

# Teams Games Tournament Method in Improving Knowledge, Attitude, and Handwashing with Soap Practice on 3Th Grade Elementary School Students

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**Abstract**—Handwashing with Soap Practice can prevent diarrhea contagious. HWS should be taught to children through health education. Various methods can be used in health education such as preaching method that is tent to be passive in its activity. Teams Games Tournament bases on interesting game and it is most applied in formal education which is effective to improve learning result, as the result it will be applied in health promotion sector in elementary school. This research aims to know knowledge and practice improvements of HWS practice uses Teams Games Tournament Method on III grade students in SDN 016 Sungai Keledang Samarinda Seberang. Research method is quasi-experimental (non-equivalent control group pretest-posttest design). Total samples are 66 students, that is taken with total sampling which consist of III-A grade with total 33 students as experimental group and III-B grade with total 33 students as control group. Research result shows there are knowledge ( $p=0,043$ ) and HWS practice ( $p=0,000$ ) practices before and after TGT method is given on experimental group. Whereas, there are no knowledge ( $p=0,392$ ) and HWS practice ( $p=0,662$ ) improvements. There are differences between knowledge ( $p = 0,033$ ) and HWS practice ( $p=0,000$ ) improvements between experimental and control groups. Based on research result can be concluded that TGT method is effective to improve knowledge and HWS practice on III grade students in SDN 016 Sungai Keledang Samarinda Seberang. It is expected for health officer can apply and optimize TGT method as variational methods to give education in health promotion sector according to target characteristic.

**Keywords**—handwashing with soap, teams games tournament method, flashcard

## I. INTRODUCTION

The children spend a lot of their outside at the home such as school and go to play, with various environment conditions that can be the source of disease if it is not managed well because at that age children are susceptible with health issues. For the common diseases that can be experienced of scholl age children relate to healty and clean life behaviour, such as washing hands using soap is one way of prevent disease like diarrhea [1]

According to WHO date in 2017, every year diarrhea can kill around 525.000 toddlers and according of global almost 1,7 milliard cases of diarrhea kills the child every year. Based on data form Profil Kesehatan Indonesia in 2016 is estimated as many as 6.897.463 people with

3,4% CFR which it increased from 2015 with 2,47% CFR. East Borneo total of diarrhea sufferer in health facilities are estimated as many as 92.518 people but handled only 51.776 people (56,0%) [2]

Data form Dinas Kesehatan in Samarinda in 2017 noted amount of diarrhea case as much as 12.023 people where there was not decreased significantly from 2016, it is known case of diarrhea in that years as many as 12.056 people. In 2017 disease of diarrhea include in 10 largest disease data in Samarinda. Total sufferer with the most for ages of 5-14 years found on the working area of Puskesmas Baqa. 2017 years, case of diarrhea in Puskesmas was reach 698 sufferers with 196 sufferers that occurred to 5-14 years children. That age is elementary school years group [3]

One way to prevent and reduce diarrhea are by washing hands using soap. Based on the intervention type, washing hand effectiveness leve; with soap to lowering the number of diarrhea sufferer is 44% higher more than another intervention like uses the processed water 39%, sanitation 32%. Health education 28%, water supply 25%, and source of processed water 11%. Therefore washing hands use soap is intervention that is effective to prevent and reduce diarrhea [4]. Washing hands promoting it can reduce incident of diarrhea around 30% in center of child care in high income countries and in low income countries and middle income countries [5].

The Research of Riset Kesehatan Dasar in 2013, explain proportion of age population above 10 years that behave of washing hands well only 47% and in East Borneo only 53% [6]. The research of Unicef 2014 of Most society in Indonesia washes hands uses only water (93,6%) compared washing hands using a soap (66,0%). Most of society wash hands use a soap when their hands dirty is 70,9% whereas they use soap every washing hand are only 3,7%, likewise washing hands use a soap after defection 33,9% and before eating 34,1% [6].

