is obtained from the implementation of learning series and learning tools. Both have been prepared for the learning process after the process of trial. Furthermore, the effectiveness developed from the positive impact for the students, which are learning activities, daily activities reflecting wise consumption behavior, cognitive ability of the students, and students' response during all of the learning activities series are noted.

FINDINGS

Identification Phase and Problem Analysis (Table 1)



Fig. 1: Models by (Amiel & Reeves, 2008)

Table 1: Economics Learning Condition in 3rd Grade of Elementary School

Component	Current Conditions
Learning Process	<ol style="list-style-type: none"> 1. Economics learning in elementary school does not stand alone; it is included in Social Science learning. Social Science learning is subjects given in the 4th grade consisting of History, Economics, and Geography. 2. 1st-3rd grade still uses thematic material.

Component	Current Conditions
Learning Process	<ol style="list-style-type: none"> 3. The learning process carried out in grade III uses learning methods such as lectures. However, it does not use the Quizizz application yet. It conducts hands-on learning. 4. Economics material only contains knowledge or theory. 5. Economic material is not what students experience in their daily life. 6. The teacher has not mastered the Quizizz application.
Student Behavior	<ol style="list-style-type: none"> 1. Most students are used to operating smart phones. 2. They are difficult to team up with other students. 3. They cannot do making a decision yet when they conduct a discussion in a group. 4. They are more consumptive. 5. They are not able yet to differentiate between needs and desires. 6. Most students use their free time to play. 7. They do not understand yet money allocation (Some of the pocket money they have will be used to buy snacks or toys).

