



# IJESSR

Indonesian Journal of Education, Social  
Sciences and Research

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VOLUME 2 ISSUE 1  
MARCH 2021

# Table of contents

<b><u>ENRICHING LOCAL CULTURES THROUGH JAVA CULTURE MISSION LEADING TO SOCIAL INTEGRATED IN TRANSMIGRATION REGION OF TAPUNG KAMPAR RIAU ( An Anthropology Study to Ocu People Cultures)</u></b>	<a href="#">PDF</a>
<i>Syafrizal Syafrizal</i>	121-130
<b><u>LAW OF WARRANTY OF HALAL PRODUCTS AS A PROTECTION OF MUSLIM CONSUMERS IN INDONESIA</u></b>	<a href="#">PDF</a>
<i>Nurul Hakim</i>	131-137
<b><u>Prioritizing Higher Order Thinking Skills (HOTS) Based on the 2013 Curriculum on Language Learning Evaluation at the Tertiary Level Education in Indonesia</u></b>	<a href="#">PDF</a>
<i>Neni Afrida Sari Harahap, Muhammad Natsir</i>	138-146
<b><u>Vector Analysis of the Prayer Movement on Health Using Visual Media Multimedia Application Development Life Cycle</u></b>	<a href="#">PDF</a>
<i>Indah Purnama Sari, Aulia Jannah, Abdillah Syahputra, Rivaldi Tanjung</i>	147-157
<b><u>An Integrated Information System Design for Managing National Hazardous Waste in Indonesia: A Proposal</u></b>	<a href="#">PDF</a>
<i>Ashari Imamuddin</i>	158-164
<b><u>Application Design to Calculate Employee Salary In Truth And Calculus Table Learning</u></b>	<a href="#">PDF</a>
<i>Fanny Ramadhani, Dimas Prayoga, Ravindra Singh, Dina Aulia, Ayu Sekar</i>	165-169
<b><u>The Effect of Using Flashcard Improving Students' Speaking Achievement Through Drilling Technique</u></b>	<a href="#">PDF</a>
<i>Resty Wahyuni, Nindi Vourezky</i>	170-173

## Enriching Local Cultures Through Java Culture Mission Leading to Social Integrated in Transmigration Region of Tapung Kampar Riau (An Anthropology Study to Ocu People Cultures)

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### ABSTRACT

This study is aimed at exploring a social issues related to enriching local cultures through cultural mission of Java leading to social integrated on transmigration region of Tapung Kampar Riau. This matter is an empirically research as one of important issues for having recommendation in dealing with emerging one's thinking sense to sharpen among the sides. It is noted that transmigration issue is not primary to this study, although transmigration issue must be never neglected, since in this line of program found migration of human from Java people with cultures in huge from Java island into Tapung Kampar Riau. It is truly, human and cultures is something unseperatable at once. By migration of human, it means also migration of cultures as civilization order to the human itself. This study is conducted in qualitative approach. In collecting the data, perhaps done by interview in depth to many informants adopted bases to their capability, expert, figure in public as well as. This study was completed in Kecamatan Tapung Kabupaten Kampar Propinsi Riau, for more than 6 months in execution. Still, make certain analysis, by this research found an enriching local cultures found on Ocu people community through own culture mission of Java leading to a social integrated community mainly around transmigration region where Ocu people live of Tapung Kampar Riau. This matter has been proved with manifested acculturation of both culture on this region either viewed from cultural, sense of feeling, and sensitivity with sense of touch to food and meal, and also in choosing wear of cultural dress, clothes and uniform among the people.

**Keyword:** *Local cultural, Mission in culture, social integrated*

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## 1. INTRODUCTION

It is noted that public interest index to a phenomenon in reality determined in how far the phenomenon public respond on it regardless the respond itself referred to individual, group or not refer to. In addition, public participation submitted as respond at once possibly a terminology to insist that phenomenon is important too for it concern to public interesst. Cristian, P (1996) confirmed one of matters cause an issue or phenomenon may get attention or public respond (mass) if any phenomenon in appearance impacting to change of interest over the public for future.

In referring with public interest, Isdayanti (2016) insisted that existence of a nation is for public interest, and law is mian device to realize the goal. One of primary issues usually urged in past time ago is how to define the public interest. According to Huybers (1982), a public interest in whole having own certain characters perhaps regarding to all public facility in life with civilization going on. By John Salindeho (Oloan Sitorus Dan Dayat Limbong, (2004), in simply reviwed a public interest can be

mentioned as necessity, need or public interest for social meaning. Still, Reli Jevon Laike (2018), the public interest is mandated to state or nation and for togetherness interest on people ruled in regulations.

One of issues regarding to public interest related with this study is transmigration issue. For public interest then transmigration has already got differently arguments from public as well as. But, in this study is not main topic to provide. The main issue to focus in this study is about aspect of transmigration in a context to enrich local culture through a Java culture mission lead to a social integration in transmigration area of Tapung Kampar Riau. The existence of Java community with own culture, traditions inherent to those transmigrant now live permanent to community of Ocu, and this transmigrant as community obliged to make contact by culture.

As a community group with a huge mass quantitatively and qualitative, it is noted that Java people comprihensed as superior community in this country if compared to Ocu people community. According to Hasan Mat Nor (2000) insisted that Java people be superior because it is huge, however seen also with superior power as well. While, Ocu people community seen inferior due to its number not large, even its power they hold bit more little. Regardless of it, this study is to know more about the existence truly applied to enrich local culture through Java culture mission lead to a social integration tran area Tapung Kampar Riau, by culture contact.

## 2. LITERATURE STUDY

The transmigration has presented Java people as community over around Ocu community, this urged them to bind cultural contact both continuously for long time to go. As predicted, it may get process to know own culture values newly each other, even there to push acceptable values process each other. In order to interpret more to this study, in this matter is recommended some concepts or any relevant meaning, as followings :

### 1. Local Culture Concept

It is seen a bit difficult to reveal the different principally between local culture to local wisdoms because to both terminologies have a similar epitemology refers to habits, values rate be tradision inherited within a community group. According to Syafrizal (1993), by concept, a local wisdom phenomenon can be approached in variously perspective, such as religion perspective and traditions, insisted that in religion perspective, local wisdom can be intepreted as a whole human life aspect that has been available to explore and used for human life prosperous, meanwhile, in culture perspective, local wisdom meant variously aspects outcome from social selection or by testing done by a group of community and proved and also offer kind value for their life. In this such verification is aware of it or not generate a local wisdom become a culture to traditions, inherent firmly to community life.

Still Muhammad Takari (2008), affirmed that local wisdom to ethnic sphere also is seen variously matters. For instance, in order to respond natural around then human raised a home with spiritual aspects to maintain. It is also held in a marriage system, some lied to out-clan marriage (exogamus), a marriage for political interest on power, such as a man propose to marry a woman or vice versa. In addition, local wisdom also reflected in a life philosophy to a human urge to think it and optimalize. For instance, in Batak Toba people also known popular *dalihan Na Tolu* (DNT) philosophy, for Aceh community known *Adat bak petumeuruhom hukom bak syaiah kualah*, in Minangkabau community is found *alam nan takambang menjadi guru*, for Java people known with *alon-alon waton kelakon* dan *sederek*, still to Sulawesi people known a universal friendship with philosophy *pelagandong*, and so forth.

*Local wisdom also can contribute to the existence of certain nation state. Even in working out a nation state is always dominated local wisdoms growing in community to develop and prepare the nation state. For instance, for united nation Republic of Indonesia (NKRI) having own state ideology Pancasila, indeed it is through pure thought process of those founder of this nation provided state based taken and dug up from any local wisdom values in Archipelago. All these local wisdoms then was formulated into five percepts lied on the format "cultural social binding) meaning in differently but one unity (bhinneka tunggal ika).*

Beside as above viewed, then Wibowo (2015), affirmed local wisdom is an identity or culture nature of a nation cause this nation capable to absorb even to measure the culture origin from others and it become character and capable self. The identity and character reasonable adjust to life view of people around to avoid changing of values. Local wisdom is one of means in exploring the culture and maintain self from foreign cultures weaken down. Further, local wisdom can be identified from several main characteristics of scope, they are : 1) having ability to own control, 2) it is safehold to defense from

outside influence, 3) having ability to accommodate outside culture, 4) having ability to a leading increased up, 5) having ability to integrate and unite outside culture and original culture.

## 2. Cultural Mission Concept

The culture mission concept to explore in this study namely a contact inter-culture occurrence in a real life of community. According to Lydia Prabandani (2020), a culture contact as a product of intellectual intelligence, so the culture be dynamical, then improved up and transformed. The development of culture or converted can occur in several causes, either human-self factor or upon inter-contact of culture, including acculturation. According to Redfield, Lintondan Herkovitz (in Letha Del Castillo, 2020), mentioned that acculturation is considered a phenomenon may occur when between groups having different culture seen and found contact taking place continuously, so the original culture pattern on this group or from both groups may mix. Still, Lydia Prabandani (2020), confirmed that inter-culture contact has occurred since thousands year Before Christ, such taken place on migration of Chinese group into Malay region (Indonesia). Inter-culture contact occurred not only between two different cultures, between one nation to other, but also occurred between a certain culture found in any nation or culture having own culture heterogeneity, as Indonesia.

It is truly noted that inter-culture contact can be done in education, settlement, travelling, trades, and so forth. Specifically, the culture contact can take place on several factors, they are : 1) Education Factor. Since ending world war 2nd, there were countries in the world opened and accept students from other countries on science reasonable, some also provided scholarship. By foundations, developed countries mainly Europe and United States, offered many opportunities for foreigners to come into Europe and United States at least for study. 2) Migration factor. This factor is included to a human symptomatic since long time, either in immigration, transmigration, and urbanization. Usually, a migration is highly influenced by economic factor, included refugees and asylum seeker. This migration process is going to cause occurrence culture contact between those come and local community as target of migration, 3) Business and international traders. This factor may cause people get mobility. There are various inter national relation with trading reason as then bind some cooperation channel, such as silk line namely a trade from middle east into Chinese, also trades channel by archipelago into Europe such as AFTA, APEC and so forth. All these cooperation and business agreements by the trades may provide aid in financial to many developing countries, in various reasonable, such as human aids, grant for keeping Human rights, also in economy helping to many countries with monetary crisis, and so forth. 5) Tourism factor, for someone go in travelling to other country, and to be done by local tourist as domestic visitor. With these tourism context perhaps cause cultural aspect. Making culture contact is assumed as dominantly aspect for 21st century, as projected going increase.

Other views is confirmed by Syafrizal (2019), that social contact is a certain model seen most popular bring a culture mission although it required polarization of power between two or more culture groups namely existed superior group and inferior one. This culture group polarization truly could be originated before culture contact but also it can be formed when a culture contact done. Sometimes, a group shall be assumed superior not it at once based on quantity alone, but it also highly influenced by quality of members, since quantity is assumed as main requirement to become superior. In this matter, it is possibly for a group with small quantity, but for its quality good and also supported with having other positive aspect such as also have a very high quality asset, good management, life principles awake, it can also become guidance for other group life, and it may bring more superior.

Further, Letha Del Castillo (2020), if a group of community with a certain culture type openly to accept other culture, cause there a culture contact. Any culture contact preceded by interaction going on continuously then it cause love each other culture in aware or not. A culture contact is a mixing of one culture with other. For instance, taken Indonesia, there found Java culture mixed to Sulawesi culture. In any mixing culture form a newly culture. That culture is human done and it has been taken place generation to generation.

## 3. Social Integration

There are many differences in community that possibly and potential to lead any social conflict. In order to synchronize the difference, it is required a consensus effort to a social integration. Conflict is a social phenomenon may appear on each aspect of community life. It may appear at any time and any where. As a conflict available, that social integration is also with two side of coin, if any conflict, then it has potency of reintegration leading to peace. Following, there are some social integration concept. According to Muhammad Faiz (2016), social integration is main priority to achieve peace, harmony, and

stability of community. But, there are many social disorder in non-physical as obstacle to grasp the community mixing even it may cause quarrel and disintegration.

According to Inge Gunardi (2019), a social integration is a process to unite various groups in community through a jointly identity ignoring each different. In a functional approach basically every community is seen integrated state in norms and values. Normative integration is assumed required for (1) realizing a normal harmony with relation to various human behavior in different situation; and (2) to implement a highly obedience between norms with behavior of community in truly. So, a functional approach, shall be a consensus of values with social integration principle in any community. A conflict approach see that social integration principle is not a consensus in values side, but see it by conflict side, constraint and pressure.

Other concept about social integration is adopted by Yuksinau (2020), a social integration is a combination, it may have perfect in all, while social means a relation and also doing action vice versa that found in community. The action that has been done mostly due to existed social symptoms on wishes and hope. If the social symptoms and the hope can not be done usually resulted in social problem, then at last it may trigger any conflict or disintegration. Social integration is a relation found in community elements correlated each other intensively in various level of life. It means, in a social integration may occur mixing of several different elements so it may do cooperation with other elements.

Beside social integration concept as above, adopted also several belief or followers, they are : 1) participant to conflict approach, for a community get integrity in coercion of a group or social unity dominantly over groups or social unit, 2) attendant to structural functioning, that a social system is always to integrate into two fundamentals namey consensus about fundamental values and cross-cutting affiliation (multiple membership and one social unit), 3) Kun Maryati and Juju Suryawati (2014), hold that social integration is a process to adjust differently elements in community become into one. The differently elements shall be differently in social status, race, religion, language, traditions, value marits, and norm, 4) Based on KBBI Distionary, an integration is a mixing of certain element become into one in whole.

But, sometims social integration face a dead line that very hardly to implement, according to William F. Ogburn and Mayer Nimkoff, in orde to get result a social integration are as followings: 1) members of community feel that they get success to fill requirement each other. It means physical requirement either as food and so on can be fulfilled by own culture. As fulfilling this requirement each other resulted in all community need to keep attachment each other, 2) community get success to bring consensus about their norms and social values sustainable and put it as guidance in interact one and another, including agree to avoid matters as banned in traditions, 3) The norms and social values shall be effective for long time and to adopt it consistently and must not get any change in order to keep social interaction process.

### **3. THE METHOD OF RESEARCH**

This study adopted qualitative approach focusing research on various general symptoms in really daily life to community social relation. This study was conducted in several stages, they are : 1) preparation stage for more than 3 (three) weeks with some agenda such as preparation in library study related with population and cultural activities, and also with preparation in various documents correlated with local government institutions, 2) Collecting the data stage by interview directly to the informan deeply using sufficient time longer, also conducted reinterview to those informan while having shortage data after analyzing it. 3) Analayzing data stage at once starting to process making a report of research until finish. This study was conducted in Kecamatan Tapung Kampar Riau with population some 90,092 people, consisting two ethnic groups namely Ocu people as local community around 33,367 people and the rest are Java people community as comer through transmigration process in the past time.

It is noted its population in huge, the researchers assumed necessity to appoint some informan. According to Spredley (1977), although each people be willingness as informan, but it is not every one allowed as a good informan. Appointnig to any informan need consideration, basically point of quality while conducting interview as done in field. In appointing informan should be based on quality value with precisely, fitting to, experting, figure, and authority, also point of senior/ priority rate. Informan for research need 5 people originated from both community ethnic groups, they should 3 person from Ocu people and another 2 person from Java community. The activity of collecting data is the most important part in a research. Noted that they as main informan as priority such as Baharuddin public figure from Tapung, Junaidi youth figure from Tapung, Nurma Saadah local woman of Tapung, and Atmaji S, as traditional public figure of Java community in Tapung, and Suryo Yuda, a Java youth public figure in

Tapung. It is noted that main important point in this study perhaps about the usage of interactive method covering interview deeply, including observation, while non-interactive as source of additional data as in document conforming to the problem matter in discussion.