In the school-age, children are agents of good behavior in the society or school in introducing and maintaining changes in environment. School is one of

the strategic efforts in the promotion of health that can help to improve the health of the students, teachers, employees, parents and the society around the school [7]

Health promotion in schools can be implemented using various methods and health promotion media. In this research uses *Teams Games Tournament (TGT)* method which is part in the cooperative learning model. This method is a method that used widely in the field of formal education and it was effective to improve outcomes learning of student [8]

The principle of learning while playing on children of primary age school is effective to create the student active atmosphere and fun in learning that will impact on changes in knowledge, attitudes and behavior. It will be created in the method of TGT which has 5 stages that explain materials, learning teams, games, tournament and reward. The game will be assisted with flashcard media which is designed by the researcher that contains 14 question cards, 14 answer cards, and 28 picture cards steps to washing hand. It is played by 3-4 people. This game informs you about the definition, the purpose, the benefits, and the steps of washing hand. This method will involve the children as peer tutoring, there are game, and the rewards, so the child can learn with a pleasant atmosphere, and to foster responsibility and cooperation within the group. The interactive which is given to students in learning can improve learning interests and facilitate the absorption of information.

SDN 016 Sungai Kaledang Samarinda Seberang is a school which is included in working area of Puskesmas Baqa Kelurahan Sungai Keledang which have the highest diarrhea disease among the subdistrict of the other with 246 people in 2016 and it increased in 2017 to be 287 people based on data from Puskesmas Baqa. From the results of the initial survey carried by the researchers in the past year has never to be done, health education activity about the CTPS. In addition, that school is not including the healthy schools, the implementation of the activities in UKS is not running optimally, the behavior of students who still do not wash their hands uses soap, as well as before the availability of health media promotion.

For the researchers interest to do research in SDN 016 Sungai Keledang, Samarinda Seberang. The purpose of this research is to determine the increase in knowledge and the practice Handwashing With Soap (HWS) using the method of Teams Games Tournament to student in III grade at SDN 016 Sungai Keledang, Samarinda Seberang.

### Cooperative Learning

The learning model is a conceptual framework based on systematic learning steps, as a reference or pattern that can be used to design learning in the classroom so that it can help students to actively learn and can improve learning outcomes [9]. One of the learning models is cooperative learning, namely a teaching model where grouping students into small groups, cooperate with each other and help one another to understand a learning material [10]. According to

Johnson and Johnson (1998) cooperative learning means "working together to accomplish goals" which is working together to achieve common goals. Cooperative learning has several methods, one of which is the Teams Games Tournament method [11].

### Teams Games Tournament Methods

The Teams Games Tournament method is a method where students are put into study groups of 4-5 people. This method has 5 stages in its implementation, namely class presentation, team learning, games, tournament, and reward / granting rewards [8]. One of the differences between this method and other cooperative learning methods is the presence of games or games played by students. The game in this study uses the help of flashcard media designed by researchers

### Flashcard Media

According to Basuki Wibawa and Farida Mukti flashcard usually contains words, pictures or combinations thereof [12]. According to Wasilah (2012) in Masturi et al, the media of picture cards is very good to arouse the spirit of student learning, train students' sensitivity to an object and stimulate imagination so that it is easy to recognize objects around them [13]. This media is made aiming to make it easier for students to understand the material and provide new experiences in learning. The flashcard contains 14 question cards, 14 answer cards, and 28 hand drawing wash cards. Cards measuring 9.5 x 12.5 cm for question and answer cards and 9.5 x 6.5 cm. This game will be played by 3-4 people. This game informs about understanding, goals, benefits, and steps for hand washing.

### Behaviour Domain

Forming a human behavior involves three main domains of behavior, namely knowledge, attitude and practice. The purpose of an education is to develop or improve the three domains of behavior, so that for the sake of the measurement results of these three domains are measured [14]. Knowledge is the result of an object from an object that can shape a person's attitude towards the object based on the knowledge that has been obtained [15]. The practice according to Skinner is the response or reaction of a person to an external stimulus.

### Cognitive Development

Age Primary school children already have intellectual abilities where they begin to develop the ability to think so that they can solve simple problems. Because elementary school age the power of thought has developed towards concrete and rational thinking. Piaget secured it as a period of concrete operation, the end of imaginary thinking and began to think concretely. This period occurs when the age of 6 or 7 years old enters primary school. So that at this age education can be given such as health education which can stimulate cognitive abilities to think related to health which ultimately can change the health behavior of students better [16].