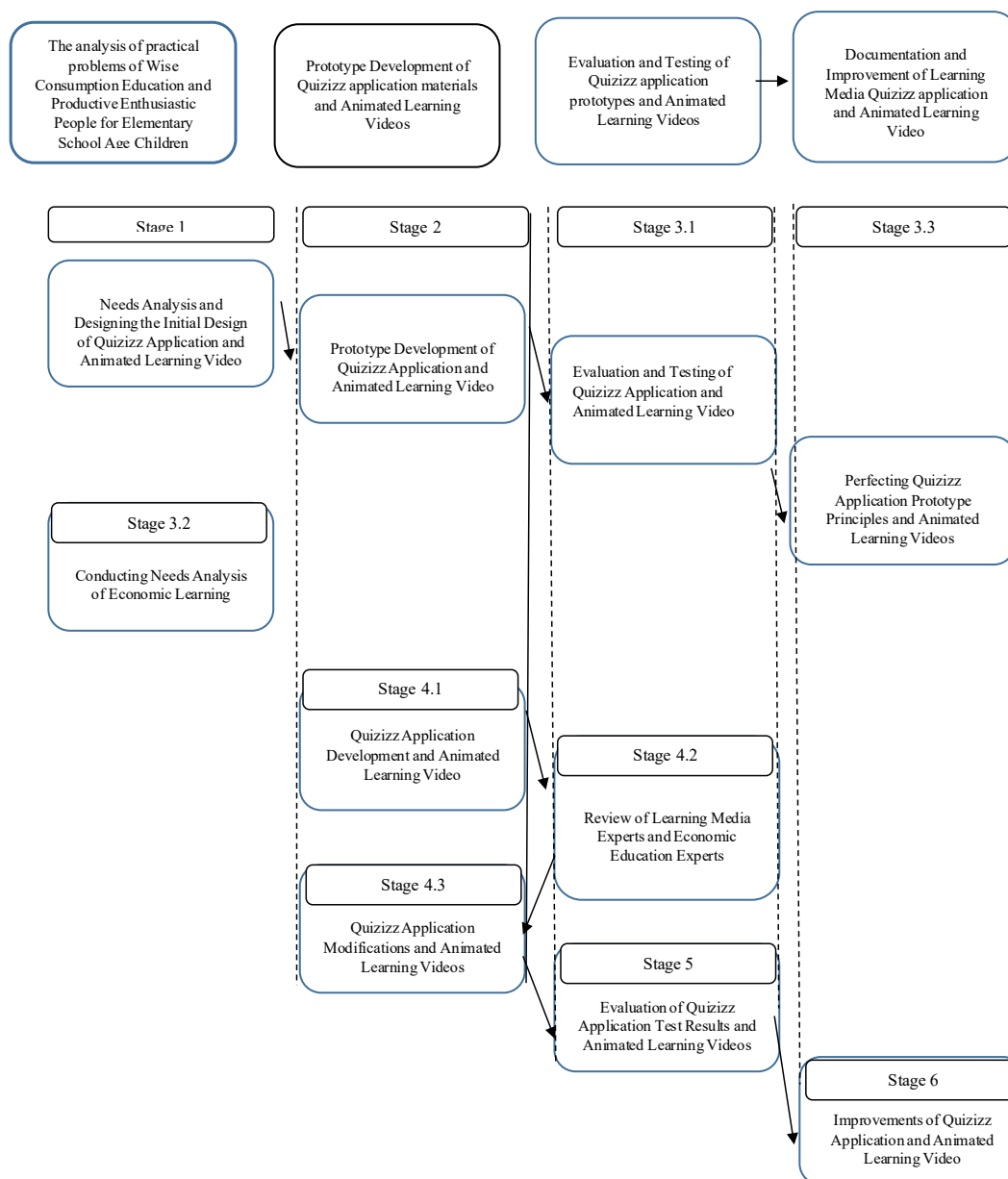


Fig. 2: Research and Development Flow (Amiel & Reeves, 2008)

The Phase of Testing and Completing the Prototype of Learning Development for Wise Consumption Education for Elementary School Students

The goal of testing is to study a description of the eligibility of the resulting product. The testing is conducted through 1) expert validation testing, 2) small group trial, and 3) extensive product trial. The questionnaire is used to find out validation tests for the resulting product. All learning devices which have been arranged will be validated by a media expert and material expert. A validation test aims to measure or assess the eligibility of the resulting product. The result of the validation test is used as a consideration to improve the resulting product.

Table 3 shows that according to the validation result of validator 1 as a media expert, the final score of validation is 70.4 and for the second validator the final score of validation is 73.6. In other words, the resulting product is valid or eligible to be tested in a small group (table 2). Besides, the validation result of validator 3 as a material expert of economic education shows that the validation product score is 91. The result of the score has been by the very valid criteria or it is very eligible to be tested (table 2).

Table 2: Criteria for Validity of Learning Model Products

Score	ScoringScale	Criteria	Qualification
4	81 % - 100 %	A	Very Valid/ Very Good
3	61 % - 80 %	B	Valid/ Eligible
2	41 % - 60 %	C	Less Valid / Less Eligible
1	0 % - 40 %	D	Invalid/Not Eligible

Table 3: The Result of Expert Validation Test toward Product Eligibility

Validator	Σ Item	Σ maximum Score	Σ Score Validator	Score	Criteria	Criteria
Validator 1 (Media Expert)	25	125	88	70.4	B	Valid/ Eligible
Validator 2 (Media Expert)	19	95	70	73.6	B	Valid/ Eligible
Validator 3 (Material Expert)	20	100	91	91	A	Very Valid/ Very Eligible

Source: The resulting data is processed by the researcher



Fig. 3: Documentation of small group trial

Small Group Trial Process

The implementation of a small group trial has the purpose to find out 1) the effectiveness of learning devices and wise consumption education implementation for elementary school students, 2) the success rate of Quizizz application usage in the learning process because Quizizz application is a new thing for elementary school students. A small group trial is conducted in the elementary school in the Kesamben district.

Observation Result of Teacher Activity (Small Group)

An observation sheet is used to assess the learning effectiveness during a small group trial. The score of learning result effectiveness of the small group can be seen in table 4 below. There are 4 times of assessments to be able to see the result of the teacher activity. Which, in each meeting, the assessed items are different. Thus, among the four assessments, the number of items is also different. For the first meeting, there are 22 assessment items, the second meeting is also 22 assessment items, while there are 21 assessment items for the third meeting, and the last meeting is 20 assessment items.

Based on Table 5 above, the final results obtained, It can be said that all meetings get very good criteria. In addition, based on the total result obtained, it can be concluded that teachers have been very good at managing the class and the developing learning steps of the product.

Students' Cognitive Ability Result of Small Group Trial

The result of learning in the form of student cognitive assessment is obtained from the results of answering quiz



Fig. 4: Documentation of Field Test Implementation

questions on the Quizizz application. There are 7 times to answer the questions; they are on Themes 2, 3, 4, 5, 6, 7, and 8. The cognitive assessment result of the small group trial can be seen in the table 7.

Based on Table 7 above, it shows that the final score of 7 quizzes is more than 80, so it is very good results. Hence, it can be concluded that the cognitive ability of the students, classically, in the learning activities can be considered a success if > 80% of students get a score above the average. Moreover, the use of the Quizizz application is very effective to improve the academic score of the students.