#### 4. THE OUTCOME AND DISCUSSION

##### 1. The Outcome

After having complete data done in any interview to informan, the point of aspects according to criterion in this study, then done a process of presenting data in whole. Presenting data from 3 Informan of Ocu people community are as following :

1.1. Presenting data about local culture in Ocu people community, he is Baharuddin as public figure of Tapung, confirmed that local spoken (mother tongue for Ocu people),

*ndekomuageyie yotie nghagu lomulo ghangjawage tibioke banjauge, ndosaketek bonyakde lobiolole podoghang ocuge labangkik lohgisau ghangawakge. Ghangjawagekan komaige mbososodojowadek,e jaktole lanangkene nagkonojiele. Topilalamoyie uposan ndakcondonan ghangocu kihgokhigokan hgangocugelai sodaw piliopiliojuo manonansosuai manolonanitdo. Papendekcuitoyie nompaaah ndolai membaibuwuok bonaw dekacahgo iduikhgangocugede. Disapaohgosapahgo laimaikuek kabudayokitage, apoduyie, latabukak kikihgodyie ndomangango jole latontu dek,e kandikojon nankan mamalihgoaiduik bakaluarga. Condotujuoyie mampakueksondi-sondi budayohgangocuge. Tutieyie nyonyodeyen laimambai kabanyiokkanyie cahgocahgo iduikbudayo hgangawakge, cubocai manolonanilang congkuohgi hgangocuge. Konyiecongkuohgi jalannala pasaldekkbalolui, toplanla nanlaadojakdoolule, nompaknyie samakinkueknyo, keadathgangocud, maiwacubotaw padobogain: 1) pancoghianyie komuage ncailawuok jomamotongjo hgangocuge, tukaladang mangombaimbo hganoumangasang, tumahgantau, kingie lacodak lapandaile hgangocuge manggale, jobakobun mocammocam nanndak pomade adosabolun hgangjawagekamai, 2) adekhgangocuge ndolainompaak nantalope dahgigogangde, sabonyakge congkuohgibudayo hgangocuge, batobo, mahgantaw, mahgumbo, kawin kabako,manyilio, badikiw, joloinnyao, hgosolaibotamba ancakdihgaso lomakditengok, labuliolo dikatongan tapiyopulola labacampucampu jopakakejawage ndombobuwuoksodo, mokasihyie cegakcegaktowi wassalamualaikum warohmatullohiwabarokatu.*

"noted in early time they Ocu comas local people worried of coming Java people in this region with huge number, that time estimated of exceeding over Ocu people community as original and local one in Tapung, even more their present as Java people since earl to Tapung region seen not only about the coming of people but also worried also on the culture bring about with them. But in fact, it is not as assumed about the incoming of Java people into Ocu people living in, at least, their coming can be set as motivation, triggering to aware soon and take the benefitable. It then motivate local people to aware soon, they must think self to take a worth point for their future improvement and advancement. In reality, there was not found any fundamental change on traditions to local people of Ocu, as seen previously. In fact, some of local people got strengthening, as several aspects of traditions as followings".

In order to get a deeply description related with the culture aspects of local people Ocu community, as well as how to strengthen it, one's opinion from informan Baharuddina, as public figure of Tapung, seen as on Table 1.

Aspects of Local culture on Ocu people	Empowerman by culture Mission Java
1. batobo ( <i>in farming</i> )	work by group on farming field
2. mahgantau ( <i>going far another region</i> )	seeking life around own area
3. mahgumbo batu ( <i>carrying up stone in river</i> )	as labor worker in field
4. mangasang ( <i>move up on field</i> )	working in field, palm-oil plantation
5. kawinkaboko/suku ( <i>married indogen</i> )	married to other group/ exogen
6. badikiw ( <i>get entertainment celebrating</i> )	pengajian, workshop, tilawah qur-an

(Syahrizal)

7. manyilio (*owing something weekend*)                      pawned, credit, compensation

Source : Data informan Baharuddin, public figure of Tapung, 2018

1.2 Presenting Data of Local Culture on Ocu Community, for Junaidi a youth figure of Tapung, mention that :

*Ituduyie kanpolitikdu apolepolitik komuage ndobulio dibongkawbongkaw dudo kan lamosamo bagosonma. Agakpayatekma malotan pikighan mangkaji tibonyo hgangjawa katompokitoge. Tukandiboponle latakuaagoma, hehehe. Topiyie kolodihgosaihgosai ndokanmajugaahde bonjoukitoge kolondaklatibo jawage kanyotie. Kolocondotuyie payawakde mambainilaidunaang. Topi kihgokihgo deyengua banyakmompoeke dahgibuwuoknyo hgangjawaadokek bonjauge, tengokdua anakkoponakanawak lacodiokcodik, labasikola kajawaten, labanyaklejoditantara, polisi, pagawaindole taetong, juonyie kamampaelok budayokita hgangocuge. Tontang congkuohgi hgangocuge nanlailang gghosondolaisodo, molalabapakuek, mowakcaiciekciekyie, pancoghian labaubama lacodioklo hgangocuge, kobiasoanhgangocuge mangahgi labaubaloka mbuekkojo badagang ditopitopi jalanlentege mandapekjuo, biansonjualnjual tanah dipinggiujalange lajangangtadongaule lobioancak jodintompek usahole, papajie komuage kociokle lakawinkawin kingie sakoladoolundee, kojolamiliomilioma, labanyakubama hgangocu sosododuyie nyodeyen laisambuong manyambuontogadek tibohgangjawage kabanjauko.*

“hold transmigration officially was done as political option by previously order rezim under President Soeharto. It must be never argued, because its existence worth we can share together. In judging official policy of transmigration is hardly to value the way of process appointing them in transmigration of the Java people to this area, but it has been done well. In viewing it clearly and seriously, if those Java people did not come into Tapung, nothing influencing this region, thoguht it shall not get improvement as availabl as today. Mostly local people then got newly way of thinking. It is seen local people got more profitable by coming those transmigrant as Java people. It can be seen from their willingness to study more year to years, motivate local people to go school, some going out to study outside, some to Java area for studying, inspiring local community to get career going to other provinces. Some got profession as National Army, Policeman and also as government and public employee. It also empower to local culture be more improvement. I found proved local people got more profitable by coming those Java people as transmigrant than disadvantages. Also, it is on changing attitudes to view marriage in young aged only into around relative, seen today, got marriage after in mature aged, and mostly local people as community accepted already mixed marriage, go out relative, to the family of Java community. Since long time, to Ocu people do not provide any food sending to other family while getting marriage ceremony. At present, the traditions belonging to Java people of preparing and presenting food, complete meal, with various cakes to another family then mostly local community of Ocu practice the same traditions, adopting more traditions”.

In order to find more deeper description relating with aspects of culture to Ocu people, also another aspect of enriching, given own opinion by Junaidi as youth figure of Tapung as seen on Table 2 as following.

Local Culture Aspects of Ocu People	Enriched by Java Culture Mission
1. Tua, Langik Takombang Jadi Ghuhgu	Changing their way of life advanced
2. Pancoghian ( <i>manganyie, motong, puaghi</i> )	Working labor to plantation monthly hire
3. Mamukek kuaghan ( <i>ungge langik</i> )	Raising livestock of animal husbandry
4. Maghompuok ( <i>mangasang</i> )	planting ( <i>palm-oil, banana, watermelon</i> )

Source : Data informan JunaidiYouth figure Tapung, 2018



### 1.3 Presenting Data of Local culture by Ocu Local Community, as Nurma Saadah a woman figure of Tapung,

*Assalamualaikum warohmatullohi wabarokatuh, ghisaughisau juolah manggotin kahgono hgangjawage dibonjauhngocuge. Ondenaang hgamaibotuo hgangjawage condokan tangolam ngangocudekle. Topilalamoyie kosan hgangocuko laijuo bapikiusosinggo laibatahan laindoilang tangolam beetujode. Iyotie laindoilang beetujode laibatahanjie condoapopun manggalembak ghangjawage hgangocupun mampakueklo congkamnyo. Adekhgangocupun laindak tausiokdo moayie mampakuek togadek adotombatomba adekhgangjawage. Mpamonyoyie, pakahgo makanminumge, nyonyodeyen batambakue dekbacampujo pakahgomocam makananjawa, juoyieponiokponiok pakakeolek nancondo waktengok kinige. Nanlainle cahgocahgoiduk ncaimakange labaubajuo keknanlai codak ndocondodoolude, lacodioklo manggale, itulayie jakcomaihganjawa ndomambobuwuokdo topinompak mbaimampakuek adekkabiasoan hgangocu, Wassalam warohmatullohi wabarokatuh.*

“mentioned that found a seriously worries in seeing many Java people come into this region as early time. But, later time, in reality Ocu people community have mind how to keep and maintain and deal with other culture of Java mission. Please noted that what Ocu people community do in dealing with other culture of Java, indicated that mostly local community keep it as original but having then additional to enrich, for instane, in matter of providing food meal and drink, with various attribute, assessories, trinkets equipment for marriage party. In addition, inspiring also to family economy values as previously not supported, then mostly local people aware of having better, some willingly to become labor on plantation with monthly hire, and some get own usual trades and business”.

In order to have detail description relating with aspects of local culture of Ocu people as community, aspects of enriching, with own view of Junaidi, a youth figure of Tapung, as seen on Table 3 as following :

Local culture Aspects of Ocu People	Enriching by Java Culture Mission
1. Punju lawuok ( <i>pongek, sangai</i> )	Fish Pepes menu, sweet spicy
2. Slayar sihga dan slayar Length yellow BerbatikJava typical on marriage party	slayar combined redish with yellow
3. Puahgi ( <i>batandak, basampuok</i> )	working on plantation, trades, and farm

Source : Data informan Nurma Saadah, Woman figure of Tapung, 2018

After having competed data well by making interview with informan, regarding the aspects with criterion on this study, later provide presentation of data in whole. In presenting the data by both 2 informan of Java people, it is seen as following :

1.1 Presenting data about culture mission of Java people by Atmaji S, as public figure to Java community in Tapung, mentioned that by coming in Java people noted almost to all regions of Indonesia, particularly to this area, according to my mind never it cause any dilemma over local culture of Acu community culture, instead I appreciate it for enriching each other in both culture mainly seen in generation of mixing married between Ocu community as local people to Java people. It is truly seen applied a mixing culture precisely and give a positive impact of enriching culture to this area and surrounding. It take a long process of course, both culture got own mixing due to existing openness in both ethnic groups. Noted in early time, by coming-in those Java people cause a worries in those local community, because there are huge number of them coming in to that region and occupy the land belonging right of local community in this region. But, today alike condition had been gone away and changed into a newly sense, inspired a newly order of life to all region of Tapung. Since today, young generation truly subject to bind their culture by a mixing married, resulted in differently atmosphere compared to teens years ago. It is to assure that as long as analyzed in field, there is nothing culture belonging to Acu people practicing be eroded or lost, but we can find adversely there is found enriching of values, citizenship, various culture of Ocu people community get collaboration with Java people

culture with them. Alike condition in my projection may improve and advance in harmony, fitting with, and to profitable each other.

In order to get detail description relating with culture mission of Java people over enriching local culture of Ocu community, taken view of informan Atmaji S. A popular figure of Java people in Tapung, seen as Table 4.

Aspects Mission Culture of Java People	Enriching aspect over Ocu Culture
1. Principle of Life ( <i>discipline, diligent, tenacious</i> )	Inspiring willingness to advance in education, Change way of fulfilling family income
2. Neighbourship fellowship ( <i>to serve, way of spoken kindness</i> )	Change way of fulfilling family income change softnes with to greet kindness and softly ) softness and humble
3. Taste of food meal ( <i>sweet tasteful</i> )	to avoid diseases, spicy identified with angry sense
4. Respectful, affection ( <i>attitude to have marraige party</i> )	Inspiring respectful to parent provide food to head of group, public figure

Source : Data informan Atmaji S, Public Figure to Java People in Tapung, 2018

1.2 Presenting Data about Culture Mission of Java people as Community, by Suryo Yuda, a Youth figure of Java people in Tapung. Assalamualakum warohmatullahi wabarokatuh, I would like to inform you all, as a Java people community born in Tapung, I would like to mention that never see any serious problem among both ethnic groups about culture. It is noted that found a new culture by changing in two groups share each other taking place for teens years in long time. Seen early years, possibly with suspicious, worried of it, but in reality it is not reasonable. I think important matter in this case is how to prevent and keep to maintain a good relation, harmony among them. It is truly, the people living and get food and take drink in this region with own family mixed already. Could one culture damage other culture, in this case specifically the culture of Java people is more dominant over other eliminate them, to destroy local culture of Ocu. In my opinion, it could enrich local culture. Some practices by Java people with own traditions over local culture of community, it is about work ethical, kindness and soft in attitudes, keep always clean own area around, to harmony of living with neighborhood, to marry with out line in mixing around this area and so forth. Today, I see that youth generation do not care with one culture only alone to live. Mostly young generation instead thingking about their future be better. According many families in Tapung got married mixing with other ethnic group. As youth, their mind is fully of enjoying social relation that has been prepared by previously generation, their parent, hold and keep their culture inheritance for never fail anymore.

In order to have detail description relating with culture mission of Java people in community refers to view of Suryo Yuda, a youth figure of Java community in Tapung, it can be seen as on Table 5 below.

Aspects of Local Culture of Ocu people	Enriching by Java Culture Mission
1. Spirit to work ethic	Inspiring way of thinking positively
2. Kindness to behave and attitudes	Improved in politeness, and friendly
3. Keep cleanness	Improved understanding of diversity
4. Neighbourhood fellowship	Improved promoting environmental

Source : Data informan Baharuddin, public Figure in Tapung, 2018

## 2. Discussion of Study

The transmigration that has been implemented since long time officially by government, can be seen as a certain program aiming at dealing with problem of national development and also to respond how to spread over many regions. In addition, in the same time the transmigration program also has been prepared to promote a national integrity (Mohamad Fauzi Sukimi, 1999). As one of main variables to this study, the transmigration program officially provided as media to meet both ethnic groups differently in culture. Bases to data obtained by 3 (three) informants adopted from Ocu people group. After field analyzing, then found reality both ethnic groups have similar equality to value social relation amongst those Ocu people as local community and Java people in Tapung Kampar Riau. It means, proved that found empowering and enriching state of local culture influenced by Java cultures.

In field analysis also found that Java people as community in fact have a widely mind substantial believe that the process of culture mission of Java community may inspire to local culture. According to informant originally from Java people also confirmed that in early found suspicious, worried about for the coming of Java people into the region. Noted in earlier time how so distrusted local people for the existence of new comers. But, for at present, the worries of suspicious is not relevant any more. In honestly, and to see local situation with social reality the situation of worry has been thrown away, specifically as mostly youth generation hold up in Tapung in whole. Time after time, local community focus more on daily and reality life problem how to repair and improve life and prosperous, how to promote education and to improve social welfare. In field analysis, it has been found enriching process on local culture through Java culture mission leading to a national integrated, refers to the theme to this research on how to empower local culture through Java culture mission leading to a social integrity on transmigration region of Tapung ( a Cultural Anthropology study on Ocu people).

## 5. CONCLUSION

In analysis to all aspect in whole it can be taken a conclusion that transmigration as a media to bring them meet and link two cultures in differently based there generate a suspicious feel early previously and cause worry up on those original people as community in local occupy this region since early time namely those Ocu people, however the feeling in worries and with suspicious may run down away along with changing condition into a differently atmosphere in their relationship and get harmonious. The harmonious values inherent in relation is a reality form as consequence flowing up process of marriage mixed amongst those Ocu people as local community with the new comer of Java people as community into the region.

This study also concluded that it has taken place a certain value of empowering local culture through a culture mission of Java leading to a social integrated on the transmigration region of Tapung Kampar Riau. The existence there present physically of Java people was facilitated by a transmigration program for more than 4 (four) decades in the past time, in aware full or not aware, the process of mixing Ocu culture to Java culture with mission program had already influenced each other. This condition highly correlated with the existence of human held belonging the culture itself. So, enriching local culture of Ocu practices, it is believed due to a process taken place by a culture mission done by Java people run to process for a long time.

Empowering local culture of Ocu people community, it is seen as positive impact of culture mission of Java people, and in turn the performance achieved realize a social integration in this region. A social integrated as intended is a released suspicious feeling, losing worries of each community members in Tapung Kampar Riau when found situation of culture social occurrence any disparage each other, to think that their culture is assumed mostly great amongst the culture available and another. Fortunately, found a social integrated with the form of encouraging each other, to respectful one and another, and to promote one and another. It is noted proved that occurrence a social integrated in this region such as : 1) change of mind by those Ocu people as community for daily life, take of thinking hold a working ethical more appreciated ( to be more discipline to work, seriously, and to work hard), since alike attitude individual inherent to those Java people as community with own culture, 2) changing their standard for fulfilling daily necessity in family either traditional practices into modern up to date either trading, farming with business motivated, every body may race to have higher education, 3) changing their culture social, attitude to have marriage in early aged, then bring them into a condition individual should prepare previously before getting married, also a mind today, it allowable to marry out-line

(exogenous), for a longer time they thought it strange and taboo. For this matter, it is proved available flowing up found mixing marriage in this region.