## Hand Washing with Soap

The World Hand Washing with Soap Campaign or World Hand Washing with Soap Day (HCTPS) is a global campaign launched by the United Nations in collaboration with other organizations both government and private. This campaign is expected to encourage people to improve health practices in washing their hands with soap as an effort to reduce under-five mortality and prevent diseases that can affect the quality of human life. So that the habit of washing hands with soap needs to be instilled in children, one of them is elementary school children [17].

Hand washing with soap is one of the sanitation measures by cleaning the hands of the fingers using human water and soap to be clean and break the germ link [4] Washing hands with soap can kill germs, prevent transmission of diseases (diarrhea, worms, ARI, typhoid, and SARS), and make hands clean [18]

Handwashing with soap has 7 steps, including: 1) using enough soap, rubbing your palms, 2) rubbing both backs of your hands with fingers interlocking, 3) rubbing your palms together with fingers intertwined, 4) rub the back of the finger on the palm of the other hand with each other locking and interlocking, 5) rub the right thumb with the palm of the left hand holding in a way to rotate, and vice versa, 6) rub the left fingertip by tapping, rubbing, right and left in the palm of the right hand, and vice versa, 7) rub each wrist with the opposite hand and finally rinse the hand with running water and wring both hands using a dry towel or tissue. Kemenkes RI, recommends getting used to washing hands with soap before eating, after defecation, before preparing food, after playing, and after coughing and sneezing [19]. Center for Disease Control and Prevention recommends washing hands with soap before and after caring for someone who is sick, before and after treating wounds, after using the toilet, after touching animals, animal feed, or animal waste, and after touching waste [20].

This research is supported by several studies such as in the results of Salam et al, explaining that the Teams Games Tournament method is more effective than the lecture method for mathematics education ( $p = 0,000$ ) [21]. Research by Dinarto, the results obtained that the TGT type of cooperative learning model can increase student activity and learning outcomes in K3 subject, in the second cycle the activity of students reaches 100% success criteria and student learning outcomes show 75% of students complete the KKM [22]. From the results of these studies indicate that the TGT method is effective in improving student learning outcomes in the field of formal education. The researchers want to apply the TGT method in the field of health promotion as a way of health promotion to increase students' knowledge and ability to take health actions or practices.

## II. METHODS

The design of the research was Quasi-Experimental with the design of the non-equivalent control group pretest-posttest design. The population in

this study were all students of class III SDN 016 Keledang Samarinda Seberang River totaling 75 students consisting of two classes namely class III-A and III-B.

The sampling technique uses total sampling. The number of samples was 66 samples divided into two groups, namely 33 students of class III A as a control group and 33 students in class III B as the experimental group. The experimental group was the group given the Teams Games Tournament method while the control group was the group not given the Teams Games Tournament (TGT) method. The treatment given to the experimental group was carried out twice.

The implementation of the research includes the preparation and implementation stages. At the preparation stage, the management of permits, making research instruments, compiling material from the TGT method, making games (media flashcard), validating research instruments and validating the material and media used in the TGT method. The research instrument consisted of questionnaire sheets to measure knowledge and inert observation to measure the practice of CTPS. The instrument used was a combination of the instruments of previous studies which were modified and tested for validity and reliability at SDN 013 Sungai Keledang Samarinda Seberang. Besides the assessment of the TGT method related to the material and media used, the assessment is carried out by related experts in accordance with their fields. While the implementation phase consisted of measuring pre-test activities in both groups, implementing health education using the TGT method, and post-test measurements in both groups.

Data were analyzed by t test or Wilcoxon and Mann-Whitney as alternative tests with an error rate of 5%.