Field Trial

Observation Result

An observation sheet is used to check out the effectiveness level of learning which have been done by the teacher on the field trial. Observation is conducted at every meeting and during the learning process. The observation is carried out 7 times and undertaken by the homeroom teacher to assess the learning process which is being conducted by the researcher. The summary of the learning effectiveness result can be seen in Table 8.

Table 8 shows that the final score for every meeting is confirmed as very satisfactory. All final scores of the first meeting to the seventh meeting are above 90. It means that it is the criteria guidance that shows that the result is very good. Besides, teachers have been able to manage the class well, and all steps of the learning have also been conveyed well. In addition, the students follow the learning activity well. Thus, based on the obtained data, it can be concluded that the learning implementation of wise consumption education has been well and effectively applied.

Learning result of students' cognitive abilities

The result of students' cognitive ability is obtained from 1) the result of pre-test and post-test, 2) the result of 10 quizzes. Pre-test result is used to observe the initial ability of the students before taking a series of materials on wise consumption learning. There are 10 questions pre-test used to measure the cognitive ability of the students. Moreover, both pre-test and post-test use the same questions, so the result of the student's ability before and after they get treatment can be perceived. Below is the score of the student's cognitive.

Test results of paired sample T-Test show a significant number between pre-test and post-test with a significant score of (2-tailed) $P = 0.000, < 0.05$ (Table 10). Therefore, there is a significant difference between pre-test and post-test.

Other than pre-test and post-test, 10 quizzes have been undertaken by the students using the Quizizz application (Table 12). The average score for quizzes 1 to 10 can be seen in table 12 below. Based on the initial score criteria (table 6), the average final score of the students is above 90 for all quizzes which have been done. It indicates that the learning activity using the Quizizz application succeeds to improve the cognitive ability of the students.

Affective Assessment of the Students

Affective assessment of the students is conducted during cooking projects done by the students. In the last meeting, the students, together, do a learning of food or drink making project. Those activities are conducted to practice the learning themes which have been learned in one activity. The behavior score indication in making food or drink are; 1) sharing, 2) caring, 3) sorting of priority scale, 4) cooperating, 5) giving an example of work division, 6) behaving economical, 7) differentiating need and desire. Table 13 below is the conclusion result of attitude assessment data processing. The result shows that the average score of table 13 is 93.69, so it can be concluded that the result is within the very good criteria. Hence, all given materials have been able to show behavior by the expected indicator.

DISCUSSION

Development Process of Wise Consumption Product

According to Bloom cognitive ability is an ability relating to intellectual knowledge and skill (Fields, 2021). Based on the assessment result of the pre-test, it can be known that the completeness of the students is only 8%. The factors which

Table 4: Teacher Activity Criteria for Learning

Score	Scoring Scale	Score	Qualification
4	81 % - 100 %	A	Very Positive/ Very Good
3	61 % - 80 %	B	Positive/ Eligible
2	41 % - 60 %	C	Negative/ Not good
1	0 % - 40 %	D	Very negative/very bad

Table 5: Recapitulation of Teacher Activity Observation Results

Meeting	Σ Item	Σ Max Score	ΣScore Acquisition	ΣFinal Score	Score	Criteria
1	22	88	81	92	A	Very Positive/ Very Good
2	22	88	81	92	A	Very Positive/ Very Good
3	21	84	80	95	A	Very Positive/ Very Good
4	20	80	76	95	A	Very Positive/ Very Good

Source: Data is processed by the researcher

make the pre-test score low; first, students' knowledge of wise consumption material is still deficient, which will affect children's cognitive ability. As stated by (Maimon et al., 2016; Sit, 2015) that when children who rarely get educational stimulation (knowledge) or do not even get educational stimulation (knowledge), it can be ensured that their brain

develops smaller by 20-30% than the brain of the children in their age who get regular stimulation. The case will ultimately affect the level of children's intelligence. According to (Qudsyi, 2016), it needs an appropriate learning method in the learning process of children to get the optimal result. Moreover, education for children must be designed by paying attention to all aspects which can optimize the development of children. Every child has different potential in each form of development (Smith & Cowie, 2015). Thus, to optimize children's development, the appropriate facility must be provided, i.e. proper education.