## REFERENCES

- Hasan Mat Nor. 2000. Pendidikan dan Masa Depan Komuniti Orang Asli. Dlm. Rahimah Abdul Aziz & Muhammed Yusoff Ismail. 2000. (pnyt). *Masyarakat Budaya dan Perubahan*. Bangi: Universiti Kebangsaan Malaysia.
- Huybers, 1982. (Dlmisdhafiauho12) Kepentingan Umum (*Antara Konsep Dan Praktik*), 2016. *Indonesia*. UniversitiKebangsaan Malaysia.
- Inge Gunardi. 2019. konsep integrasi sosial, Dalam <https://docplayer.info/90077501-Konsep-integrasi-sosial.html>. [21/05/2018]
- Integrasi Sosial - Pengertian, Syarat, Faktor, Bentuk, Proses. 2018 Dalam <https://www.fahdisiro.com/2018/03/pengertian-syarat-faktor-bentuk-proses-terjadinya-integrasi-sosial.html>. [12/04/2018]
- Isdhafiauho.2016. Kepentingan Umum (Antara Konsep Dan Praktik, Dalam [http://isdhafiauho12.blogspot.com/2016/12/kepentingan-umum-antara-konsep-dan-Definisi.KepentinganUmum\(AntaraKonsepDanPraktik\),DipostingolehUnknowndi03.25.\[21/05/2018\].](http://isdhafiauho12.blogspot.com/2016/12/kepentingan-umum-antara-konsep-dan-Definisi.KepentinganUmum(AntaraKonsepDanPraktik),DipostingolehUnknowndi03.25.[21/05/2018].)
- John Salindeho (oloansitorusdandayatlimbong), 2004.(Dlmisdhafiauho12), Kepentingan Umum (Antara Konsep Dan Praktik), 2016.
- Jumlah Penduduk Menurut Jenis Kelamin dan Kecamatan di Kabupaten Kampar Tahun 2013, Dalam <https://kamparkab.bps.go.id/statictable/2015/05/17/9/jumlah-penduduk-menurut-jenis-kelamin-dan-kecamatan-di-kabupaten-kampar-tahun-2013.html>. [11/03/2019]
- Konsep Integrasi Sosial, Dalam [http://Ppg.Spada.Ristekdikti.Go.Id/Master/Pluginfile.Php/30987/Mod\\_Resource/Content/7/15.6.Pdf](http://Ppg.Spada.Ristekdikti.Go.Id/Master/Pluginfile.Php/30987/Mod_Resource/Content/7/15.6.Pdf). [21/04/2018]
- Konsep Kepentingan Umum Dalam Perspektif Pengadaan Tanah Oleh Negara. 2018.Dalam <https://journal.unhena.ac.id/index.php/hibsos/article/view/71>, [20/04/2019]
- Letha Del Castillo. 2020. Dalam <https://www.cribd.com/doc/54933118/KONTAK-BUDAYA>, Copyright © 2020 Scribd Inc.[25/01/2019]
- Lydia Prabdani.2020.KontakBudaya. [https://www.academia.edu/17682543/Kontak\\_budaya](https://www.academia.edu/17682543/Kontak_budaya), Academia ©2020
- Mohamad Fauzi Sukimi. 1999. Transmigrasi Sebagai Suatu Proses Penanaman Budaya: Satu Kajian Tentang Hubungan Minoriti-Majoriti dalam Konteks Pembangunan Politik di Indonesia. Bangi: Universiti Kebangsaan Malaysia.
- Mughnifar Ilham. 2019. Pengertian Kearifan Lokal – Ciri-Ciri, Bentuk, Ruang Lingkup Dan Contoh, Dalam <http://Eprints.umm.ac.id/35955/3/jiptumpp-Gdl-Irawansatr-48429-3-Babiip-F.Pdf>. [30/06/2018]
- Muhammad Faiz. 2016. konsep integrasi sosial, kajian pemikiran said nursi, Dalam <http://e-journal.metrouniv.ac.id/index.php/akademika/article/view/464>. [21/05/2018].
- Muhammad Takari, Kearifan Lokal Dalam Konteks Pembentukan Karakter Bangsa Indonesia, Dalam <https://www.etnomusikologiusu.com/artikel-kearifan-lokal.html> [21 September 2019].
- Pelras, C. 1996. *The Bugis*. Blackwell Publishers Limited, Oxford. (pnyt). Abdul Rahman Abu. 2006. *ManusiaBugis*. Jakarta: Nalar.
- Redfield, Linton dan Herkovitz, Dalam [https://www.academia.edu/17682543/Kontak\\_budaya](https://www.academia.edu/17682543/Kontak_budaya), Academia ©2020.[21/05/2018]
- Reli Jevon Laike, 2018. konsep kepentingan umum dalam perspektif pengadaan tanah oleh negara, Universitas Hein Namotemo Program Studi Hukum, P-ISSN 2549|E-ISSN 2621 0363.Dalam <https://journal.unhena.ac.id/index.php/HibSos/article/view/71>. [07/06/2018]
- Spredley, James. P. 1977. *The Ethnographic Interview*. (pnyt). Amirudin. 1997. *Metode Etnografi*. Yogyakarta: PT. Tiara Wacana Yogja.
- Syafrizal, 2019. Local Wisdom (*kearifan lokal*), eksistensi dan degradasi tinjauan antropologi sosial (ekplorasi kearifan lokal etnik Ocu di Kampar Riau), *JurnalEduTech* Vol 5 No.2 September 2019, ISSN: 2442-6024, e-ISSN: 2442-7063.[10/06/2018]
- Syafrizal. 1993. *Ungkapan-UngkapanTradisionalMasyarakatRumbio*. Universitas Riau. Skripsi Sarjana. Jabatan Pendidikan Moral Pancasila. Pekanbaru.
- Wibowo, 2015, PengertianKearifanLokal(Dlmlrawansatr), Bab II Kajian Pustaka 2.1 Pengertian Kearifan Lokal, Dalam <http://eprints.umm.ac.id/35955/3/jiptumpp-gdl-irawansatr-48429-3-babiip-f.pdf> [21 September 2018].
- William F. Ogburn dan Mayer Nimkoff, DalamYuksinau. 2020. Integritas Sosial, Dalam <https://www.yuksinau.id/integrasi-sosial/>[17/05/2018]
- Yuksinau. 2020. Integritas Sosial, <https://www.yuksinau.id/integrasi-sosial/>[21/05/2018].

## Law of Warranty of Halal Products As a Protection of Muslim Consumers In Indonesia

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### ABSTRACT

The law that provides legal protection for Muslim consumers in Indonesia has long been missed. This is because the number of products sold and circulated in Indonesia is questionable as halal, while Muslims are the largest community in Indonesia. Based on these facts, it is a necessity that Muslims need protection for what they consume and the State is obliged to provide that protection. The basis for the need for regulations related to halal products is the existence of an order from the Al-Quran for Muslims to consume halal and good food. The Draft Law on Halal Products itself is in the process of discussing fiercely, because there are several parties who state that there is no need for the state to interfere too much with the halal or haram that is consumed by the public. Finally, Law Number 33 of 2014 concerning Guarantee of Halal Products was issued, even though it was at the end of Susilo Bambang Yudhoyono's reign. The issuance of Law Number 33 of 2014, at most gives an order to producers to immediately process their halal guarantees to the Indonesian Ulema Council to issue halal certificates.

**Keywords:** *products, halal, protection, consumers, Muslims*

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### 1. INTRODUCTION

The proliferation of food and beverage products on the market for consumption by consumers is still questionable their hygienic and halal status. Another side that must be considered is the process of making food and beverage products, for example, the concoction of food and beverage spices. Tri Susanto, a lecturer at the University of Brawijaya Malang caught that anxiety in the 1980s. Based on the research results, it was found in products such as milk, noodles, snacks, containing gelatin, shortening and lecithin and fat which most likely came from pork.

Subsequently, it turned out that the list of products that were announced as published by Ummat magazine, which previously only amounted to 34 kinds of food and beverages, had grown to such a degree that many products that were not in the original list became available. This all caused a big stir in what became known as the "lard issue". (Al-Asyhar, 2003: 141). The issue of lard then had a long impact on national economic stability, which was almost paralyzed. To reduce this issue, in 1989, the Indonesian Ulema Council (MUI) held a meeting to discuss the issue. At that time, MUI decided to go directly to the problem because it was feared that there would be an even bigger upheaval. (Al-Asyhar, 2003: 141).

These situations and conditions prompted MUI to intervene in pacifying the people by establishing the Institute for the Study of Food, Drugs and Cosmetics (LPPOM), which was established on January 6, 1989. The tasks assigned by MUI to LPPOM include: conducting investigations, classification and study of food, medicines and cosmetics circulating in society, assesses and compiles concepts related to regulations regarding the operation of restaurants, hotels, dishes on a cruise or flight of various types of materials for processing food, medicines and cosmetics which are used used by the community, especially Muslims to be guaranteed halal.

The development of food processing technology, beverages, medicines, cosmetics, and other products as well as taking lessons from the case of lard, the case of instant noodles, the case of soap, the case of food flavoring, which is strongly suspected of containing haram elements for the Muslim community to be sensitive and very selective in choosing halal products so that people only consume and use products that are truly halal with a guaranteed halal mark that is recognized by the government because the majority of Indonesian consumers are Muslim. (Section of the Halal Product Facilities and Infrastructure Project, Directorate General of Islamic Community Guidance and Hajj Implementation, Ministry of Religion, 2003: 13)

Referring to the constitution of the Republic of Indonesia, Article 28E paragraph (1) and Article 29 paragraph (1) and paragraph (2) of the 1945 Constitution (UUD 1945) *mutatis mutandis*, the State guarantees the independence of each resident to embrace their respective religions. and to worship according to his religion and belief. Likewise, the Muslim population of Indonesia, they have the constitutional right to obtain legal protection for the halalness of products in accordance with their religious beliefs. Therefore, Muslims need to be given legal protection in the form of guarantees of the halalness of the food consumed and other products used. (Shofie, 2015: 31)

Consuming halal products according to religious (Islamic) beliefs and / or for the quality of life and life, is a citizen's right guaranteed by the 1945 Constitution, especially Law Number 8 of 1989 concerning Consumer Protection. (Tambunan, 2013: 16). Consuming halal is an obligation for every Muslim. (Apriyantono, 2013: 48)

On the basis of this constitutional approach, since 2005 the Halal Product Guarantee Bill (RUU JPH) has begun to be submitted as an initiative of the People's Representative Council (DPR) of the Republic of Indonesia. (Anonymous, <http://www.jpnn.com/read/2014/02/28/219189/Problem-Halal-Certification,-Golkar-Ask-MUI-Stay-Involved->, accessed February 2, 2021). The JPH Bill aims to provide legal certainty to the Indonesian Muslim community regarding the halal products circulating in Indonesia. The JPH Bill changes the provisions for halal product certification. If previously halal certificates were voluntary, then through this bill, business actors must have halal certificates. Business actors who violate this provision are proposed to be subject to criminal sanctions.

## 2. THE URGENCY OF HALAL PRODUCTS FOR MUSLIM CONSUMERS

Public awareness to consume food or drinks that are guaranteed to be halal is quite high. For this reason, the Indonesian government is obliged to protect the public from consuming halal food. The 1945 Constitution of the Republic of Indonesia (UUD 1945) provides constitutional foundations for all Indonesian citizens in living life, both worldly and ukhrowi. In carrying out human-human relations, everyone at the same time cannot escape from the influence of His God as found in the state's philosophical norm, Pancasila.

Strictly speaking, every citizen of the Republic of Indonesia is guaranteed constitutional rights by the 1945 Constitution such as human rights, the right to religion and worship, the right to legal protection and equal rights and position in law, as well as the right to obtain a decent life including the right to consume food and use products. others that can guarantee the quality of life and human life.

The need for halal food products is a necessity for Muslims because consuming halal is a basic right of every Muslim and the implication of the obligations of the Shari'a. The availability of food that is sufficient, safe, nutritious, varies according to people's purchasing power and does not conflict with religious, cultural or belief values is the right of citizens guaranteed by the 1945 Constitution (UUD 1945) and the Consumer Protection Law No. 8 of 1999. This is also a form of government effort in protecting the rights of citizens as stated in the fourth paragraph of the preamble to the 1945 Constitution, namely the Indonesian State protects the entire Indonesian nation and all Indonesian bloodshed. (Rohayati, [www.digilib.uinsby.ac.id](http://www.digilib.uinsby.ac.id), accessed February 2, 2021).

Consumers' protection of halal food has been carried out by MUI, where in 1989 the LPPOM-MUI established (Bisri, 1995: 81,89, 242, 249) to coordinate development and supervision of processed food production as a follow-up to halal certification, INPRES was born. Number 23 of 1991 which was coordinated by the Coordinating Minister for People's Welfare together with MUI. (Siradjuddin, 2013: 103). It was only in 1992 through Law Number 23 of 1992 that the problem of halal food began to take place.

The provisions regarding consumer protection are actually contained in the fourth paragraph of the Preamble to the 1945 Constitution which states that the Indonesian State protects the entire Indonesian nation and all Indonesian bloodshed. Therefore, the birth of the Halal Product Guarantee Law, represents the responsibility of the State, especially for Muslims, to protect and provide a sense of

calm and safety in consuming / using products that are in accordance with Sharia, namely halal and thoyyib. (Juwaini, 2012: 30)

The Al-Quran suggests that in consuming not only halal asaja, but also thoyyib. This is provided by the words *halalan thayyiban* (Q.S 2: 168). Because not all halal food will become thoyyib for consumers. For example, a person with diabetes, is sick with high sugar levels in his body, but he still consumes sugar. This of course endangers the health of the consumer of sugar, even though the sugar is halal for consumption, it is not good / thoyyib for the consumer. (Adam, 2017: 151)

Basically, Muslim consumers have an interest in holding religious orders, namely obeying the obligation to always consume halal and thoyyib (good) products. These two standards are conditions stipulated in the Al-Quran and the hadith of the Prophet. The Word of Allah in QS. al-Maidah (5): 88:

*This means: "And eat from what Allah has given you as a lawful and good sustenance, and fear Allah, whom you have faith in Him."*

The above verse of the Koran emphasizes that obeying Allah's commands regarding halal and tayib consumption is a form of piety and faith in Allah. According to M. Quraish Shihab, in the Tafsir al-Mishbah Message, Impression, and Harmony of the Qur'an, "The word eating in this verse is meant as all human activity. The choice of the word eat, not only because it is a basic human need, but also because food supports human activities. Without eating, humans are weak and unable to carry out activities." (Shihab, 200: 173). Therefore, halal and tayib provisions are not limited to food alone, but include all human activities in the production, trade and consumption of products that are used daily.

In short, food consisting of plants, animals, including fish, is halal to consume and some is haram. In fact, food or food that is lawful to eat is food that is *halalaan*, *thayyiban* plus *mubaarakan* and does not consist of being unclean or mixed with impurity. To get food products as intended, at least there is a *halalaat khamsu* that must be considered. First, the substance is lawful. In terms of its halal substances, the food consumed by humans is divided into three types, namely vegetable, vegetable and processed types. (Qaradawi, 2003: 69-85). Second, lawful way to get it. Food that is halal in substance to be consumed, must also be obtained legally. Because even though the food is halal in substance, if the method of obtaining it is haram, then it is assumed that the food is also haram. For example, rice which the ulama considers halal to eat (the substance is halal), but if the rice is stolen, it means that the method of obtaining the rice is haram, then the law of consuming it is also haram. Third, lawful way to process it. As it is understood, animals that are lawful to eat cannot be eaten immediately, but must go through a process of slaughtering, skinning and so on. Fourth, halal in storage. All foodstuffs that are stored should be stored in a safe place, such as in a refrigerator, so that they do not rot and are not stored in places that can be mixed with unclean, such as palm wine, or other haram objects. In the production process, it is not mixed with or close to or attached to things or materials that are unclean such as unclean and so on. Fifth, halal in its presentation. In distributing and serving food, the presentation must be clean from unclean and dirt. Suppliers and suppliers or sales people must be healthy and dressed clean and holy. Equipment for packaging or wrapping or the like must be hygienic, sterile, clean, holy and lawful. Utensils or dishes such as plates, bowls and so on must be holy, clean and lawful. (Murjani, 2015: 206)

According to Mashudi, the Government has responded positively to the importance of certification and inclusion of halal signs or writing on products (halal labeling) through several regulations. (Mashudi, 2015: 5). However, this regulation still seems sectoral and partial. In fact, food as a basic human need whose fulfillment is the basic right of every Indonesian people must always be available sufficiently at all times, safe, quality, nutritious, and varied at prices that are affordable to the purchasing power of the people (Ministry of Religion of the Republic of Indonesia, 2008: 310). law and legal certainty guarantee for halal consumption, especially Muslims who must be protected and given the right to practice worship in accordance with the mandate of the 1945 Constitution, especially Articles 28 and 29. (Hazairin, 1990: 33-35).

The interest of Muslim consumers is urgent because there is an appeal from the Indonesian Ulema Council (MUI) for Muslims to be aware of food, beverages, and the use of cosmetics imported from abroad because many of them contain ingredients from lard. (Hosen, 2007: 2). In addition, MUI also identifies that currently there is a growing food and culinary tourism industry, which is sometimes unclear about raw materials, auxiliary materials, additives, and processing. According to MUI, food products, medicines, and cosmetics that are not legally clear must be avoided until they are clear. Every

food, beverage, drug and cosmetic product which is produced through a legal technological process is subhat. (MUI, 2011: 916-917)

With the issuance of Law no. 18 of 2012 concerning Food, Law Number 8 of 1999 concerning Consumer Protection, then followed by the regulations below, namely Government Regulation Number 69 of 1999 concerning Food Label and Advertising, Decree of the Minister of Religion Number 518 of 2001 concerning Guidelines and Procedures for Examination and Stipulation Halal food, then halal food, beverages, medicines, cosmetics and other products that were originally only regulated in the jurisprudence are now regulated in laws and government regulations which are a new paradigm in regulating halal products. (Section of the Halal Product Facilities and Infrastructure Project, Directorate General of Islamic Community Guidance and Hajj Implementation, Ministry of Religion, 2003: i-ii). However, until now, halal certification is still being managed based on the interests of business people. The Director of LPPOM-MUI, Lukmanul Hakim, admitted that in general there are still many producers who are still not aware of the importance of halal certificates. (Judge, 2011: 9). In fact, many still consider halal certification as a burdensome process for producers. Furthermore, Lukmanul Hakim said that in the future halal certificates will increasingly become a necessity for producers and consumers so that more producers will apply for halal certificates. Products that have a halal certificate have quite high selling points because currently halal products are a trend in the world of trade.