## III. RESULT AND DISCUSSION

Characteristics of Respondents Distribution of respondents by sex and age can be seen in the table below:

TABLE I. UNIVARIATE ANALYSIS BASED ON GENDER AND AGE RESPONDENTS IN EXPERIMENTAL AND CONTROL GROUPS IN CLASS III SDN 016 SUNGAI KELEDANG SAMARINDA STUDENTS

No	Karakteristik	Kelompok			
		Eksperimen		Kontrol	
		N	%	N	%
1.	Jenis Kelamin				
	a. Laki-laki	19	57,6	18	54,5
	b. Perempuan	14	42,4	15	45,5
	Jumlah	33	100,0	33	100,0
2.	Usia (tahun)				

a.	8	12	36,4	18	54,5
b.	9	21	63,6	15	45,5
<b>Jumlah</b>		33	100,0	33	100,0

Based on table 1, it is known that in the experimental group the number of respondents was 19 men (57.6%) and female sexes as many as 14 people (42.4%). Whereas in the control group respondents were male as many as 18 people (54.5%) and those of the female sex were 15 people (45.5%).

Based on the age of the respondents in this study, it was in the age range of 8 to 9 years in both the experimental group and the control group respondents. The 8 year old respondents in the experimental group were 12 people (36.4%) and the control group were 18 people (54.5%). 9-year-old respondents in the experimental group were 21 people (63.6%) and the control group were 15 people (45.5%). 10-year-old respondents in the experimental group.

Statistical results of differences in knowledge of Handwashing with Soap before and after in the experimental and control groups are shown in table 2:

TABLE II. PRETEST-POSTTEST IMPROVMENT KNOWLEDGE

No	Kelompok	Pengetahuan	N	Mean	Mean Different	P Value
1	Eksperimen	Pretest	33	56,16	-10,02	0,043
		Posttest	33	66,18		
2.	Kontrol	Pretest	33	59,19	3,5	0,392
		Posttest	33	55,69		

Table 2. shows that the experimental group, from 33 respondents observed, showed that the average knowledge before being given the TGT method was 56.16 and the average knowledge after being given the TGT method was 66.18. The average difference in knowledge before and after the TGT method was given at -10.02. The minus sign (-) means that the knowledge after being given the TGT method is greater than before the TGT method is given, which means that there is an increase in knowledge after the TGT method is given at 10.02. The results of statistical calculations using the Dependent T-test, obtained  $p$  value of 0.043 ( $p = 0,000 < 0.05$ ), can be concluded statistically there is an increase in knowledge before and after given the TGT method.

The control group that was not given the TGT method, the average value of knowledge before and after no change. The average results of prior knowledge were 59.19 while the average knowledge after that was 55.69 without being given the TGT method with an average difference of 3.5. The results of statistical calculations using the T-test obtained  $p$  value of 0.392 ( $p = 0.392 > 0.05$ ), so it was concluded that there was no increase in prior and seduah knowledge in the control group not given the TGT method.

Knowledge increase occurs after being given the TGT method about CTPS. the TGT method is a cooperative distribution model that focuses on students and instructors only as material presenters and directors. Having five predetermined stages and facilitating the delivery of health messages, namely the first stage of material delivery by researchers, the two students are formed into groups where students work together on Student Worksheets about CTPS given by researchers, third grouping each group representative into a table tournaments, there are academic tournaments, namely each group representative competes by playing a flashcard game, the five rewards, namely giving awards to groups that have collected the most points from the results of academic tournaments. Group learning that occurs in the second stage will affect students' cognitive. Students will help each other to be able to understand and solve the questions contained in the LKS. Learning is said to be incomplete if one of the friends in the group has not mastered the subject matter (Asmani, 2016) [10]. Vygotsky's theory of cognitive theory explains, collaborative activities or cooperation built by students will encourage cognitive development Slavin (2005) [8].

The accuracy of the selection of health education methods used in the experimental group with the aim of school children will affect the results achieved. The use of the TGT method provides a pleasant learning atmosphere and fosters enthusiasm for learning, this can be caused by a flashcard game. The games contained in the TGT method are characteristic of the method played by students during academic tournaments (Slavin, 2005) [8]. Academic tournament is a quiz or question designed in the form of a game with a scoring system derived from individual progress or in other words the results of discussion discussion will be determined at the tournament because each group representative will compete to donate points to win the game. So that the game becomes one of the factors students' knowledge about CTPS has increased after students listen to explanations about CTPS. Using interesting game methods with a pleasant atmosphere can make students more easily receive the information provided (Pratiwi, et al., 2015) [23].