Education patterns for elementary school-age children must be developed based on the natural learning ability of children. In other words, it should be by the principle of the

Table 6: Learning Effectiveness Criteria seen from Students' Cognitive Ability

Score	Scoring Scale	SCORE	Qualification
4	81-100	A	Very Good/ Very High
3	61 - 80	B	Good/ High
2	41 - 60	C	Sufficient
1	0 - 40	D	Very Bad

Table 7: Students' Cognitive Ability Result of Small Group Trial

Theme	N	Max Score	Total Score	Final Score	Score	Criteria
2	50	75	75	100	A	Very Positive/ Very Good
3	50	75	69	92	A	Very Positive/ Very Good
4	50	75	67	89	A	Very Positive/ Very Good
5	50	75	72	96	A	Very Positive/ Very Good
6	50	75	74	99	A	Very Positive/ Very Good
7	50	75	68	91	A	Very Positive/ Very Good
8	50	75	71	95	A	Very Positive/ Very Good

Source: The resulting data is processed by the researcher

Table 8: Observation Assessment Result of Teacher Activity in Class.

Meeting	Σ Item	Total Score	ΣScore	Final Score	Score	Criteria
1	22	88	81	92	A	Very positive/ very good
2	21	84	76	90	A	Very positive/ very good
3	22	88	82	93	A	Very positive/ very good
4	20	84	78	93	A	Very positive/ very good
5	22	88	82	93	A	Very positive/ very good
6	20	84	78	93	A	Very positive/ very good
7	18	72	67	93	A	Very positive/ very good

Source: The resulting data is processed by the researcher

Table 9: Paired Samples Statistics.

Paired Samples Statistics					
	Mean	N	Std. Deviation	Std. Error Mean	
Pair 1 Pre	41.37	175	13.534	1.023	
Post	82.63	175	14.541	1.099	

Table 10: Paired Samples Correlations.

Paired Samples Correlations				
		N	Correlation	Sig.
Pair 1	Pre & Post	175	0.481	0.000

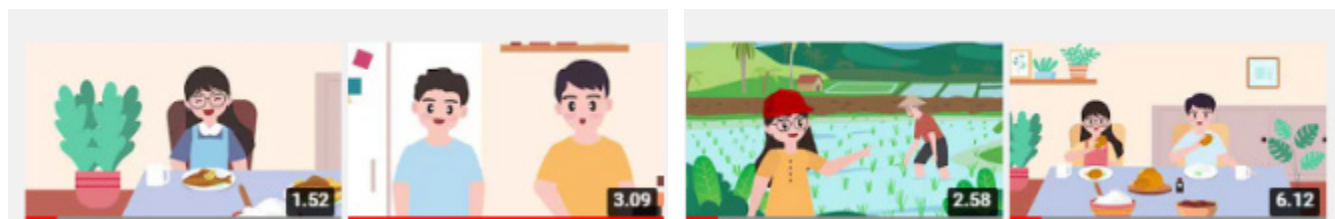
Table 11: Paired Samples Test.

Paired Samples Test									
Paired Differences									
95% Confidence Interval of the Difference									
	Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)	
Pair 1 Pre - Post	-41.257	14.329	1.083	-43.395	-39.119	-38.090	174	0.000	

Table 12: The results of students' cognitive scores in doing 10 quizzes in the Quizizz application

Meeting	N	Σ Questions	Max Score	Σ Score	Score	Score	Criteria
1	175	10	1750	1680	96	A	Very positive/ very good
2	175	10	1750	1722	98.4	A	Very positive/ very good
3	175	10	1750	1680	96	A	Very positive/ very good
4	175	10	1750	1610	92	A	Very positive/ very good
5	175	10	1750	1736	99.2	A	Very positive/ very good
6	175	10	1750	1666	95.2	A	Very positive/ very good
7	175	10	1750	1610	92	A	Very positive/ very good
8	175	10	1750	1666	95.2	A	Very positive/ very good
9	175	10	1750	1708	97.6	A	Very positive/ very good
10	175	10	1750	1624	92.8	A	Very positive/ very good

Source: Data is processed by the researcher

**Fig. 5:** Thumbnail of Quizizz Application**Fig. 6:** Thumbnail of Animated Video**Table 13:** The Affective Score of the Students

N	Σ Item	Total Score Max	Σ Total Score Max of Class	Σ Total Score of Class	Final Score	Score	Criteria
175 Students	7	28	4900	4591	93.69	A	Very Good

Source: Data is processed by the researcher

development of children's brain function. Besides, at the elementary age education stage, the learning process should be attractive, which can make children active, and creative, and give the impression of fun (Aisyah et al., 2019). The elementary age of children's life is very important and a foundation for determining further developments (Dalziel et al., 2015). (Kwasu & EmaEma, 2015) stated that the use of interactive media can stimulate conceptual thinking in which more than

one sense is working. The greater the number of senses involved in the learning situation, the better the learning activities will take place. In addition, the use of audio, text, multi-color picture, light motion, and other special effects will provide a remarkable chance for the students to develop. It will improve their ability to be innovative in thinking and practice.