### **3. LAW NUMBER 33 OF 2014 CONCERNING GUARANTEE OF HALAL PRODUCTS AS AN EFFORT TO PROTECT MUSLIM CONSUMERS**

Indonesia is an Islamic country with the largest Muslim population in the world, around 86% of Indonesia's population is Muslim, so the law of origin of food in Indonesia is halal. The issue of halal products has been a polemic in Indonesia, including: (1) In 1970 the case of machine slaughtering animals in Jakarta, (2) 1980 cases of the legality of rabbit meat, (3) 1982 cases of legality of consuming frog meat, (4) cases of products not halal in 1988 which had caused turmoil. The issue of lard that occurred at that time was the result of Trisusanto's research with students which resulted in several processed products containing lard and (5) In 1993 the MUI deliberation on alcohol was held. (Mudzhar, 1993)

Standards for food, medicine, and cosmetics products that are needed by Muslim consumers are those that meet the provisions of Islamic teachings, namely halal and tayib. Due to the very modern production technology and the enactment of the free market era, it is not easy for every Muslim consumer to ensure the halalness of every product that is consumed easily and quickly. There is a need for a third party as a certification body that controls business actors to comply with the provisions of the halal standard at every stage of production activities. Furthermore, Muslim consumers can easily obtain information on the halalness of a product that they will consume by looking at the halal label on each product package. Standardization, certification and labeling of halal and tayib products are intended to prevent Muslim consumers from products that are non-halal (haram) and non-tayib (not good).

In an Islamic perspective, the obligation to consume halal and tayib products binds every individual who is Muslim to carry it out. Its implementation is divided into two perspectives, namely that as mahdlah worship, it is without state interference except providing facilities, whereas in the context of muamalah which is civil or public it involves state power. (Azhari, 1999: 121). Muslim societies are not free without control in utilizing all natural resources, consuming them or producing something to fulfill their needs. They are bound by the provisions of the creed and religious ethics, as well as Islamic laws in general. To make this happen in real life, the role of government is very much needed. (Masyhuri, 2005: 45-46). Yusuf al Qardhawi emphasized that the Government has an important role in implementing norms and ethics in the field of muamalah. The government has the authority to issue regulations and impose sanctions on those who break them. (Masyhuri, 2005: 45-46).

Law No. 33 of 2014 concerning Halal Product Guarantee is a legal basis or source of law applicable in the legal state of the Republic of Indonesia as written law. Assessed from Law No. 33 of 2014 concerning Halal Product Guarantee, the term "halal" itself explains that the provisions of Law no. 33 of 2014 is legal protection for Muslims with regard to using and / or consuming various products, both food, beverages, medicines and others in a halal manner. For this reason, the Jimly Asshiddiqie category is a statutory regulation that is specific in nature, because of the specificity of its material binding capacity, which only applies internally to be the place of Law No. 33 of 2014 categorically. (Triyanto, 2017: 149).

According to the substance of Law no. 33 of 2014 concerning Halal Product Guarantee, is the answer to the situation and condition so far that in reality, not all of the products circulating in the



community are guaranteed to be halal, so that legal guarantees for the Muslim community do not get their place and attention. On this basis, the presence of Law no. 33 of 2014 concerning Halal Product Guarantee, is intended to provide assurance that legal protection for Muslim consumers has been regulated and determined as an obligation, as in Article 4, states that "products that enter, circulate and are traded in the territory of Indonesia must be certified halal."

To support that Law no. 33 of 2014 is specifically designated to protect Muslims, apart from the term "halal" it is also proven in the provisions of Article 1 point 1 which states that "halal products are products that have been declared halal in accordance with Islamic sharia."

According to the substance of Law no. 33 of 2014 concerning Halal Product Guarantee, is the answer to the situation and condition so far that in reality, not all of the products circulating in the community are guaranteed to be halal, so that legal guarantees for the Muslim community do not get their place and attention. On this basis, the presence of Law no. 33 of 2014 concerning Halal Product Guarantee, is intended to provide assurance that legal protection for Muslim consumers has been regulated and determined as an obligation, as in Article 4, states that "products that enter, circulate and are traded in the territory of Indonesia must be certified halal." (Triyanto, 2017: 149)

After the enactment of Law No. 33 of 2014 concerning Halal Product Guarantee, there is a new institution that functions similarly to LPPOM MUI called the Halal Product Guarantee Agency, abbreviated as BPJPM, which according to Article 1 point 6, is formulated that "Halal Product Guarantee Agency, hereinafter abbreviated as BPJPH, is an agency that established by the Government to provide guarantees for halal products." In accordance with this formula, BPJPH is an agency established by the Government to administer halal product guarantees." In accordance with this formula, BPJPH is a new institution formed by the government so that it is different from the existing institution, namely LPPOM MUI which is a form of MUI. Thus, institutionally there is more than one institution with the same authority.

Law No. 33 of 2014 concerning Halal Product Guarantee instructs the Government to compile 7 government regulations and 13 ministerial regulations. There is still the possibility of arranging the implementation of halal and Thai product guarantees to improve the protection of consumers and business actors in Indonesia. This is a manifestation of the open system of consumer protection law in Indonesia which provides opportunities for the birth of new laws and regulations which substantially increase the protection of consumers and business actors.

According to Article 6 of Law no. 33/2014, states that in implementing Halal Product Guarantee, BPJPH has the authority to:

- a. Formulating and stipulating JPH policies;
- b. Establishing JPH norms, standards, procedures and criteria;
- c. Issue and revoke halal certification and halal labels on products;
- d. Registering halal certificates for foreign products;
- e. Conducting socialization, education and publication of halal products;
- f. Accrediting the halal inspection agency (LPH);
- g. Registering halal auditors;
- h. Supervise halal product guarantees;
- i. Performing halal auditors coaching; and
- j. Cooperating with domestic and foreign institutions in the field of implementing halal product guarantees.

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The law of halal and thayib products which is derived from the provisions of Islamic law has become positive law. This is in line with Abdul Ghafur Anshori's opinion, which explains that if the regulations are determined by an authorized agency, in this case the government is legitimate and determined according to applicable criteria, then these regulations are legal or legal and have juridical power (validity). (Anshori, 2006: 40)

The Halal Product Guarantee Law, ideally, intends to integrate the concepts of halal products to be consumed or used by Muslim consumers according to Islamic law, into material law and formal law in the law as a sub-national legal system. The halal aspect of a comprehensive product includes the raw materials used in product processing, product processing and product marketing. Raw materials and products according to this law adopt a broader approach, which includes food, beverages, medicines, cosmetics, biological chemical products and genetic engineering. Products produced by halal products are subject to the provisions of the entire series of production which include equipment, production space, storage, distribution and presentation that are halal according to sharia. The halal production process includes the halal production process with animal raw materials, vegetable raw materials, and biological chemical or genetic engineering processes. (Adam, 2017: 160)

The provisions regarding consumer protection have actually been stated in the preamble of paragraph IV of the 1945 Constitution which states that the Republic of Indonesia protects the entire Indonesian nation and spills Indonesian blood. So it is clear, as an Indonesian, consumers deserve legal protection. The birth of consumer organizations in Indonesia was motivated by many problems that were concerning and detrimental to consumers, while the position of consumers was very weak.

The rationale for the need for a formulation in guaranteeing the protection and legal certainty of halal food, among others: first, a philosophical basis. For Muslims, consuming food and other products is not just to meet physical needs but there are other, more important goals, namely worship and proof of obedience to Allah SWT. by upholding Islamic teachings through the disclosure of *maqâshid al-syarî'ah*. The Koran and Hadith as the source of Muslim law have clearly and clearly stipulated that there are food and other products that are lawful for consumption or use, and vice versa, there are food and other products that are forbidden to consume or use, as well as food and other products that are processed by genetically modified products. raises doubts about its lawfulness. Second, the sociological basis. The position of the Indonesian Muslim community is that they are the largest consumers of food and other products. They have constitutional rights to obtain legal protection for food and other products in accordance with their religious beliefs. Therefore, they need to be given legal protection in the form of guarantees of the halalness of the food they consume and other products used. (Burlian, 2014: 50)

This situation demands legal certainty and halal guarantee for consumers, especially the Muslim community, as the largest consumers of food and other products. The social position of the Islamic community is one of the reasons why it is necessary to regulate and organize halal product guarantees in a law.

#### 4. CONCLUSION

The enactment of Law No. 33 of 2014, causing the institution that has the authority to issue halal certification, namely MUI, will shift to an institution called the Halal Product Guarantee Agency (BPJPH), although the function and role of MUI is still recognized because it is a BPJPH partner. Halal certification is an acknowledgment of the halalness of a product issued by BPJPH based on a written halal fatwa issued by MUI which provides legal force, guarantees of legal protection in legal relations between business actors and Muslims as consumers of a product marked with halal labeling. Government protection efforts in food matters need to be supported by juridical instruments in the form of legislation. At the technical level, the halal certification process must include parties deemed competent in this matter, namely the Indonesian Ulema Council and the Ministry of Health.

#### REFERENCES

- Bagian Proyek Sarana dan Prasarana Produk Halal Direktorat Jenderal Bimbingan Masyarakat Islam dan Penyelenggaraan Haji Departemen Agama, 2003, *Modul Pelatihan Auditor Internal Halal*, Jakarta: Tanpa Penerbit.
- Departemen Agama RI, 2008, *Panduan Sertifikasi Halal*. Jakarta: Direktorat Jenderal Bimbingan Masyarakat Islam dan Penyelenggaraan Haji.
- Ghafur Anshori, 2006, *Filsafat Hukum*, Gadjah Mada University Press, Yogyakarta.

- Hasan Bisri, et.al., 1995, *20 Tahun Majelis Ulama Indonesia*, Jakarta: MUI.
- Hazairin, 1990, *Demokrasi Pancasila*. Jakarta: Rineka Cipta.
- M. Atho Mudzhar, *Fatwa-Fatwa Majelis Ulama Indonesia: Sebuah Studi Hukum Islam di Indonesia 1975-1988*. Disertasi pada UCLA Terj. Soedarso Soekarno dari judul Bahasa Inggris, *Fatwas of The Council of Indonesian Ulama: Astudy of Islamic Legal Thought in Indonesia 1975-1988*. Edisi Dwibahasa (Indonesia dan Inggris), (Jakarta: INIS, 1993).
- M. Quraish Shihab, 2000, *Tafsir Al-Mishbah Pesan, Kesan, dan Keserasian Al-Qur'an*, Volume 2, Penerbit Lentera Hati, Ciputat.
- Mashudi. 2015, *Konstruksi Hukum dan Respons Masyarakat Terhadap Sertifikasi Halal: Studi Socio-Legal Terhadap Lembaga Pengkajian Pangan, Obat-Obatan, Dan Kosmetika Majelis Ulama Indonesia*, Yogyakarta: Pustaka Pelajar.
- Masyhuri, 2005, "Peran Pemerintah dalam Perspektif Ekonomi Islam," dalam Jusmaliani (Editor), 2005, *Kebijakan Ekonomi dalam Islam*, Kreasi Wacana, Yogyakarta.
- MUI, "Keputusan Ijmak Ulama Komisi Fatwa Se-Indonesia Ketiga Tahun 2009 tentang Konsumsi Makanan Halal," dalam Ma'ruf Amin, et. all., (Tim Penyusun), 2011, *Himpunan Fatwa MUI Sejak 1975*, MUI, Jakarta.
- Tahir Azhari, 1999, *Posisi Peradilan Agama dalam Undang-Undang No. 35 Tahun 1999: Perspektif Hukum Masa Datang*, Ditbitbapera Islam-Fakultas Hukum UI-Pusat Pengkajian Hukum Islam dan Masyarakat, Chasindo, Jakarta.
- Thobieb Al-Asyhar, 2003, *Bahaya Makanan Haram Bagi Kesehatan Jasmani dan Kesucian Rohani*, Jakarta: Al-Mawardi Prima
- Yusuf Qardhawi, 2003, *Halal Haram dalam Islam*, (terjemah) Wahid Ahmadi et.al, Solo, Era Intermedia.
- Peraturan Perundang-undangan:
- Undang-Undang Dasar Negara Republik Indonesia Tahun 1945.
- Undang-Undang No. 33 Tahun 2014 tentang Jaminan Produk Halal,
- Amirsyah Tambunan, "Hak Konsumen dalam Perspektif UU No. 8 Tahun 1999", dalam *Jurnal Halal*, No. 101 Th. XVI, Tahun 2013, Jakarta: LPPOM MUI.
- Anton Apriyantono, "LPPOM MUI Harus Diperkuat", dalam *Jurnal Halal*, No. 99 Th. XVI Tahun 2013, Jakarta: LPPOM MUI.
- Azmi Siradjuddin, "Regulasi Makanan Halal Di Indonesia", dalam *Tapis*, Vol. XIII, No. 01 Januari-Juni 2013.
- Jazuli Juwaini, "UU JPH Untuk Melindungi Ummat", dalam *Jurnal Halal*, No. 95 Th. XV Tahun 2102, Jakarta: LPPOM MUI.
- Lukmanul Hakim, "Halal Menentramkan Umat", dalam *Jurnal Halal* No. 91 September-Oktober Th. XIV, 2011, Jakarta: LPPOM MUI.
- Murjani, Sistem Jaminan Produk Halal Dan Thayib Di Indonesia: Tinjauan Yuridis Dan Politis", dalam *Jurnal Fenomena*, Vol. 7, No.2, 2015.
- Paisol Burlian, "Reformulasi Yuridis Pengaturan Produk Pangan Halal Bagi Konsumen Muslim Di Indonesia", dalam *Jurnal Ahkam*, Vol. XIV, No. 1, Januari 2014.
- Panji Adam, Kedudukan Sertifikasi Halal Dalam Sistem Hukum Nasional Sebagai Upaya Perlindungan Konsumen Dalam Hukum Islam", dalam *Jurnal Amwaluna*, Vol. 1, No.1, Januari 2017.
- Witanti Astuti Triyanto, "Sertifikasi Jaminan Produk Halal Menurut Undang-Undang Nomor 33 Tahun 2014 (Perspektif Hukum Perlindungan Konsumen)", dalam *Lex Administratum*, Vol. V/No. 1/Jan-Feb/2017.
- Yusuf Shofie, "Jaminan Produk Halal Dari Sudut Pandang Hukum Perlindungan Konsumen", dalam *Jurnal Syariah* 3, November 2015.
- Anonim, "Soal Sertifikasi Halal, Golkar Minta MUI Tetap Dilibatkan", JPPN.com (Jaringan Berita Terluas di Indonesia), Jum'at, 28 Februari 2014, Sumber: <http://www.jpnn.com/read/2014/02/28/219189/Soal-Sertifikasi-Halal,-Golkar-Minta-MUI-Tetap-Dilibatkan->, diakses 2 Februari 2021.
- Endah Dwi Rohayati, "Politik Hukum Islam Dalam Regulasi Jaminan Produk Halal (Kajian UU No. 33 Tahun 2014 tentang Jaminan Produk Halal)", melalui [www.digilib.uinsby.ac.id](http://www.digilib.uinsby.ac.id), diakses tanggal 2 Februari 2021.

## Prioritizing Higher Order Thinking Skills (HOTS) Based on the 2013 Curriculum on Language Learning Evaluation at the Tertiary Level Education in Indonesia

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### ABSTRACT

The 2013 Curriculum is designed to revise many aspects of language learning for tertiary level students which is related to international evaluation standard based on Higher Order Thinking Skills (HOTS). This study investigates the percentage of HOTS used in English learning evaluation and its implications to language learners at tertiary level education in Indonesia. By conducting a descriptive qualitative method, an English textbook of 2013 Curriculum for the tenth grade of tertiary level students in Indonesia is analyzed in this research. The data collected by using checklist at four steps of selecting, classifying, coding and presenting percentage of HOTS. The result shows that HOTS is prioritized in the textbook learning evaluation in which the questions are dominated by Higher Order Thinking Skills on C4, C5 and C6. Evaluating level (C5) plays the most dominant percentage (38.57%) in the level of questions from the textbook. As the implications, HOTS should be prioritized at tertiary level education in Indonesia because of these reasons: (1) The needs of students' qualifications required by challenges in this Industrial Revolution 4.0 of 21st century to have the opportunities getting job/professions in the work places, (2) The target of Curriculum to gain Students' Competence on: Critical Thinking, Creativity, Collaboration and Communication must be achieved, and (3) HOTS should be applied in any disciplines of subject matter in Indonesia since the primary level up to the tertiary ones because it must be started earlier to grasp the result faster.

**Keyword:** HOTS, the 2013 Curriculum, learning evaluation, tertiary

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### 1. INTRODUCTION

The Ministry of Education and Culture of Republic Indonesia (Kemendikbud RI) has changed Permendikbud No. 59 / 2014 to be Permendikbud No. 36/ 2018. It is about revision of the 2013 Curriculum for tertiary level education in Indonesia which refers to the external challenges dealt with globalization and any aspects of environment, technology and information, creative industry, capital building; cultures, arts and educational development in international level. Widana (2017:89) states that students' assessment developed by teachers are expected to encourage the students' higher order thinking skills of, creativity, and build their self-reliance to solve problems. It seems to raise the analytical level test or higher order thinking questions up to 10 percent for each year in the evaluation of English textbook.