Statistical results of differences in practice of Handwashing with Soap before and after in the experimental and control groups are shown in table 3:

TABLE III. PRETEST-POSTTEST IMPROVEMENT PRACTICE

No	Kelompok	Praktik	N	Mean	Mean Different	P Value
1	Eksperimen	Pretest	33	11,97	6,42	0,000
		Posttest	33	18,39		
2.	Kontrol	Pretest	33	11,88	0,12	0,662
		Posttest	33	12,00		



Table 3 shows that the experimental group, of the 33 respondents observed it was seen that the average practice of CTPS before given the TGT method was 11.97 and the average practice of CTPS after being given the TGT method was 18.39. The results of statistical calculations using the Wilcoxon test, obtained  $p$  value of 0,000 ( $p = 0,000 < 0,05$ ), it can be concluded statistically there is an increase in the practice of CTPS before and after the TGT method is given. Improved CTPS practice after being given the TGT method of 6.42.

The control group that was not given the TGT method, the results of the average CTPS practice before and after no change. The average results of CTPS practice before is 11.88 while the average practice of CTPS after is 12.00 without the TGT method with an average difference of 0.12. The results of statistical calculations using the Wilcoxon test obtained  $p$  value of 0.662 ( $p = 0.662 > 0.05$ ), so it was concluded that there was no increase in the practice of CTPS before and after the control group not given the TGT method.

The practice of CTPS in the experimental group before being given the TGT method about CTPS has a low average CTPS practice as well as the control group. But after being given health education about CTPS through the TGT method the average value of the practice of CTPS in the experimental group increased. This happens because a simple-designed flashcard game to be played at the tournament stage in the TGT method is one of the factors that causes changes in practice in respondents, where the game requires respondents to move and practice the steps to wash their hands directly by arranging cards with 7 pictures step of washing hands besides reading, listening, and seeing. Providing information with interesting delivery and a pleasant atmosphere can make respondents easier to receive information that has been given, noting that the target of health education is primary school age children who are 8-9 years old, so the use of the TGT method that has the game stage is one option the right in delivering health information in accordance with the stages of child development that are in the concrete operational stage. Piaget's theory explains that the age of 7-11 years is an age at a concrete operational stage, at this stage the child in the application of learning must be given concrete or real examples because the child cannot imagine important steps such as completing algebraic statements that are too abstract for children, so it takes an example or display that is real so that children are easy to understand (Santrock, 2007) [24]. This research is supported by the research of Ishak and Ramdhani in the field of formal education, stating that the TGT method has a significant influence on the skills of lower passing in volleyball games, with a significant 0,000  $< 0.05$  and the results of the difference test averages obtained = 9.27  $> t$  table = 1.69. In this study explained that each student is assigned to study the material first with its members, and then students are tested individually through academic games.

Flashcard is a medium that is used as a play tool by students, has a design that contains images and sentences in the form of questions and answers. Flashcard contains material about hand washing, namely understanding, purpose, benefits, important times, and steps to wash hands with soap. The advantages of this game with flashcard media include making it easier to convey material, attract students' attention, and help students to quickly understand the material that has been previously delivered so that with the help of flashcard media in effective games to use. Fun games will be easily accepted by students. Feelings of pleasure, passion, enthusiasm or curiosity will affect individuals to learning activities, so that an effective learning process is a fun or conducive learning situation (Joseph, 2009). This is in line with the results of previous studies which stated that educational game methods can improve and enhance respondents' actions about prevention of diarrheal diseases (Pratiwi et al., 2015) [23].