Those two are two factors that cause the pre-test to score low. Therefore, interactive learning is designed using the

help of the Quizizz application, in which the application can design learning by collaborating the use of audio, text, picture, etc which can stimulate the students to learn. After undertaking the series of learning from Quizizz, the student's score from 10 quizzes and final score on the post-test show very good criteria. All students complete their learning. It is by (Anderson et al., 2016), stated that animation or interactive learning has been used for two purposes, they are: 1) explaining the basic concept, or 2) providing real-life context in applying existing knowledge. The use of digital equipment, such as animation or interactive learning, has changed the way education is delivered, especially in elementary school. Animated media or interactive learning usage can provide an entertainment element in the teaching and learning process. Furthermore, the use of interactive animated teaching materials can help to present the complex concept in a simple way to shape, create more interest in the subject, motivate students to learn better, improve message accuracy, and play an important role to improve the academic performance of students. Good animation or interactive learning can improve communication quality by emphasizing the specificity and accuracy of the message, and create a way for the integration of new information with prior knowledge of students (Shreesha & Tyagi, 2016).

Students who have high initial knowledge can determine the gap between internal and external information they have. Animation and animated learning can improve knowledge because animation is more interesting and credible. There are two reasons for animation usage as learning media, they are; 1) animation and animated learning are used as study companions that can be used as a virtual characters in the interactive narration, and 2) the use of animation and animated learning can produce interesting experiences, so the students are easier to understand what is being said, acted, and exemplified. Animation and animated learning can facilitate more learning by providing multiple perspectives on a complex concept. Animation pictures and animated learning can also lead the observer in practicing important aspects of the display, conveying procedural knowledge, demonstrating the dynamics of the subject matter, and enabling learning through the manipulation of objects displayed (Bétrancourt & Chassot, 2008; Shreesha & Tyagi, 2016).

The existence of animation in learning allows the students proceeding the information efficiently (Goff et al., 2017). The cognitive theory of Mayer about interactive learning stated that multimedia-based learning has an additive nature. Thus, when multimedia is used as learning media, the students will study better, in terms of absorbing information, because there is a combination of verbal and visual, not just in writing (Wouters et al., 2008). Moreover, animation in teaching and learning can relieve boredom. Animation can activate the sense of sight and hearing, and it can provide examples

through concrete things. The use of animated media can provide the students with higher interactive activity, and stimulate conceptual thought in which more than one sense is at work. The greater the number of senses involved in the learning situation, the better the learning activities will take place (Kwasu & EmaEma, 2015).

Interactive animation usage in the learning will also generate a positive impact. In addition, it can improve understanding. The students can learn through the messages delivered in the story of an animated cartoon (Banchonhattakit et al., 2012). The existence of a story within an animated cartoon will lead the students to act like the character that appeared in the animated cartoon (Liu & Elms, 2019). It has function as a behavior model which can be imitated by the students (Banchonhattakit et al., 2012).

Affective Assessment

Affective assessment is conducted through the project activity of making foods and drinks together. Affective assessment is part of behavior assessment (Adesoji, 2018). An effective assessment indicator is considered a success if there is a change in the student's behavior positively. The instrument of affective assessment is more complex and needs carefulness, thoroughness, and patience in doing the assessment. Hence, the teachers must do deep observation to find out the behavior change of the students.

Correspondingly, children aged 6-9 years can think about concrete situations or events. Children at those ages tend in learning, the characteristic of the tendency is; 1) concrete which contains some meaning that the learning process of the children is started from real or concrete things, so the children will get meaningful lessons and quickly absorb the knowledge when they experience events or see the real situation. 2) Integrative which means the students are not able to differentiate the concept of various knowledge yet, thus deductive learning is an appropriate way to teach children at those ages. 3) Hierarchy, is the way the students learn to develop gradually from simple things to complex things (Hakim, 2014), so the implementation of project-based learning is very suitable for training children to learn through a real examples.