Students at the tertiary level education in Indonesia are also prepared to face education in the Industry Revolution 4.0 aims at developing students' competence in 21<sup>st</sup> century which consisted of three main components in thinking, doing and living in the world. Thinking components involve critical thinking and problem solving. Doing/Action Components related to the ability on communication, collaboration, literacy of data, technology and human kinds. Living in the world components includes students' initiatives, survival life, self-direction, global interaction and social responsibility.

The appearance of new literacy at the tertiary level students concerns with: (1) Students' ability on reading, analyzing and using information (big- data) digitally, (2) Students' ability in technology literacy, the mastery on operating machines, technology application (coding, artificial intelligence and engineering principles), and (3) Human-kind literacy relates to the skills of communication, collaboration and living in the world are such kinds of students' at the tertiary level education in Indonesia in this 21-era.

In relation to this development of education globally, Widana (2017:96) explains the 2013 Curriculum is designed to revise many aspects of learning for tertiary level students which related to (1) Content Standard in which reducing the irrelevant materials and enlarging the relevant materials for students in tertiary level which cover students' needs to be creative and critical thinking learners as international standardizations. (2) Evaluation standard which is adapting some models of evaluation and based on the international standard of assessment. There are some important competencies needed, namely ; (1) Critical Thinking as students' ability in thinking critically to solve any problems contextually by using logical and rationale reasons. (2) Creativity that motivates students to think creatively in order to find some variations of problem solving solutions, new strategies or finding uncommon ways that haven't been used before. (3) Collaboration to facilitate students in team-works, adapting human differences, ability in living together on works' purposes. (4) Communication skill to provide students in gaining idea, messages or any information and how to interpret the information well, how to argue comprehensively in any context of situation.

Unfortunately, the problem occurs when data of National Selection of Entering University Test on Guidance Program 2018/2019 in 136 tertiary education levels of 34 Provinces in Indonesia shows that most of the questions of 1.779 items in National Examination used Lower Order Thinking Skills (LOTS) at Level-1 and Level-2. There are only 27 schools arranged 20% the question items based on HOTS. There are 84 schools have lack of 20% questions based on HOTS. Most teachers do not know yet whether their questions have been HOTS or not. This unexpected condition is really far away from Curriculum 2013 needs.

Moreover, the result study of International Program for International Students Assessment (PISA) shows that students' achievement on reading literacy, mathematics literacy and science literacy is still low also. They got lack ability on (1) integrating information, (2) generating idea/ information, (3) Generalizing cases and solutions, (4) investigating problems. Ideally, these components are totally needed for tertiary level students to be critical, creative and logical thinking in learning. Besides, many previous researches declare that there are many items of questions in tertiary level English Text book use Lower Order Thinking Skills (LOTS). Apriani (2019) observes that the most dominant level questions in one of English textbook for tertiary level education is on remembering level (C1) with 27 items out of 67 questions or 40,29%.

The unexpected phenomena above show HOTS in 2013 Curriculum as bases of designing language learning evaluation for tertiary level students in Indonesia has not been successfully applied. The government expects the students tend to be more critical and analytical in their thinking so they can solve the problems they face in their daily lives. Consequently, the students are unable to master 4 Basic Competences (4C) in facing Industrial Revolution in the 21<sup>st</sup> era, namely: (1) *Critical Thinking* aims at increasing students' ability in problem solving, finding solutions to overcome problems variety by using contextual, critical, logical and rational ways of thinking, (2) *Creativity* is to develop students' new active process to create new activity, strategy, and different ways of finding solutions in their daily life, (3) *Collaboration* to facilitate students in working together in a tolerated-team and living together with different perspectives in a harmony of raising the same target, (4) *Communication* to reveal expressions, getting information and interpreting general argument effectively.

In line with the background of the study above, the problems investigated in this study are dealing with: (1) the percentage of HOTS used in language learning evaluation from an English Textbook for tertiary level education, and (2) the implications of using HOTS to language learners at tertiary level education in Indonesia. Therefore, this study deals with prioritizing HOTS based on the 2013 Curriculum on Language Learning Evaluation at the Tertiary Level Education in Indonesia.

## 2. LITERATURE REVIEW

### A. HOTS in the 2013 Curriculum

Anasy (2016: 56) elaborates higher order thinking is thinking on a level that is higher than just memorizing facts or telling something back to someone else. It is exactly the way it is higher than a common lower thinking itself. Evaluation cannot be separated from the application HOTS because the aims of HOTS is to increase students' creative and critical thinking in effective learning (Atiullah:2019). The concept of HOTS refers to Higher Order Thinking Skills in evaluating students' learning achievement by considering these following aspects:

1. Deciding the appropriate aspects to be scored.
2. Designing the test instruments to encourage students in answering critical questions based on their higher knowledge and skill.
3. Deciding solutions to overcome students' problems in learning.

Brookhart (2010) explains Higher Order Thinking Skills includes 3 aspects in evaluation system, namely:

1. Providing the stimuli for students' way of thinking in answering test by using some texts, video, scenario, discourses, and cases or problem solving.
2. Creating the certain problems to be solved by students appropriately.
3. Distinguishing the level of difficulties based on low, medium and high level of difficulties.

Collins (2014: 103) adds Higher order thinking is thinking on a level that is higher than memorizing facts or telling something back to someone exactly the way it was told to you. Questions based HOTS can train students to sharpen their skills in learning and increasing skill and competence in line with the world challenges, especially for the tertiary level education students who will go directly to the stakeholder in the work places. Learning evaluation base on HOTS at tertiary students can increase students' self-confidence, critical thinking, innovation, self-reliance by training to overcome the real problems with the update-solutions found by students.

### B. Revised Bloom's Taxonomy

In the 2013 Curriculum (K-13 Curriculum), the items of questions on HOTS are the instruments that used to measure students' ability in higher level of thinking referred to Revised Bloom's Taxonomy which is not only remembering (C1), understanding (C2), or applying (C3), but questions on HOTS must be able to measure students' ability in analyzing (C4), evaluating (C5) and creating (C6). Ideally, these components are totally needed for tertiary level students to be critical, creative and logical thinking in learning.

Therefore, Damanaik (2019) adds that language learning evaluation based on HOTS must be related on (1) integrating information, (2) generating idea/ information, (3) Generalizing cases and solutions, (4) investigating problems. The dimension of thinking in terms of Taxonomy Bloom revised by Anderson & Krathwohl (2001) consisted of: (remembering-C1), (understanding-C2), (applying-C3), (analyzing-C4), (evaluating-C5), (creating-C6). In general, questions on HOTS used the domains on: (analyzing-C4), (evaluating-C5), and (creating-C6). Operational Verbs used on Taxonomy Bloom are: analyzing, evaluating, and creating. It is also important to be applied in transferring lessons to the students creatively, especially to decide indicator to be achieved in learning process.

Brookhart (2010:89) emphasizes that questions refer to HOTS based are recommended to be applied in any kinds of test for tertiary level students because of these characteristics:

1. Measuring the skill of high critical thinking as a process of analyzing, reflecting, applying concept, arranging and creating. The higher level of critical thinking can help students to solve problems by their Critical Thinking, Creative Thinking, Reasoning, Decision Making, and Solving Problems. Students' ability in critical thinking is compulsorily needed by each student in this modern era.
2. The ability of problem solving can be gained by doing HOTS test- based which consisted of: (a) Ability in solving unfamiliar problems to find the new unfamiliar solutions also. (b) Skills to find out the strategies which used to overcome problems from different ways of thinking. (c) Ability in finding new different solutions from the previous ones.
3. Higher Order Thinking Skill can be trained in the classroom by teachers. In order to gain this,

teachers and learning strategies in learning process must be creative and higher order thinking also to give chances and challenges for students to think hard and creative also, so that the learning achievement will be maximally based on the higher level of education.

4. HOTS must be based on Contextual and Attractive Learning Problems for the Contextual and Trending Topic given by the lecturers. Questions must be based on the real fact happened in students' daily life. There are some concrete problems closely related to students' problem at present, such as: environmental problems, health, social interaction, art and cultures, and the application of technology for any kinds of aspects in our life today.
5. Involving facts, logical reasons and rationale in problem solving. In this case, the answer must be logics, ethics and aesthetics towards the questions all.

### 3. RESEARCH METHOD

This study conducted by applying a descriptive qualitative research design is applied in this research in which the data of this study carried out by using document or content analysis. It is a research method which is intended to written or visual materials for the purpose of identifying specified characteristics of the material, like: textbooks, newspapers, speeches, web-pages, television/radio programs, advertisements, musical compositions, or any of a host of other types of documents (Ary, et al 2010:29). This method conducted in this study by analyzing reading exercises on English textbook of 2013 Curriculum for tenth grade of tertiary level students by The Ministry of Education and Arts, Indonesia Republic (Kemendikbud RI). The reading exercises were collected from the textbook and then employed the percentage for each question to determine the distribution of each level of Higher Order Thinking Skills (HOTS) level.

All reading questions in English textbook of 2013 Curriculum for tenth grade of tertiary level students published by The Ministry of Education and Arts, Indonesia Republic is the source of the data. This textbook consisted of fifteen units, one hundred forty three pages and 70 questions of reading questions to be analyzed.

The instrument of observation was checklist. Checklist is a list of data variable that will be collected (Ary, et al : 2010 29). The observation checklist contained six components of cognitive domain of Revised Bloom's Taxonomy. The researcher marked (√) in the columns of the checklist if the reading exercise was using the component of cognitive process of Revised Bloom's Taxonomy. The use of checklist belongs to document analysis as technique of collecting data. A documents analysis is research method applied to written or visual materials for the purpose of identifying specified characteristics of the materials analyzed can be textbook, newspaper, web paged, etc. (Ary, Jacobs and Sorensen: 2010). The data in this research collected by the doing some steps, namely: (1) Reading the texts and all related exercises in the English textbook, (2) Identifying the reading texts and related exercises in the textbook to be categorized into the specific level of HOTS, (3) Coding the reading texts and the exercises from the textbook into the specific format of table of selection.

After collecting all the data from the English textbook, there are some steps of analyzing data have been done, namely: (1) Selecting reading questions from the book and identifying their forms. (2) Classifying the reading question based on cognitive domain of HOTS, and (3) Coding the reading question by using checklist mark (√) as the domain of revised Bloom's Taxonomy in order to know which level they cover : (C1) Remembering, (C2) Understanding, (C3) Applying, (C4) Analyzing, (C5) Evaluating, and (C6) Creating by making a checklist table consists of 4 columns; number, question, level of Revised Bloom's Taxonomy, and the percentage of each cognitive level on Higher Order Thinking Skills (HOTS) level. The detail classifications on Higher Order Thinking Skills (HOTS) and Lower Order Thinking Skills (LOTS) are described in this following table:

**Table 1 Cognitive Level of Revised Bloom's Taxonomy by Anderson and Krathwohl.**

No	Reading Question	Activities (Instructional Verbs or Questioning Stems)	Cognitive Level of Bloom's Taxonomy					
			C1	C2	C3	C4	C5	C6
The number of reading question item.		Instructional verbs or questioning stems stated on the reading questions in the books.	The appropriate cognitive level of the instructional item based on Revised Bloom's Taxonomy.					

#### 4. RESEARCH FINDINGS

##### A. Result

There are many questions belong to Evaluating level (C5) and Creating level (C6) of Higher Order Thinking Skills prioritized in English textbook of 2013 Curriculum for tenth grade of tertiary level students. The percentage is described in the following table.

**Table 2.**

**The Percentage of HOTS in English Text Book**

No	Cognitive Levels	Frequencies	Percentage
1	Remembering	-	-
2	Understanding	3	4,28%
3	Applying	5	7,14%
4	Analyzing	11	15,71%
5	Evaluating	27	38,57%
6	Creating	24	34,28%
		<b>70</b>	<b>100%</b>

The above table shows that HOTS is prioritized in language assessment in which the questions are dominated by Higher Order Thinking Skill on C4, C5 and C6 as well. The evaluating level of HOTS plays the most dominant percentage (38.57%) in the level of questions from the textbook.

**Table 3.**

**Cognitive Dimension Percentage in the Textbook**

No	Cognitive Dimension Level	Frequencies	Percentage
1	Low Order	Remembering	-
2	Thinking	Understanding	3
3		Applying	5
4	High Order	Analyzing	11
5	Thinking	Evaluating	27
6		Creating	24
	<b>Total</b>	<b>70</b>	<b>100%</b>

The above table shows that the exercises in the textbook covered five kinds of cognitive dimensions on Revised Bloom's Taxonomy; Understanding (4.28%) and Applying (7.14%). Those are



related to Lower Order Thinking Skills (LOTS). However, there many kinds of Higher Order Thinking Skills (HOTS) are implemented in that textbook, namely: Analyzing (15.71%), Evaluating (38.57%), and Creating (34.28%). So, the highest percentage belongs to the Evaluating level which obtains 27 out of 70 questions or 38.57%. The distribution of Lower Order Thinking Skill (LOTS) which consisted of remembering, understanding, and applying obtained 8 questions (11.42%). The distribution of Higher Order Thinking Skill (HOTS) which consisted of analyzing, evaluating, and creating obtained 62 questions (88.56%) Therefore, this study reveals that Higher Order Thinking Skill (HOTS) had been strongly implemented in this English textbook. Here are the examples of reading questions evaluation of English textbook which are consisted of Higher Order Thinking Skills (HOTS) Level.

As the implications, HOTS should be prioritized at tertiary level education in Indonesia because of these reasons: (1) The needs of students' qualifications required by challenges in this Industrial Revolution 4.0 of 21st century to have the opportunities getting job/professions in the work places, The target of Curriculum to gain Students' Competence on: Critical Thinking, Creativity, Collaboration and Communication must be achieved, and (3) HOTS should be applied in any disciplines of subject matter in Indonesia since the primary level up to the tertiary ones because it must be started earlier to grasp the result faster.

### **Relevance of HOTS to Professions, Curriculum Target and Subject Matter Mastery**

Students at tertiary level education in Indonesia are prepared to have some qualifications in finding out job opportunities in the job field. In the era of 21<sup>st</sup> century with Industrial Revolution 4.0, Higher Order Thinking Skills are extremely needed in the work places or professions. One has to keep in mind that skills such as Creativity and Imagination, Collaboration, Critical thinking, Citizenship, Student Leadership and Digital Literacies are some important requirements needed in the field works of any kinds of professions.

Kestha (2013:67) elaborates that any kinds of professions in this era need HOTS as the workers' way of thinking in the work places. The social, natural, law, technology, administration, education, information, art and cultures, languages, literature and many other professions in this digital era have to master HOTS in working places. Questions based HOTS can train any professions to sharpen their workers' skills in learning and increasing skill and competence in line with the world challenges, especially for the fresh graduated students from tertiary level education students who will go directly to the stakeholder in the work places.

Collins (2014) discusses HOTS at tertiary students can increase their self- confidence, critical thinking, innovation, self-reliance by training to overcome the real problems with the update-solutions found by themselves. Developing sense of belongingness to their professions is one of the final goals of HOTS itself. Many kinds of problems occurred in a certain work place can be overcome by worker's ability in finding the appropriate solutions well. The critical thinking in their context of daily life problems will help workers in integrity of working. HOT skills in students' belief can enable them to find the certain sophisticated job vacancy as the basic concept which will shape their works and all activities they do in the work field practices at this era of Revolution Industry 4.0. The way they plan the works, the decisions that they make, and the working strategies they apply in the work places are highly influenced by their beliefs.

Measuring the skill of high critical thinking as a process of analyzing, reflecting, applying concept, arranging and creating. The higher level of critical thinking can help students to solve problems by their Critical Thinking, Creative Thinking, Reasoning, Decision Making, and Solving Problems. Students' ability in critical thinking is compulsorily needed by each student in this modern era.

As Higher Order Thinking Skills (HOTS) and literary skill become important needs for the students to have in the 21st century learning, the teachers must have sufficient knowledge and understanding about it. The English teachers' beliefs about Higher Order Thinking Skills (HOTS) mainly increase students' graduation to find out each profession successfully. That's why, HOTS in learning any subject at tertiary level education is extremely needed to be applied in order to help students finding out job vacancies easily and successfully, especially in this disruption era of Revolution Industry 4.0.

Higher Order Thinking Skills include socio-cultural values in any kinds of academic levels of study. It is intended to develop character building and students' nationalism. Besides, HOTS is also

*(Neni Afrida Sari Harahap)*

applicable to build up students communicative strategies to relate with others successfully written or in any other spoken languages. Widana (2018:94) states HOTS can be used in mathematics to help students in critical thinking and it becomes a successful media to behave politely and gain the objectives of human life. It is happened because the concept of HOTS in Bloom Taxonomy Revised:

- C-4 (Analysis) can grasp the knowledge contextually,
- C-5 (Evaluation) can apply the knowledge comprehensively,
- C-6 (Creation) can create the new knowledge creatively.

## B. DISCUSSIONS

### HOTS in Language Learning Evaluation

The objective of learning English at the tertiary level education in Indonesia is to develop students' potential on Communicative Competence. This competence means the ability on mastering interpersonal text, transactional and functional text by using any kinds of written and spoken text. This aim is done structurally and accurately based on the lexicogrammatical features which are logically acceptable.