Based on the results of statistical test using the Independent sampel T Test, it can be seen the comparison of the average knowledge of the experimental group and the control groups are shown in table 4:

TABLE IV. THE AVERAGE DIFERENCE OF KNOWLEDGE

No	Kelompok	N	Mean	P Value
1.	Eksperimen	33	66,18	0,033
2.	Kontrol	33	55,69	

The results of statistical tests using the independent T-test to determine differences in the level of knowledge between the experimental group and the control group at posttest showed that the group of students given the TGT method had an average knowledge of 66.18. While groups of students who were not given the TGT method had a lower average knowledge of 55.69. From the results of statistical tests it can be concluded that there is a difference in the increase in significant CTPS knowledge between groups of students given the TGT method and groups of students who are not given the TGT method with a value of  $p$  value of 0.033 ( $p = 0.033 < 0.05$ )

The TGT method applied in health education invites students to interact actively and positively in groups. Group learning will affect cognitive change. In this method, students have the opportunity to exchange ideas with other students in the group. According to Piaget in Rusman (2013), learning is an active process and knowledge is arranged in the minds of students, where a concept of thought and impression is formed by thinking about objects and reacting to those events. Then an education, should be able to condition and be able to provide encouragement to be able to optimize and generate the potential and enthusiasm of students so that they will realize the desired learning process that is all participants actively involved in these activities. The TGT method which consists of 5 stages of

complementarity results in students being able to play an active role in their learning activities because they invite students to work together and discuss with each other in their groups and arouse the enthusiasm of each group member to compete in an academic tournament.

Children aged 7-11 years is the age at which children are in elementary school in cognitive development based on Piaget's theory called concrete operational stages (Santrock, 2007) [24]. At that age children can carry out learning tasks that demand intellectual abilities or cognitive abilities, besides having the ability to solve simple problems. So that it is enough to be the basis for the provision of skills that can develop mindset or reasoning power (Yusuf, 2009) [16]. Piaget's theory explains knowledge, values, rules, morality can only be learned in interaction with others. So if children interact like discussing with other people both peers or more adults can develop the child's cognitive because of the socio-cognitive conflict that arises due to the interaction becomes a driver of change in children where they try to rethink their understanding of a problem and reconstruct understanding new, more suitable and acceptable (Huda, 2012) [11].

The TGT method is basically a learning model that is formed from several small groups that work together, discuss and help each other in understanding the subject matter to achieve group goals, so that it will have an impact on student learning outcomes. With the stages of discussion in small groups contained in the TGT method, it becomes one of the factors that can affect students' knowledge, because in the discussion each group member expresses his opinion and exchanges ideas. Suyono (2011) [25], explained that in learning activities, children should be given the opportunity to talk to each other and discuss with their friends. This will affect children's cognitive development. Tarigan (2008) [26], explains speaking is a communication process to express, convey ideas, thoughts, ideas to others using spoken language that can be understood by others (listeners / listeners). Discussing is one way for students to share ideas and exchange ideas. In essence the discussion is a method for solving problems with group thinking processes.

Increased knowledge occurs not separated from the learning experience gained by students. From the learning experience, it will make it easier for students to understand the material provided. The learning process can run well and achieve the desired results if students can use all their sensory tools. The more sensory devices used to guess and process information the more likely that information is understood and can be maintained (Arsyad, 2015) [27]. In the TGT method provides learning experiences to students where students can listen to the material presented by researchers, see pictures and videos on the media used, discuss with group friends, try flashcard games and practice the steps of hand washing.

Based on the results of statistical test using the Mann-Whitney, it can be seen the comparison of the

average practice of the experimental group and the control groups are shown in table 5:

TABLE V. THE AVERAGE DIFFERENCE OF PRACTICE

No	Kelompok	N	Mean	P Value
1.	Eksperimen	33	46,38	0,000
2.	Kontrol	33	20,62	

The results of the statistical test using the Mann Whitney test to determine the difference in the level of practice of CTPS between the experimental group and the control group at the posttest showed that the group of students given the TGT method had an average knowledge of 46.38. While groups of students who were not given the TGT method had a lower average CTPS practice of 20.62. From the results of statistical tests it can be concluded that there is a difference in the increase in the practice of CTPS which is significant between groups of students given the TGT method and groups of students who are not given the TGT method with a value of  $p$  value of 0,000 ( $p = 0,000 < 0,05$ ).