The students are given 1 project to make food or drink according to the group agreement at the previous meeting which they must work on together. Based on the result of the activities which have been done, there are behavior changes both individually and in a group. It is shown by the criteria score of affective assessment showing a very good result. Besides, it indicates that the goals of the learning series have been achieved. Also, the indicators of behavior assessment are; 1) sharing; students give their foods to friends or other people who do not have same foods, 2) caring; students help their friends who need help, 3) sorting of priority scale;

students fulfill the needs of the group, not fulfill the needs of individuals, 4) cooperation; in group work all group members must be involved in doing the project, and no one is doing nothing, 5) giving examples of work division, students have already divided the work of each member to complete the project of making foods and drinks, so their tasks can be completed quickly, 6) behaving economical; in using needed things and equipment, every student must be able to save things or calculate how many items must be used, so there is no leftover and all items can be used properly, 7) differentiating needs and desires; when the students are asked to do making foods or drinks project, they must be able to determine what items are needed at the time of selection of raw materials, so it is not necessarily an individual desire.

Project activity is a series of events involving all students in the learning process. Moreover, experience is good education, accordingly, assimilation and accommodation process that can generate intellectual development from the activity will be occurred (Hergenhahn & Olson., 2012). For realizing good education, teachers need to apply basic theories such as constructivist theory which can allow the students to construct their knowledge. Constructivism in learning is a philosophy coming from an idea about the formation of individual knowledge which is the result of a process of experience (Berlia, 2011). Constructivist theory is a theory stated by Piaget, which this theory is based on the premise that learning action is based on the process which links the newest knowledge and the existing knowledge (Dennick, 2016).

Project-based learning is a comprehensive approach designed to bring the students in dealing with a problem (Blumenfeld et al., 2011). Project-based learning is learning focused on students and collaboration which are integrated with problems and real-world practice (Chiang & Lee, 2016). The research finding (Lattimer & Riordan, 2011) showed that project-based learning is an effective way of bringing and motivating the students to learn. Additionally, project-based learning is an innovation of the learning approach in the 21st century (Bell, 2010).

The positive effect obtained by the students after doing project-based learning is that they can improve positive behavior, which is having the ability to solve problems (Gülbahar & Tinmaz, 2014). Project-based learning is a strategy in the learning activity developed using constructivist learning which requires the students to construct their knowledge from the activities they have done. Further, project-based learning is contextual cooperative learning designed in five main phases, they are; 1) selecting, 2) project planning, 3) finding information regarding the project topic, 4) developing and performing the plan to complete the project, 5) representing and evaluating the project outcome and the effort of the students in solving the problem (Gai Mali, 2016).

CONCLUSION

Familiarizing children to use money well so that they have wise character in consuming can start from after elementary school or age 7 to 12 as the sample in this study. The school itself is the most ideal place to start the formation of this wise consumption character. One way is to provide an educational model. The right choice of learning for students of that age is learning using animation. This method was investigated using the method the model of this research used DBR (Design-Based Research) from (Amiel & Reeves, 2008).

Based on the overall result, it can be concluded that the use of animation as interactive teaching material can help provide simple complex concepts to shape, create more interest in the subject, motivate students to learn better, improve message accuracy, and play an important role to improve the academic performance of students. There are two reasons for animation usage as learning media, they are; 1) animation and animated learning are used as study companions that can be used as a virtual character in the interactive narration, and 2) the use of animation and animated learning can produce interesting experiences, so the students are easier to understand what is being said, acted, and exemplified.

REFERENCES

- Adesoji, A. (2018). Bloom Taxonomy Of Educational Objectives And The Modification Of Cognitive Levels. *Advances in Social Sciences Research Journal*, 5(5). <https://doi.org/Doi:10.14738/assrj.55.4233>.
- Aflatoun & Unicef. (2012). Child Social and Financial Education. In *United Nations Children's Fund (UNICEF)*.
- Aisyah, E. N., Iriyanto, T., Astuti, W., & Yafie, E. (2019). Pet as Stimulation Medium for Cognitive Ability of Early Childhood. *Jurnal Kajian Teknologi Pendidikan*, 2(3), 174–180.
- Akker, J. van den, Plomp, T., & Nieveen, N. (2007). *An Introduction to Educational Design Research* (T. Plomp & N. Nieveen (eds.)). Netzdruk, Enschede. https://ris.utwente.nl/ws/portalfiles/portal/14472302/Introduction_20to_20education_20design_20research.pdf
- Amiel, T., & Reeves, T. C. (2008). Design-based research and educational technology: Rethinking technology and the research agenda. *Educational Technology and Society*, 11(4), 29–40.
- Anderson, A., Furlonger, B., Moore, D. W., Sullivan, V. D., & White, M. P. (2016). A comparison of video modelling techniques to enhance social-communication skills of elementary school children. *International Journal of Educational Research*, 87, 100–109. <https://doi.org/10.1016/j.ijer.2016.05.016>
- Aristoteles. (1934). *Nicomachean ethics*. In *Harvard University Press*. <https://doi.org/10.4324/9781912281848>
- Baglama, B., Yucesoy, Y., & Yikmis, A. (2018). Using animation as a means of enhancing learning of individuals with special needs. *TEM Journal*, 7(3), 670–677. <https://doi.org/10.18421/TEM73-26>
- Banchonhattakit, P., Duangsong, R., Muangsom, N., Kamsong, T., & Phangwan, K. (2012). Effectiveness of brain-based