Based on regulation from the Ministry of Education and Art of Republic Indonesia (2018), learning evaluation must be able to encourage students' higher order thinking skills on creativity and build their self-reliance to solve problems. It means teacher have to design learning evaluation minimally consisted of 10 percent questions of analytical test level to reflect the significant application on HOTS based on the requirements of the 2013 Curriculum. It is intended to enable language learners complete their tasks in all language skills communicatively. Therefore, language test can be designed for reading, speaking, listening and writing comprehension test critically towards the issues happened in the world. In this case, higher order thinking skills can be applied in designing language tests by using three components of cognitive skills on Bloom Taxonomy, namely; analysis, synthesis, and evaluation.

In line with Widana (2017:79), HOTS is relevant to be applied in any kinds of academic disciplines includes language learning because the aspects of HOTS are in line with the global needs in this 21st century in terms of these following conditions:

- (a) The content of learning evaluation based on HOTS should be factual, situational, procedural to be critical thinking in learning any kinds of academic fields.
- (b) The content in HOTS reflects moral values, ethics, nationalism and character building resources in students' family and society.
- (c) All learning aspects on HOTS involve contextual learning kits which closely related to students' daily life. Learning indicators, objectives, materials, sources, media and evaluation are designed to be connected to the use of the lessons into the real life advantageously.
- (d) Learning objectives are designed to gain communicative competence on transactional, interpersonal and functional text based on Genre: descriptive, recount, narrative, factual report, analytical exposition, procedure, news, etc.
- (e) Higher Order Thinking Skills include socio-cultural values in any kinds of academic levels of study. It is intended to develop character building and students' nationalism.

The importance of Higher Order Thinking Skills (HOTS) in language learning can be content of materials and evaluation to gain cognitive skills in 21st century challenges by applying these following practices: finding idea to write question that assess HOTS, managing time, mapping learning domain, determining level of difficulty, and building literacy assessment. This finding highlights that it is essential for teachers at tertiary level education to have a professional program, particularly on how to construct good test that cover the aspect of HOTS. Thus, this can minimize the challenges that the students found in this era of Revolution Industry 4.0.

1. Developing students' sense of belongingness to their regions and country (Local Genius). In this case, questions based on HOTS must be developed by the creative lecturers in accordance to the needs and situations in their own local areas. It can be done because teachers would be creative in choosing the certain topic or problems given based on the specific conditions in that region especially.

2. Many kinds of problems occurred in a certain area can be taken to be topic discussions and let students to find out the specific solutions to overcome it well. It will directly stimulate the students' critical thinking in their context of daily life problems.
3. Increasing Students' motivation in learning. Students need to be conscious that materials they learned must be valuable. That's why problem offered by teachers must be related to their society in order to encourage them to motivate to learn and find out the solutions based on their habits in society. This makes students aware of problems to be beneficial, contextual and applicable to be applied in their own daily life.
4. Increasing the quality and accountability of students' learning achievement because the items of HOTS test measure student's competence in critical thinking individually. Most of the answers are not existed in the text stimulated by the teachers. Students will force themselves to create any solutions as a critical learner. This transparent and accountability scores of students will be responsibly given to the stakeholder as the real quality and competence of our students, especially when our tertiary level students will be the qualified workers in the real work field.

## 5. CONCLUSIONS

HOTS had been prioritized in designing some questions on English textbook for the tenth grade of tertiary level education. There are five kinds of cognitive dimensions on Revised Bloom's Taxonomy; Understanding (4.28%) and Applying (7.14%). Those are related to Lower Order Thinking Skills (LOTS). However, there are many kinds of Higher Order Thinking Skills (HOTS) are implemented in that textbook, namely: Analyzing (15.71%), Evaluating (38.57%), and Creating (34.28%). So, the highest percentage belongs to the Evaluating level which obtains 27 out of 70 questions or 38.57%. The distribution of Lower Order Thinking Skill (LOTS) which consisted of remembering, understanding, and applying obtained 8 questions (11.42%). The distribution of Higher Order Thinking Skill (HOTS) which consisted of analyzing, evaluating, and creating obtained 62 questions (88.56%). It shows that HOTS is prioritized in learning evaluation in which the questions are dominated by Higher Order Thinking Skill on C4, C5 and C6. Evaluating level of HOTS plays the most dominant percentage (38.57%) in the level of questions from the textbook. The implications of this priority in learning evaluation, of course getting close to the tertiary level education in Indonesia because of the target of Curriculum to gain Students' Competence on: Critical Thinking, Creativity, Collaboration and Communication. Consequently, there are many opportunities to have job/professions in the work places will be gathered by the alumni of tertiary education level. The needs of students' quality required by challenges in this Industrial Revolution 4.0 of 21<sup>st</sup> century will be provided by mastering HOTS in students' daily life overcoming problems solutions. HOTS should be applied in any disciplines of subject matter in Indonesia since the primary level up to the tertiary ones because it must be started earlier to grasp the result faster. Therefore, it is suggested for all teachers who teach tertiary students education level to apply HOTS as the basic concept which will shape their students and all activities they do in the classroom practices. The way they plan the lesson, the decisions that they make, and the teaching method that they apply in the classroom are highly influenced by their beliefs on the implementation of HOTS. As Higher Order Thinking Skills (HOTS) and literary skill become important needs for the students to have in the 21<sup>st</sup> century learning, the teachers, school administrator, parents, and the all students must have sufficient knowledge and understanding about it. Moreover, stakeholders need to train their workers in enlarging HOTS through some seminars, workshops, in-service training to be professional workers. It is the way on how to perceive learners to be critical, creative, logical and rational thinker.

## REFERENCES

- AL-Bataineh, Adel & Brooks, Leanne. (2003). Challenges, advantages, and disadvantages of instructional technology in the community college classroom. *Community College Journal of Research and Practice*. 27(6), 473-484.
- Anasy, Z. (2016). HOTS (Higher Order Thinking Skill) in Reading Exercise. *TARBIYA: Journal of Education in Muslim Society*, 3(1), 51-63.
- Anderson, L. W. et al. (2001). *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives*. New York: Longman.

- Apriani, N. (2019). 'Evaluating The Higher Order Thinking Skills In Reading Exercises Of Efl Textbook "Pathway To English" For Tenth Grade Of Senior High School Students', 1-74.
- Ary, D., Jacobs, L. C. and Sorensen, C. (2010). *Introduction to research in education*. 8th edn. Belmont: Wadsworth Cengage.
- Atiullah, K., Fitriati, S. W., & Rukmini, D. (2019). Using Revised Bloom's Taxonomy to Evaluate Higher Order Thinking Skills (Hots) in Reading Comprehension Questions of English Textbook for Year X of High School. *English Education Journal*, 9(4), 428-436.
- Brookhart, Susan M. (2010). *How to Assess Higher Order Thinking Skill In Your Class*. Virginia. USA: Alexandria.
- Collins, R. (2014). *Skills for the 21st Century: teaching higher-order thinking*. Curriculum & Leadership Alexandria. Journals.
- Damanik, N. H., & Zainil, Y. (2019). The Analysis of Reading Comprehension Questions in English Textbook by Using Higher Order Thinking Skill at Grade X of SMAN 2 Padang. *Journal of English Language Teaching*, 8(1), 249-258.
- Febrina, F., Usman, B., & Muslem, A. (2019). Analysis of Reading Comprehension Questions by Using Revised Bloom's Taxonomy on Higher Order Thinking Skill (HOTS). *English Education Journal*, 10(1), 1-15.
- Kebudayaan, K.P. (2014). *Bahasa Inggris SMA/MA, SMK/MAK Kelas X*. Jakarta, Pusat Kurikulum dan Pembukuan, Balitbang, Kemendikbud.
- Keshta, A. S. and Seif, A. (2013). *Evaluating the Higher Order Thinking Skills in Reading of English for Palestine Grade Eight'*, Asian Journal of Education and e-Learning, 1(1), pp. 47-69.
- Krathwohl, D. R. (2002) 'A Revision of Bloom's Taxonomy: An Overview', Theory into Practice, 41(4), pp. 212-219.
- Lin, Ming Hung.(2011). A Study of the Effects of Digital Learning on Learning Motivation and Learning Outcome. *EURASIA Journal of Mathematics Science and Technology Education*.13 (7) : 14-23.
- Peraturan Menteri Pendidikan dan Kebudayaan Nomor 36 Tahun 2018  
Tentang *Perubahan atas Peraturan Menteri Pendidikan dan Kebudayaan Nomor 59 Tahun 2014 tentang Kurikulum 2013 Sekolah Menengah Atas/Madrasah Aliyah.*
- Peraturan Menteri Pendidikan dan Kebudayaan Nomor 37 Tahun 2018 Tentang *Perubahan atas Peraturan Menteri Pendidikan dan Kebudayaan Nomor 24 Tahun 2016 tentang Standar Kompetensi Lulusan Pendidikan Dasar dan Menengah.*
- Reed, C., O'Brien, T. G. and Kinnaird, M. F. (1997) 'Male Social Behavior and Dominance Hierarchy in the Sulawesi Crested BlackMacaque (Macaca nigra)', *International Journal of Primatology*, 18(2).
- Schunk, Dale H., Pintrici, Paul R., & Meece, Judith L. (2008). *Motivation in Education: Theory, Research, and Application*. Third Edition. New Jersey: Pearson Prentice Hall.
- Widana, I Wayan. (2017). Higher Order Thinking Skills Assessment (HOTS). *Journal of Indonesia Student Assessment and Evaluation (JISAE)*. <http://journal.unj.ac.id/unj/index.php/jisae/article/view/4859>, Vol. 3 No. 1 February 2017, pp. 32-44. ISSN: 2442-4919.
- Widana, I Wayan, dkk. (2017). *Modul Penyusunan Soal Higher Order Thinking Skills (HOTS)*. Jakarta: Direktorat Pembinaan SMA, Dirjen Dikdasmen, Kementerian Pendidikan dan Kebudayaan.
- Widana, I., Parwata, I., Parmithi, N., Jayantika, I., Sukendra, K., & Sumandya, I. (2018). Higher Order Thinking Skills Assessment towards Critical Thinking on Mathematics Lesson. *International Journal Of Social Sciences And Humanities (IJSSH)*, 2(1), 24-32. doi:10.29332/ijssh.v2n1.74
- Widana, I., Parwata, I., Parmithi, N., Jayantika, I., Sukendra K., & Sumandya, I. (2018). Higher Order Thinking Skills Assessment towards Critical Thinking on Mathematics Lesson. *International Journal Of Social Sciences And Humanities (IJSSH)*, 2(1), 24-32. doi:10.29332/ijssh.v2n1.74

## Vector Analysis of the Prayer Movement on Health Using Visual Media Multimedia Application Development Life Cycle

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### ABSTRACT

This study aims to determine the vector analysis in the prayer movement and to find out the benefits of the prayer movement on health using the visual media Multimedia Development Life Cycle (MDLC). The data collection technique uses the documentation method and data sources are obtained from primary data sources and secondary data (Qur'anic interpretation books, references related to vectors, prayer movements, health, previous research, articles, journals, and websites. Internet). The analysis technique used is deductive thinking techniques and maudhu'iy interpretation techniques. The results showed that: (1) According to a scientific perspective, vectors with the prayer movement can be added to a vector called the resultant vector obtained by several methods, namely the triangle method as well as bowing movements, the parallelogram method such as movement during prostration, the polygon method. the same is the case with bowing movements and movements towards i'tidal, and analytical calculations using the 2-way resultant formula. (2) According to the perspective of Al-Qur'an, when looking for the resultant force on a vector, it must be known the value and direction, namely the movement of one rikat prayer is equal to one 360 ° rotation. (3) The benefits of the prayer movement for health are that every movement that is correct and perfect and carried out continuously has many benefits that can be felt by the body.

**Keyword: Vector; Prayer; Health; Al-Qur'an; science;**

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### 1. INTRODUCTION

The Al-Qur'an has shown a new dimension to the study of natural phenomena and knowledge that exists in nature. In the Qur'an it is stated that Science or Science and the Qur'an are two aspects of the same truth and there is no contradiction between the two. The first revelation of the Al-Qur'an that was revealed to the Prophet Muhammad SAW also ordered Muslims to study knowledge. Natural science itself is generally defined as the study of the arrangement of objects and their development, while natural science (physics) investigates related phenomena, especially those observed from inanimate objects. In line with the times, it cannot be denied that all aspects of life, one of which is science and technology, have progressed and developed so rapidly. Initially, it was only based on one basic science, namely philosophy, along with the development of the times and due to the fruit of human thought which continuously sparked new ideas, science was expanding and having various variations following the times. The development of modern science that is known today stems from the development of the empirical method by Muslim scientists when Europe was being hit by the darkness of medieval civilization. Of course Muslim scientists base every activity on the Al-Qur'an.

In Islamic science, physics is part of the principles of natural philosophy which is widely discussed by the sixth Muslim scientists, under the title "natural philosophy". Ibn Sina, the originator of medical science and philosophy in Europe, replaced by the title Avicenna, has discussed this science at length in his work of syifa (healing) and fann (scientific technique). Related to science, science (Physics) is also a natural science which in a study is closely related to a vector concept. The concept of vector is a

concept that is important to be mastered by students, because there are so many vector concepts applied in everyday life. For example, motorbike driving speed and many more vector concepts are used in daily activities. A vector quantity is a quantity that has a value (magnitude) and direction, examples of vector quantities include displacement, velocity, acceleration, momentum, and force.

After learning various concepts about vectors, it can be contemplated that a vector is something that has an orientation, and something that has an orientation is human. In fact, man is like a vector that has a beginning and an end. Like when praying, there is a movement from the beginning to the end. In every correct prayer movement, an angle will be formed which is formed by the prayer movement (for example when bowing) an angle of  $90^\circ$  is formed, if in one prayer movement it is added, then the total number of angles is  $360^\circ$ . Likewise, when we want to determine the direction of the resultant vector, we will get the angle value that is enclosed by 2 vectors.

For every Muslim prayer is an obligation that must be performed according to the instructions of the Al-Qur'an and Sunnah. In this worship, there is spiritual communication between Muslims and His creator without any veil, a form of dialogue between the soul who occupies the body and the Supreme Being. Almost every Muslim can feel that prayers that are performed carelessly, just as an obligation, will never be able to form an identity that is orderly, balanced, and has a harmonious relationship with himself, his environment, and his Divine.

The prayer service has a special position in Islam. Allah SWT praises His faithful servants who always keep their prayer times. Individuals often begin to feel aware of the meaning of their health when they are experiencing illness (health problems), including those who enter adulthood. Health is expensive, how much it costs a person for treatment when he has to deal with a type of disease, such as cancer. It's no secret that medicines are very expensive. In fact, even though it has received subsidies from the government. A person's health status is closely related to how far the person's behavior habits are. Healthy behavioral habits will have a positive effect on his health, on the other hand, wrong habits tend to have a negative impact. As a result, individuals are susceptible to disease. So that, a person's health condition is closely related to some of the behavior habits of the individual concerned. To achieve a healthy life, healthy habits of behavior are also needed. In the 7th congress, the Al-Ijuz Al-Ilmi organization, an institution that specializes in researching the secrets and wonders of science contained in the Koran and Hadith, in Dubai Qatar in the congress contains the reasons for the obligation to pray in Islam, its impact on health, and the benefits of prayer for health. For some Muslims there are still those who have not received the health benefits of praying. For them, prayer is defined as an attempt to abort the obligation to command prayers. But that is not the case, because in every movement and every pronunciation that is said in prayer has great benefits for physical and spiritual health.

Based on the above background, it is necessary to conduct research with the title Vector Analysis in Prayer Movement Against Health Using Visual Media Multimedia Application Development Life Cycle at Muhammadiyah University of North Sumatra. By reviewing this material, it is hoped that it can add insight to the writer in particular, and readers in general, increase devotion to Allah SWT, increase solemnity and pay more attention to prayer movements so that prayers are carried out in accordance with the terms and conditions that should be, and more than that all health. will be more awake.

## 2. RESEARCH METHOD

This type of research is qualitative research using the literature method. This method is used to obtain theoretical data. In simple terms, library research is a type of research that seeks to collect research data from the literature and make the "world of texts" the main object of its analysis. The purpose of this method is to gain new knowledge as well as new interpretations of existing knowledge. Sources of data in this study come from books, journals and other scientific works that are relevant to the discussion which are the basic components of this study, making it possible to simplify the research process. Based on the source, data can be divided into two, namely primary data and secondary data. Primary data sources, namely data obtained from original sources containing the information or data. In this case, the primary data source is material related to vector material, prayer and health, namely the book Vector Analysis of Theory Studies with the Qur'anic Approach and supported by books that are still relevant and have something to do with the current material. researched. Meanwhile, to analyze vectors, the

prayer and health movements according to the verses in the Al-quran used several interpretations, including the Al-Misbah interpretation by M. Quraisy Syihab, the Al-Maraghi interpretation by Ahmad Mustafa Al-Maraghi.

Secondary data sources, namely data obtained from non-original sources, which contain such information or data, secondary data sources are used to support and complement the primary data that has been found. To expand the study and deepen the discussion, apart from using several commentary books that have relevance to the object of study under study, the author also uses several other papers that have relevance to the object. Includes scientific publications in the form of books, articles and research results related to the concept of the field being studied, namely vector analysis with prayer movements on health from the perspective of Al-Qur'an and Science.