A simple designed flashcard game to be played in the tournament stage is one of the factors that causes a change of practice in the respondent, where the game requires the respondent to move and practice the steps to wash hands directly by arranging a 7-step hand washing card besides reading, listening, and see. Giving information with interesting delivery and pleasant atmosphere can make respondents more easily receive information that has been given. Knowing the goal of health education is that primary school age children are predominantly aged 8-9 years, then the use of the TGT method which has a stage of play is one of the right choices in delivering health information in accordance with the stages of child development in the concrete operational stage. Piaget's theory explains that the age of 7-11 years is an age at a concrete operational stage, at this stage the child in the application of learning must be given concrete or real examples because the child cannot imagine important steps such as completing algebraic statements that are too abstract for children, so it takes an example or display that is real so that children are easy to understand (Santrock, 2007) [24].

The results of this study are supported by previous research conducted in the field of formal education, such as the research of Ishak and Ramdhani, stating that the TGT method has a significant influence on the skills of lower passing in volleyball games, seen from a significant  $0,000 < 0,05$  and difference test results obtained  $t_{hitung} = 9.27 > t_{table} = 1.69$ . Each student is assigned to study the material first with the members, then they are tested individually through academic games.

Flashcard is a medium that is used as a play tool by students, has a design that contains images and sentences in the form of questions and answers. Flashcard contains material about hand washing,

namely understanding, purpose, benefits, important times, and steps to wash hands with soap. The advantages of this game with flashcard media include making it easier to convey material, attract students' attention, and help students to quickly understand the material that has been previously delivered so that with the help of flashcard media in effective games to use. Fun games will be easily accepted by students. Feelings of pleasure, passion, enthusiasm or curiosity will affect individuals to learning activities, so that an effective learning process is a fun or conducive learning situation (Joseph, 2009). This is in line with the results of previous studies which stated that educational game methods can improve and enhance respondents' actions about prevention of diarrheal diseases (Pratiwi et al., 2015) [23].

In addition, this game also has a simple design so that it can be easily played by students even though at first time the child plays it a little confusing because of the limited time in explaining the game system but during the time students can play the game independently. Based on observations of researchers in the health education process using the TGT method, students were more enthusiastic and active during the activity. This can be seen during the activity, students cannot wait to play after being given flash card and explained how to play students immediately play the game together with their friends they are competing to be able to answer questions that have been chosen by their friends as the first reader in the game that is.

#### IV. CONCLUSION

1. There was an increase in knowledge of Hand Washing with Soap (CTPS) before and after the group of students who were given the TGT method at SDN 016 Keledang Samarinda Seberang River, indicated by the T-test results obtained  $p$  value  $<0.043$ . Increased knowledge after being given the TGT method of 10.02.
2. There is no increase in knowledge of Hand Washing with Soap (CTPS) before and after the group of students who were not given the TGT method at SDN 016 Keledang Samarinda Seberang River, indicated by the T-test results obtained  $p$  value  $>0.392$ .
3. There is a difference in the increase in knowledge of significant handwashing with soap between the groups given the TGT method and the group not given the TGT method, indicated by the value of  $p$  value is 0.033 ( $p = 0.033 < 0.05$ ). The group given the TGT method had a higher average knowledge of CTPS (66.18) compared to the average knowledge in the group not given the TGT method (55.69)
4. There was an increase in Hand Washing with Soap (CTPS) practices before and after the group of students who were given the TGT method at SDN 016 Keledang Samarinda Seberang River, indicated by the T-test results obtained  $p$  value  $<0.000$ . Increased knowledge after being given the TGT method of 6.42
5. There is no increase in the practice of Hand Washing with Soap (CTPS) before and after the group of students who were not given the TGT method at SDN 016 Keledang Samarinda Seberang River, indicated by the T-test results obtained  $p$  value  $>0.662$
6. There is a difference in the increase in significant Hand Washing with Soap practices between groups given the TGT method and the group that is not given the TGT method, indicated by the value of  $p$  value is 0,000 ( $p = 0,000 < 0,05$ ). The group given the TGT method had a higher average knowledge of CTPS (46.38) compared to the average knowledge in the group not given the TGT method (20.62)
7. The Teams Games Tournament (TGT) method has an effect in increasing the knowledge and practice of Hand Washing with Soap (CTPS) in third grade students at SDN 016 Sungai Keledang Samarinda Seberang

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