- learning and animated cartoons for enhancing healthy habits among school children in Khon Kaen, Thailand. *Asia-Pacific Journal of Public Health*, 27(2), NP2028–NP2039. <https://doi.org/10.1177/1010539512466425>
- Bell, S. (2010). Project-Based Learning for the 21st Century: Skills for the Future. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas*, 83(2), 39–43. <https://doi.org/10.1080/00098650903505415>
- Berlia, L. (2011). Constructivism in Learning of Science in Elementary School. *Cakrawala Pendidikan: Jurnal Ilmiah Pendidikan*, 30(3), 93.
- Bétrancourt, M., & Chassot, A. (2008). Making Sense of Animation. How Do Children Explore Multimedia Instruction? *Learning with Animation. Research Implications for Design*, 141–164.
- Blumenfeld, P. C., Soloway, E., Marx, R. W., Krajcik, J. S., Guzdial, M., & Palincsar, A. (2011). Motivating Project-Based Learning: Sustaining the Doing, Supporting the Learning. *Educational Psychologist*, 26(3–4), 369–398. <https://doi.org/10.1080/00461520.1991.9653139>
- Chiang, C. ., & Lee, H. (2016). The Effect of Project-Based Learning on Learning Motivation and Problem-Solving Ability of Vocational High School Students. *International Journal of Information and Education Technology*, 6(9), 709–712. <https://doi.org/10.7763/ijiet.2016.v6.779>
- Croce, M., & Silvia Vaccarezza, M. (2017). Educating through exemplars: Alternative paths to virtue. *Theory and Research in Education*, 15(1), 5–19. <https://doi.org/10.1177/1477878517695903>
- Dalziel, K. M., Halliday, D., & Segal, L. (2015). Assessment of the Cost-Benefit Literature on Early Childhood Education for Vulnerable Children. *SAGE Open*, 5(1), 215824401557163. <https://doi.org/10.1177/2158244015571637>
- Dennick, R. (2016). Constructivism: reflections on twenty five years teaching the constructivist approach in medical education. *International Journal of Medical Education*, 7, 200–205. <https://doi.org/10.5116/ijme.5763.de11>
- Fields, A. (2021). Adaptation in the face of adversity: Decrements and enhancements in children's cognitive control behavior following early caregiving instability. *Developmental Science*, 8(1).
- Fleeson, W., Furr, R. M., Jayawickreme, E., Meindl, P., & Helzer, E. G. (2014). Character: The Prospects for a Personality-Based Perspective on Morality. *Social and Personality Psychology Compass*, 8(4), 178–191. <https://doi.org/10.1111/spc3.12094>
- Gai Mali, Y. C. (2016). Project-Based Learning in Indonesian EFL Classrooms: from Theory to Practice. *IJEE (Indonesian Journal of English Education)*, 3(1), 89–105. <https://doi.org/10.15408/ijee.v3i1.2651>
- Goff, E. E., Reindl, K. M., Johnson, C., McClean, P., Offerdahl, E. G., Schroeder, N. L., & White, A. R. (2017). Efficacy of a meiosis learning module developed for the virtual cell animation collection. *CBE Life Sciences Education*, 16(1), 1–12. <https://doi.org/10.1187/cbe.16-03-0141>
- Grohmann, A., Kouwenberg, R., & Menkhoff, L. (2015). Childhood Roots of Financial Literacy. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.2664468>
- Gülbahar, Y., & Tinmaz, H. (2014). Implementing project-based learning and E-portfolio assessment in an undergraduate course. *Journal of Research on Technology in Education*, 38(3), 309–327. <https://doi.org/10.1080/15391523.2006.10782462>
- Hakim, I. N. (2014). Thematic-Integrative Learning of SD/MI in the 2013 Curriculum. *INSANIA : Journal of Alternative Thinking*, 19(1), 46–59. <https://doi.org/10.24090/insania.v19i1.463>
- Hergenhahn, B. R. & Olson, M. H. (2012). *Theories of Learning*. Kencana Prenada Media Group.