The data collection technique used is library research, which is library research by examining and analyzing books related directly or indirectly, namely by collecting and reviewing various libraries, namely the Al-Qur'an, relevant books and other related scientific writings. with research purposes. The analysis techniques used in this research are inductive thinking techniques, deductive thinking techniques, and Al-Qur'an interpretation techniques using the tafsirmaudhu "iy method.

### 3. RESULTS AND DISCUSSION

#### A. Vector Analysis in Prayer Movement

A vector quantity is a quantity that has a value and direction, written in bold type and italics is used to express the scalar value (the size of the vector). Some of the prayer movements that can be analyzed in vector are as follows:

1. Rukuk movement



Figure 1. Rukuk movement

Rukuk movement The meeting of two perfectly perpendicular lines, a perfect  $90^\circ$  angle to the bow 'is shown that the Prophet when prayed his back was flat. If you put a glass of water on it, it won't spill. This straight back is likened to an X direction vector and the leg that is perpendicular to the top of the thigh is likened to Y, while the butt is the meeting between the straight line of the thigh and the straight line of the back which forms an angle of  $90^\circ$ . This perfect meeting of two lines makes for a strong position, so that many architects and builders build a space angle with an angle of  $90^\circ$ . This angle will also often be found in most corners of doors and windows, this is a sturdy and strong position.

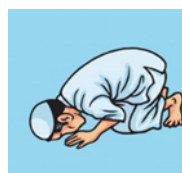


Figure 2. Prostration Movement

Prostration movement with an angle of  $45^\circ$ . There are seven limbs used by Nabidalam prostrate, namely two palms, two knees, two feet, forehead and nose. Besides that, in prostration, he raised his arms from the ground and kept them away from his stomach until the white color of his armpits was visible to those behind him. Even if a small goat passed between his armpits, he would be able to pass.

The back straight down is compared to the X direction vector and the straight knee to the thigh is represented as Y, while the buttocks are the meeting between the back straight down and the upright knees forming an acute angle of  $45^\circ$ .

## B. Vector Analysis with Prayer Movement in Al-Quran Perspective

### 1. Vector Direction with the direction of the Qibla Prayer

If a Muslim is in a region or part of the world where it is not possible for him to see the Ka'bah then he should know exactly the direction of the Qibla where he must direct his prayer towards that Qibla, as in the QS. Al Baqarah (2) verse 115. Meaning: "And belongs to God east and west, so wherever you face there will be the face of Allah. Verily Allah is Vast (His mercy), All-Knowing."

This verse was interpreted by Imam Mujahid Rahimahullah, he said, "Wherever you are, face your face at the Qibla of AllahSWT, because you have the Qibla that you are oriented to, namely the Ka'bah." (Tafsir Imam Ibn Kathir Volume I page 391). However, if a Muslim is in front of the Ka'bah, then he is obliged to face his body and face towards the Ka'bah.

Likewise Allah SWT provides relief, when a person performs the Sunnah prayer on a vehicle, it is not obligatory for him to face the Qibla. However, if he performs the obligatory prayer, then he must still face the Qibla direction. As the Prophet taught to his friends.

A vector quantity is a quantity that has a value and a direction. When you want to find the resultant force in a vector, you must know its value and direction. As with prayer, when we want our prayers to be valid and accepted, it must be in accordance with the terms and conditions, including one of the pillars, namely facing the Qibla.

### 2. Representation of Vector Fields in the Thawaf Movement

Broadly speaking, if at points  $(x, y, z)$  of an area in space  $R$  is associated with a vector  $V(x, y, z)$ , then  $V$  is called the vector function of the position or vector point function, and we state that the vector field  $V$  has been defined in space  $R$ .

The scalar field with the pilgrimage and the universe, which is expected to create positive energy or spirit to understand that Divine greatness can be seen in the universe.

If it is connected with this universe, it can be analogous to a negative electric charge ( $q$ ) where  $q$  is the center or qibla. In this case, the field direction is as shown in the following figure.

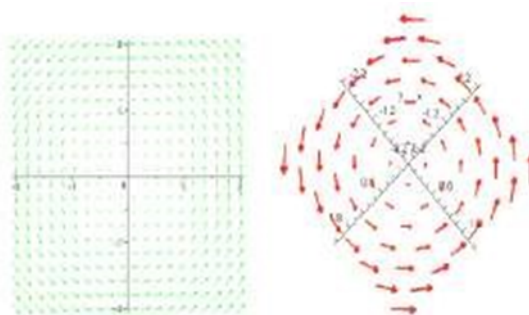


Figure 3. Representation of the vector field in the thawaf movement

All human beings on the surface of this earth perform prayers five times a day facing the Qibla direction to worship Allah SWT. The Qibla is a means of unifying the Muslim ummah in carrying out rituals of



worship to worship the God of Muslims, namely Allah SWT. Where the Qibla is also used as a complement to the faith of Muslims who are able to carry out the Hajj. If you look at the vector field image, it is clear that the second image shows an image like a person performing the tawaf worship. As the Prophet said: "Thawaf is prayer, it's just that Allah allows to speak in tawaf, whoever speaks should speak well." An interesting phenomenon can also be shown in prayer meetings, since takbiratul ikhram to salam is a complete rotation with an angle of  $360^\circ$ . One cycles of prayer (standing upright will form an angle of  $0^\circ$ , when bowing with your back and legs perpendicular it will form an angle of  $90^\circ$ , and when prostration is formed an angle of  $45^\circ$ , because in one prostration prayer movement is performed 2 times, then 2 times prostration forming a  $90^\circ$  sujdut, if the total is added up in one prayer movement, then the number of angles is equal to  $360^\circ$ . One rekaat is equal to one tawaf movement, which is one  $360^\circ$  rotation. The difference is that when praying, a person is prohibited from speaking because it can interrupt the prayer, which is different. with tawaf, when doing tawaf a person is allowed to speak. Hajj as stated in the Al-Qur'an surah Ali Imran: 97. This means: "Whoever enters it (Baitullah) is safe; doing Hajj is a human obligation to God, namely (for) people who are able to travel to Baitulla. Whoever denies (the obligation of hajj), then Allah is rich (does not need a something) from the universe. "

From the above verse it is clear that the words man istatho 'a = people who are capable, describe something that surrounds the center must have the ability (energy) while ilaihi sabilan is the line of rotation. If you look at the universe, this universe, especially the solar system, follows what is described by QS. Ali Imran verse 97. The planets in the solar system surround the sun, in circling the sun the planets must have energy (gravitational energy / istatho'a) to keep going around the sun, if that energy is weak the planets will be attracted to and burned by the sun so the planets around the sun have trajectory lines (sabilan).

The events that occur during the Hajj and the phenomenon of the solar system illustrate that there is only one (One) God, namely Allah, who is worthy of worship. It cannot be denied that in this universe all prostrate to Allah SWT.

### C. Benefits of the Prayer Movement on Health

From Abu Hurairah, the Prophet SAW has said: "If you (will) stand up to prayer, then complete your wudlu ', then face the Qibla, then takbir, then read what is easy for you from the Qur'an, then chant until you stay in in a bow, then get up until you stand straight, then bow down until you are still in prostration, then get up until you are still sitting, then prostrate until you are still in prostration, then do this in all your prayers. " prayer and its benefits:

#### 1. Takbiratul Ihram Movement

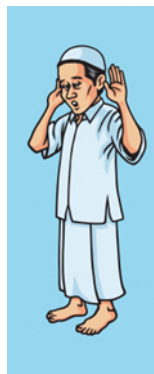


Figure 4. Takbiratul Ihram Movement

When takbiratul ihram, the Prophet raised his hands parallel to both shoulders or with the ears. This is also done when bowing and tidal, while reading sami'allâhu liman hamidahu (Allah hears the servant who praises Him). (HR. Bukhari and Ahmad).

The takbiratul Ihram movement is carried out in a perfectly perpendicular position, just as in a 2-way vector that will form an angle or  $0^\circ$  direction, there will be benefits, including:

(Aulia Jannah)

- a. Provides health benefits to the lungs, chest cavity and lymph nodes. Because when the hand is raised, the ribs will also be lifted, widening the chest cavity. At that time, the breath air should enter. But at the same time, the person who was about to start the prayer had to say "Allâhu Akbar", forcing the air to flow out. This causes the divider of the chest cavity (diaphragm) to become trained.
- b. When the hand is raised, the armpit opens. The armpit is the main or station for the circulation of lymph nodes (lymph) throughout the body. By repetitive takbir movements in prayer, indirectly active pumping of lymph nodes throughout the body (dr. Sagiran M.Kes., Sp.B: 43-44).
- c. This movement will help improve lymph blood flow and arm muscle strength. The position of the heart, which is below the brain, allows blood to flow smoothly throughout the body.

## 2. Put Both Hands On The Chest



Figure 5. Placing both hands on the chest

After Rasulullah performed takbiratul ihram, he put his right hand on the back of his left palm, wrist and / or arm (Narrated by Abu Dawuddan Nasâ'i). He sometimes held his right wrist with his left hand and put both hands on his chest. (Narrated by Abu Dawud). Benefits:

- a. Anatomically, the arms are the best way to balance the arms. This method is useful for exercising some of the muscles around the shoulders, armpits, and arms of the hands to strengthen and maintain shoulder alignment. In addition, the arms will strengthen the position of the soles of the feet because they are both standing at the same angle to the terrain.
- b. Putting your palms on your chest, not on your stomach, will automatically lift your right-left shoulders and keep your armpits open as the lymph circulation station.
- c. Putting your hands on your chest stimulates the work of the hypothalamic hormones which have a calming effect on us. Like someone who is upset, or sad, or happy, reflexively our hands are stroking the chest. Sedekap in the correct prayer is to place both hands exactly in front of the chest, not on the stomach.
- d. In addition, this movement is believed to be able to prevent various joint disorders, especially in the upper body.

## 3. Rukuk and Tumakninah



Figure 6. Position of the bow

After finishing reading the verses of the Al-Qur'an in prayer, the Messenger of Allah then paused for a while (Narrated by Abu

Dawud and al-Hâkim). Then he raised his hands (HR. Bukhari and Muslim) parallel with his face while saying takbir, then bow.

In every correct prayer movement, an angle will be formed which is formed by the movement prayer (for example, when bowing) an angle of  $90^\circ$  is formed, this has something to do with vector material, namely vectors

two-way, the benefits:

- a. The position of the bow is in a  $90^\circ$  bend, the spine remains straight, not curved. This position makes all the tendons in our feet become attracted (stretching occurs in the leg muscles). Very good for those who have problems with spinal joints, rheumatism, stomach, and other diseases related to vital organs.
- b. In this position, the weight shifts forward, causing relaxation or stretching of the vertebrae. This relaxation is very useful for maintaining a compressed spine. This benefit will be felt if done properly and tumakninah, without haste.
- c. The bow movement is useful for maintaining the perfect position and function of the spine (corpus vertebrae) as a support for the body and nerve center. The position of the heart is parallel to the brain, so that blood flow is maximized to the middle of the body. The hands resting on the knees function as relaxation of the shoulder muscles downward. Rukuk is also a urinary exercise to prevent prostate disorders.
- d. In addition, the bow can treat the flexibility of the spine which contains the spinal cord (as the human central nerve) and its blood flow, maintaining the flexibility of the sweat-system segments found in the back, waist, thighs and hind calves. Likewise, the neck bones, nape, and memory nerve channels can be maintained with a bow. Memory nerve flexibility can be maintained by lifting the head to the maximum, with the eyes facing the place of prostration.
- e. In the bow and prostration position, the pushing process occurs. In medical studies, position this increases parasympathetic tone (which counteracts the effect of sympathetic tone). With bowing, the body produces NO (Nitric oxide = a substance found in the inner cells of blood vessels that are able to expand or dilate blood vessels) to fight the increase in adrenaline levels above which have the effect of constricting blood vessels and making our blood platelet cells run wild.
- f. In addition, it should be noted that bowing movements are also believed to help the health and work of the cerebellum and train the limbic system to keep emotions stable. (Mustamir Pedak: 180).

#### 4. I'tidal Serta Tumakninah

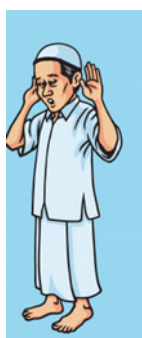


Figure 7. I'tidal movement

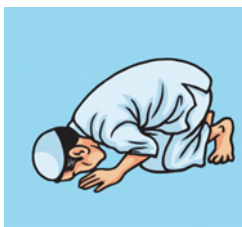
The i'tidal movement is getting up from the bow before prostration. In tidal, Rasulullah ordered to do it with tumakninah. He said, which means, "Then go up head until you stand straight [so that each vertebra of your spine returns to the place]." In another narration it is stated, "If you stand to tidal, then straighten it back and straighten your head until your backbone is firmly in place." (HR.

Bukhari, Muslim, and Ahmad).

In another hadith, the Prophet said, which means, "Allah does not pay attention to someone's prayer who does not straighten his back when standing between his two bow and prostration." (HR. Ahmad and ath-Thabarâni). Benefits:

- a. I "tidal is a variation of posture after bowing and before prostration. Standing hunched over, standing prostrate, is a good digestive exercise. The digestive organs in the stomach alternately undergo massage and loosening. In effect, digestion becomes smoother.
- b. When standing from the bow by raising your hand, blood from the head will drop down, so that the base of the brain that regulates the balance decreases blood pressure. This can keep the body's nervous balance and is useful for preventing sudden fainting.
- c. In addition, it does not improve blood circulation and helps to take a deep breath and then exhale it from the opposite direction strongly. The diaphragm (the divider of the body cavity between the chest and abdomen) returns to a higher position. The abdominal cavity is pressed to a lower place. The chest is higher than the air pressure, thereby reducing the emission of blood to the chest. The blood flow in both legs has a free opportunity to walk quickly to the abdominal cavity, where the soft veins receive blood flow from both legs (Hilmi alKhuli: 121-122).

#### 5. Prostration and Tumakninah



Gambar 8. Gerakan sujud serta tumakninah

There are seven limbs used by Nabidalam prostrate, namely two palms, two knees, two feet, forehead and nose (Narrated by Bukhari Muslim). Besides that, in prostration, he raised his arms from the ground and kept them away from his stomach until the white color of his armpits was visible to those behind him (Narrated by Bukhari Muslim). HR. Muslim) When a person performs a proper prostration movement between his knees straight and his back pointing to the ground, it will form an angle (direction) of 450, it will provide several benefits in the body, including:

- a. Prostration position is useful for pumping lymph into the neck and armpits. The position of the heart above the brain allows oxygen-rich areas to flow optimally to the brain. This flow effect on a person's thinking. Therefore, it is better to do prostration with tumakninah, not hastily so that there is enough blood in the brain.
- b. According to Prof. research. Dr. Wan Azman Wan Ahmad, consultant cardiologist at UM Medical Center, said the heart rate can decrease its rate up to 10 times a minute in the prostration position, where the forehead, nose, hands and knees of the feet touch the ground. This certainly provides a sense of relaxation and comfort. This is due to the flow of blood that carries oxygen automatically into the blood vessels of our brain, then the drainage occurs to the ends of the capillaries (this event we will only find when we prostrate).
- c. With prostration movements, it will increase the endurance of blood vessels in the brain. Because, the position of the head is lower than the heart, causing blood to collect in the blood vessels of the brain. This indirectly trains the brain blood vessels of a Muslim so they are not prone to stroke.
- d. In addition, in the prostration position, the blood vessels in the brain are trained to receive an ample supply of oxygen. At the time of prostration, the position of the heart is above the head which allows the blood to flow optimally to the brain. This means that the brain gets a supply of oxygen-rich blood, which stimulates the work of its cells. In other words, prostration that is tumakninah and continuous can trigger an increase in one's intelligence.
- e. According to research Doctor of Neurology in America, Dr. Fidelma, who had embraced Islam, there are several nerves in the human brain that are not penetrated by blood. These veins require blood

- for only a few moments. Yet every inch of the human brain requires sufficient blood to function normally. Blood will not enter the nerves in the brain except when the person is prostrated. This means that blood will enter the part of the vein following the five daily prayers required by Islam.
- f. Especially for women, when the hips and waist lift over the head and chest, the abdominal muscles (rectus abdominis and obliquus abdominis externus) are fully contracted. This condition trains the organs around the stomach to push deeper and longer. This benefits the woman, because in labor it is necessary to have good breathing and sufficient ability to push. When the abdominal muscles have grown bigger and stronger, they are naturally more elastic. The habit of prostration causes the body to restore and maintain the abdominal organs in their place (fixation).
  - g. When prostrating, the weight of the upper body is heaped on the arms to the palms of the hands. This is when the chest muscles contract, the body part of which women are proud. Breasts not only become more beautiful in shape but also improve the function of the mammary glands in them.
  - h. This position prevents a person from hemorrhoids. Especially for women, both bowing and prostration have tremendous benefits for fertility and the health of female organs.
  - i. Prostration position is also very good for those with intestinal and vital organ disorders because this position will automatically reduce the occurrence of unnatural accumulation of feces in the intestine. If an unnatural build-up of feces occurs in the upper part of the large intestine (prolapse) it will cause pressure to the vital organs which will automatically cause disturbance. In women, for example, in the form of severe pain during menstruation or symptoms of premature menopause, while in men, for example, it can cause premature ejaculation. If an unnatural buildup of feces occurs on the side or bottom of the large intestine (ballooned sigmoid) it will compress the kidneys and cause various kidney disorders.
  - j. In addition, the prostration position is also very good for sufferers of ulcers and other diseases related to the stomach and intestines, rheumatism, kidney, spinal problems and even almost all diseases can be cured with prolonged prostration therapy.
  - k. It is also believed that the prostration movement nourishes the digestive system. Because when prostrating, there is a massage process of the stomach and digestive device. Besides being able to prevent fat and obesity and strengthen the abdominal muscles, it also improves blood vessels work, and also improves blood circulation in the brain.