- Koeller, S. (2012). Economics Education Applied to Early Childhood. *Journal Childhood Education*, 57(5), 293–296. <https://doi.org/10.1080/00094056.1981.10520471>
- Kwasu, I. A., & EmaEma. (2015). Effectiveness of Animated Instructional Resource for Learning Facilitation Among Secondary School Student in Bauchi Nigeria. *Journal of Education And Practice*, 6(21), 113–120.
- Lattimer, H., & Riordan, R. (2011). Project-Based Learning Engages Students in Meaningful Work: Students at High Tech Middle Engage in Project-Based Learning. *Middle School Journal*, 43(2), 18–23. <https://doi.org/10.1080/00940771.2011.11461797>
- Liu, C., & Elms, P. (2019). Animating student engagement: The impacts of cartoon instructional videos on learning experience. *Research in Learning Technology*, 27(1063519), 1–31. <https://doi.org/10.25304/rlt.v27.2124>
- Lusardi, A. (2019). Financial literacy and the need for financial education: evidence and implications. *Swiss Journal of Economics and Statistics*, 155(1), 1–8. <https://doi.org/10.1186/s41937-019-0027-5>
- Maimon, E., Ismail, D., & Sitaresmi, M. N. (2016). Hubungan Mengikuti Kelompok Bermain dan Perkembangan Anak. *Sari Pediatri*, 15(4), 232. <https://doi.org/10.14238/sp15.4.2013.232-6>
- Mustami, M. K., Syamsudduha, S., Safei, & Ismail, M. I. (2019). Validity, practicality, and effectiveness development of biology textbooks integrated with augmented reality on high school students. *International Journal of Technology Enhanced Learning*, 11(2), 187–200. <https://doi.org/10.1504/IJTEL.2019.098789>
- Podkalicka, A., & Potts, J. (2014). Towards a general theory of thrift. *International Journal of Cultural Studies*, 17(3), 227–241. <https://doi.org/10.1177/1367877913496198>
- Qudsyi, H. (2016). Optimizing Early Childhood Education through Brain Development-Based Learning. *Jurnal Buletin Psikologi*, 18(2), 91–111. <https://doi.org/10.22146/bpsi.11540>
- Rizkiwati, B. Y., Widjaja, S. U. M., Haryono, A., Wahyono, H., & Majdi, M. Z. (2022). Financial Literacy Education Models for 7–12 Years Old Based on the Local Wisdom of Sasak Tribe Lombok Indonesia. *Pegem Egitim ve Ogretim Dergisi*, 12(2), 58–70. <https://doi.org/10.47750/pegegog.12.02.05>
- Sa'adah, S. R., Soetjipto, B. E., Tri, E., & Rudijanto, D. (2022). The Importance Of Wise-Consumption Internalization For Elementary School Children. *International Journal of Humanities Educational and Sciences (IJHES)*, 1(6), 843–856.
- Schnitker, S. A., Ratchford, J. L., & Lorona, R. T. (2019). How can joy escape jingle-jangle? Virtue and telos conceptualizations as alternative approaches to the scientific study of joy. *Journal of Positive Psychology*, 15(1), 44–48. <https://doi.org/10.1080/17439760.2019.1685572>
- Shreesha, M., & Tyagi, S. K. (2016). Does Animation Facilitate Better Learning in Primary Education? A Comparative Study of Three Different Subjects. *Creative Education*, 07(13), 1800–1809. <https://doi.org/10.4236/ce.2016.713183>
- Sit, M. (2015). *Psychology of Early childhood Development* (1st ed.). Perdana Publishing. file:///D:/0. KULIAH S3/SEMESTER 4/ DISERTASI/2/MENDELEY/sit2015.pdf

- Smith, P., & Cowie, H. (2015). *Understand children ' s early years education and development* (sixth). British Library.
- Wouters, P., Paas, F., & van Merriënboer, J. J. G. (2008). How to optimize learning from animated models: A review of guidelines based on cognitive load. *Review of Educational Research*, 78(3), 645–675. <https://doi.org/10.3102/0034654308320320>
- Xiao, L. (2013). Animation Trends in Education. *International Journal of Information and Education Technology*, 3(3), 286–289. <https://doi.org/10.7763/ijiet.2013.v3.282>