#### 6. Sitting between the Two Prostrations and the Early Tasyahud



Figure 9. The initial Tasyahud movement

Rasulullah when he got up from his prostration said takbir (Narrated by Bukhari Muslim). Then sitting iftirasy, namely by straightening the sole of the right foot and occupying the sole of the left foot with tumakninah (HR. Bukhari).

Benefits:

- (1) avoiding pain in the groin that often causes the sufferer to be unable to walk;
- (2) Balancing the electrical and nervous systems of our bodies. Besides being able to maintain the flexibility of nerves in the inner thighs, knees, calf basins, and toes;
- (3) strengthen the heart following the blood circulation system in all parts of the body. "Like tap water flowing through a hose, when the hose is repeatedly squeezed;

#### 7. Sitting Final Tasyahud

(Aulia Jannah)



Figure 10. The Final Tasyahud Movement

Basically, the way to sit at the end of the tasyahud is the same as the way to sit in the initial tasyahud.

The difference is in position soles of the feet. At the end of the tasyahud, the Prophet's sitting position was with a bidruk, that is, the position of the buttocks the left side is attached to the ground, the left foot and the right foot are on one side, namely the right side (Narrated by Abu Dawu'ddan alBaihaqi) and put his left foot under the thigh and calf of the right leg as well straightening the sole of the right foot. But sometimes he spread it (HR. Muslim and Abu'Awânah).

Benefits:

- 1) improve reproductive organs in the perineal area;
- 2) Sitting raisin is very good for men because the heel presses the flow of the bladder (urethra), male genital glands (prostate) and the vas deferens duct. If done correctly, this posture can prevent impotence. Variation in the position of the soles of the feet during iftirasy and Betruk causes all leg muscles to also stretch and then relax again. It is this harmonious motion and pressure that maintains the flexibility and strength of our organs of motion.

#### 8. Greetings to the right and left

When the Messenger of Allah said his greetings to mark the completion of the prayer, the Messenger of Allah turned to his right,

while saying: Assalâmu

„Alaikum wa rahmatullâh (salvation and Allah's grace may be abundant to you), to the cheeks

visible right, then turned to the left, saying: Assalâmu „alaikum

wa rahmatullâh (salvation and Allah's mercy may be abundant for you), until he saw his left cheek the white one (HR. Muslim).

Benefits:

- 1) relaxes the muscles around the neck and head, and improves blood flow in the head so as to prevent headaches and keep facial skin firm;
- 2) Provides relaxation to the muscles and neck bones. In the neck, there are many tissues of the nervous system and blood vessels that connect the head and body parts. This movement will indirectly prevent a person from nervous disorders.

#### 4. CONCLUSION

Based on the discussion that has been described in previous chapters, it can be concluded that the concept of vectors in the prayer movement is reflected in prayer movements such as bowing, prostration, takbiratul ikhram, and others. One cycles of prayer (standing upright will form an angle of  $0^\circ$ , when bowing with the back and legs perpendicular it will form an angle of  $90^\circ$ , and when prostration forms an angle of  $135^\circ$ , because in one prostration prayer movement is performed 2 times, then 2 times prostration forming a sujud  $270^\circ$ , if the total is added up in one prayer movement, then the number of angles is the same as the thawaf movement which is  $360^\circ$ , the benefits of the prayer movement for health are every correct and perfect movement such as standing with your back straight, legs straight, bowing with straightening back ribs, prostration with 7 attached members, then if it is done correctly and istiqomah, there will be benefits that can be felt by the body.

**REFERENCES**

- Afzalur Rahman. 1992. Al-Qur'an Sumber Ilmu Pengetahuan. Jakarta: Asdi Mahasatya.
- Armeledi Mashar. 1993. Islam Masa Depan, Bandung: Pustaka.
- A. Hasan. 1999. Terjemahan Bulughul Maram, (Cet 23: Bandung: Penerbit Diponegoro.
- Aziz Salim Basyarahil. 2001. Shalat Hikmah Falsafah dan Urgensinya. Jakarta: Gema Insani Press.
- Bisri Mustofa. 2007. Menjadi Sehat dengan Shalat, Yogyakarta: Optimus.
- Hasan El-qudsy. 2012. Rahasia Gerakan dan Bacaan Shalat. Surakarta: Ziyad Visi Media.
- Kementrian Agama RI. 2011. Mushaf Al- Awwal, Bandung: Mikhraj Khasanah Ilmu.
- Kementrian Agama RI. 2010. Al-Qur'an dan Terjemahan untuk Wanita. Jakarta: Oasis Terrace Resident.
- Rindang. 2009. Menguji Pakta Integritas Departemen Agama. No. 07THXXXIV Peb.
- Sugiyono. 2010. Statistik untuk Penelitian, Bandung: Alfabeta.
- Sri Jumini. 2014. Elektron Bertasbih. Jurnal Penelitian dan pengabdian kepada Masyarakat Volume 1, No. 3.
- Sri Jumini. 2015. Konsep Vektor dan Nilai-nilai Pendidikan Spiritual di Dalamnya (Telaah Buku "Analisis Vektor" Kajian Teori Pendekatan Al-Qur'an Karya Ari Kusumastuti), Jurnal Penelitian dan pengabdian kepada Masyarakat Volume 2, No. 1.
- Tim Penyusun. 2013. Modul Pembelajaran Fisika, Klaten: Viva Pakarindo.



## An Integrated Information System Design for Managing National Hazardous Waste in Indonesia: A Proposal

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### ABSTRACT

Managing an information system of hazardous waste (HW), residual of business activities of hazardous materials, needs to be addressed as hazardous waste management (HWM) is one of crucial issues in global perspective. The waste directly and indirectly, can pollute or harm the environment, or endanger the environment, health, and survival of humans and other organisms. HWM is a set of activities which include reduction, storage, collection, transportation, utilization, processing and landfill. These activities involve waste generators, waste collectors, waste transporters, waste utilizer, waste processors, and waste landfill disposals. The paper aims to propose an integrated information system design of national HWM in Indonesia. The study was started by gathering requirements (by literature study, stakeholders' interview, and focus group discussion with business people or workers related hazardous waste management), requirements analysis, established system requirements, and designed the information system based on the requirements. The study produced requirements of an integrated information system and system design which modelled using UML (unified modelling language). The design can be used as a foundation of detail design of processes, data, interface, and networks of a working prototype or working system.

**Keywords:** *information system; hazardous waste; hazardous waste management; UML; waste management.*

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## 1. INTRODUCTION

Environmental is a global issue as it involves the survival of humans and other organisms. It also becomes a crucial issue in Indonesia. Therefore the government and parliament established a law to protect and manage the environmental. (Law Number 32 of 2009 Concerning Protection and Management of the Environmental (Undang-Undang Nomor 32 Tahun 2009 Tentang Perlindungan Dan Pengelolaan Lingkungan Hidup), 2009) As a follow up to the law, five years later, the government issued a government regulation which concerns to hazardous and toxic waste management (Government Regulation of the Republic of Indonesia Number 101 of 2014 Concerning Management of Hazardous and Toxic Waste (Peraturan Pemerintah Republik Indonesia Nomor 101 Tahun 2014 Tentang Pengelolaan Limbah Bahan Berbahaya Dan Beracun), 2014). The law and the regulation are foundations and rules in managing hazardous waste management (HWM).

Law Number 32 of 2009 in article 62 expressly instructs the government and regional governments to develop environmental information systems to support the implementation and development of environmental protection and management policies. The environmental information system is carried out in an integrated and coordinated manner and must be published to the public (Law Number 32 of 2009 Concerning Protection and Management of the Environmental (Undang-Undang



*Nomor 32 Tahun 2009 Tentang Perlindungan Dan Pengelolaan Lingkungan Hidup*), 2009). Because environmental problems are also related to HWM, an information system that can be used for supporting the implementation and development of HWM policies is also needed.

In terms of waste management (WM) in Indonesia we found studies by Meidiana, Irianti, and Widyatmoko. Meidiana's research about municipal solid waste management that is one of the factors causing the low service of solid WM in many Indonesia's cities are insufficient of information about the exact amount of waste produced by waste generator, collected at transfer point, and delivered to final disposal sites. Improper information regarding the WM elements drives inefficient municipal WM planning of majority cities in Indonesian. If there is a system in managing waste transfer and weighing, the local government can take advantage of landfill area estimation. The accurate estimation of landfill area can minimize the number of overload landfills which currently occur in many Indonesian cities (Meidiana & Gamse, 2010). It is a similar condition with HWM.

Irianti concluded that in healthcare waste management (HCWM) there were many hospitals did not comply with Ministerial Health Decree No.1204/2004 in terms of safe HCWM as addressed by Government Regulations No. 18 and 85/1999 concerning Hazardous Waste Management, including HCWM. Her studies revealed that there was an unclear policy framework that governs the implementation of safe HCWM. The availability of relevant laws and regulations has not been kept by companies with relevant policy and guidelines (Irianti, 2013). However her studies finding has been ruled by the Law number 32 of 2009 and the Government Regulation number 101 of 2014.

Widyatmoko specifically studied HWM in Indonesia by collecting data from PT Prasadha Pamunah Limbah Industri which has integrated waste management facilities. His study concluded that groundwater and rainfall are potential to transport contaminants leached from the facility offsite to agricultural areas downstream and create potential health hazards. Therefore, the company needs special engineering barriers to isolate waste stored in the landfill. The negative correlations of the COD (chemical oxygen demand) concentrations of primary and secondary leachates indicate a possible failure of primary leachate liner system, which required corrective action in preventing groundwater contamination. Negative impacts of waste treatment plants to surrounding areas comes from over capacity, insufficient knowledge of geological structure, risk of existing faults, groundwater flow system to aquifers (Widyatmoko, 2017).

There are many studies on HWM and information systems of HWM. In a review of efficient WM practices Halkos stated sustainable WM required the combination of skills and knowledge of engineering and physical sciences together with other aspects: ecology, economics, human behaviour, entrepreneurship and good governance. His paper discussed extensively the policy framework and the legislative background around waste and WM in the EU and worldwide. His study focused on the treatment options for waste under the economic cycle approach having the idea of closing the loop with consequently achieving a more efficient resources use (George Halkos, 2014). HWM in emerging countries with especially emphasis on industrial HW, medical waste, and household HW. He found that there were lack systematic approaches to administer WM programmes, inability to collect effectively and manage wastes to reduce the negative effects of those activities. He insisted that frameworks of regulatory and regulations did not address properly HW treatment and final disposal. There was also lack in the implementation of the regulations associated with HWM in consequence of disintegrated responsibilities between government departments and local government (Mmereki et al., 2016).

Deswal developed and designed a GIS application for municipal solid waste (MSW) in India. The system has capability to handle both spatial and non-spatial data. The software provides query capability as well. Using the system is a technology to manage MSW and support the users to manage could help in jumping over the management technology in emerging countries especially in India (Deswal & Laura, 2014). Thompson also developed GIS for Nigeria as a system that enhances waste management authority in planning and combating the menace of improper solid waste disposal. The developed system solves the problem of allocation and relocation of waste bins, no separate bins for recyclable waste, and no direct communication means between citizen and waste management authority (Thompson et al., 2013).

One country that has a concern in the HWM is Turkey. A study conducted by Akkoyunlu analyzed the processing time of HWM in Turkey. According to them there needs to be a thorough evaluation of a country in its HWM program in theory, practice, problems, and solutions. In 2010 786,418 tons of wastes were produced in Turkey and 81.4% was sent to controlled landfills while the rest was burned and stored (Akkoyunlu et al., 2017). The other country which has a great attention to

the HWM is India. Due to economic development and growth, industrialization and changes in lifestyle, it has increased the amount of waste in India especially in big cities with large populations and high growth. The HWM has become very ineffective due to limitations including governance systems, inappropriate treatment facilities, regulatory limitations, and low levels of knowledge of the parties involved. Therefore we need a technology that can support the mitigation of various hazards caused by the HWM (Karthikeyan et al., 2018).

In regards to information system, based on our interview the stakeholders regard to hazardous waste management and focus group discussion with business people or workers related hazardous waste management in Indonesia, currently the Ministry of Environment and Forestry already has two information systems for handling HWM: SIMPEL (sistem informasi pelaporan – reporting information system) which be used by stakeholders to report their environmental activity including HW and Festronek (Electronic Manifest of Hazardous and Toxic Waste Materials) for pinpoint HW movement tracking between stakeholder's site. However, these systems are not integrated so that stakeholders must enter the same data into different systems as a result is very inefficient and potentially inaccurate. These systems also cannot monitor the actual amount of waste circulating in the industrial environment. Furthermore, for real time waste movement tracking the government has access rights to geographic information systems (GIS) from GIS providers of stakeholders. The government is not the owner of the data. Other than that, the stakeholders keep using their legacy system without any interface with the government system which makes multiple entries individually to the systems.

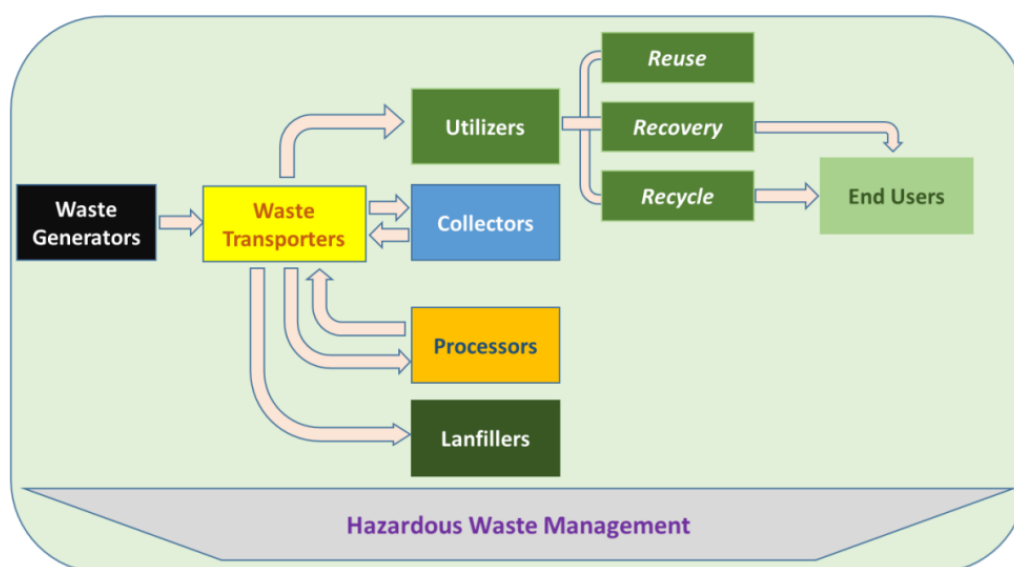


Fig 1. Scope of Waste Management Control in Indonesia

We cannot find any research which particularly and deeply studies an HWM information system (HWMIS) for Indonesia case. The purpose of this study is to analyze the system requirements of a HWMIS named and design an architectural information system which include global design of process, data, interface, and network design of this information system (Kendall & E. Kendall, 2011). This design must allow all stakeholders and regulators (governments) for each level to collaborate in using this system. The specific purpose of this research is to create a HWMIS software application. This system is very urgent to manage and monitor the generation of HWs by waste generators and their movements up to the utilizers and landfill disposals so as to ensure the control of their effects on the environment. The system is proposed to the government in order to easily manage and control HW performance indicators of all locations of the country as at Figure 1. The system does not only make the governments easier to manage and control HWM but more than that the system is more user friendly.

## 2. RESEARCH METHOD

The study applied a research for developing an information system software application. User requirements were gathered by literature study and interviewing stakeholders as well as FGD. Use cases as part UML (unified modelling language) is used to develop system requirements (Kendall & E. Kendall, 2011) (Whitten & Bentley, 2007) (Andi Saputra et al., 2020). Based on the requirements we design global

processes, data, interfaces, and networks for the system. Processes were designed process modelling by rich picture and data was using data modelling by class diagram.

### 3. RESULTS AND DISCUSSION

The research yielded system requirements and system design. System requirements developed to describe needs, functional and non-functional requirements while system design to depict process design, data design, interface, and networks (Imamuddin, 2007b).

In regard to system needs we state that it is an end-to-end system that integrates movement/status information of hazardous waste from waste generators to processors or final disposals carried by transporters. The system is able to be interfaced to stakeholders' legacy system as well.

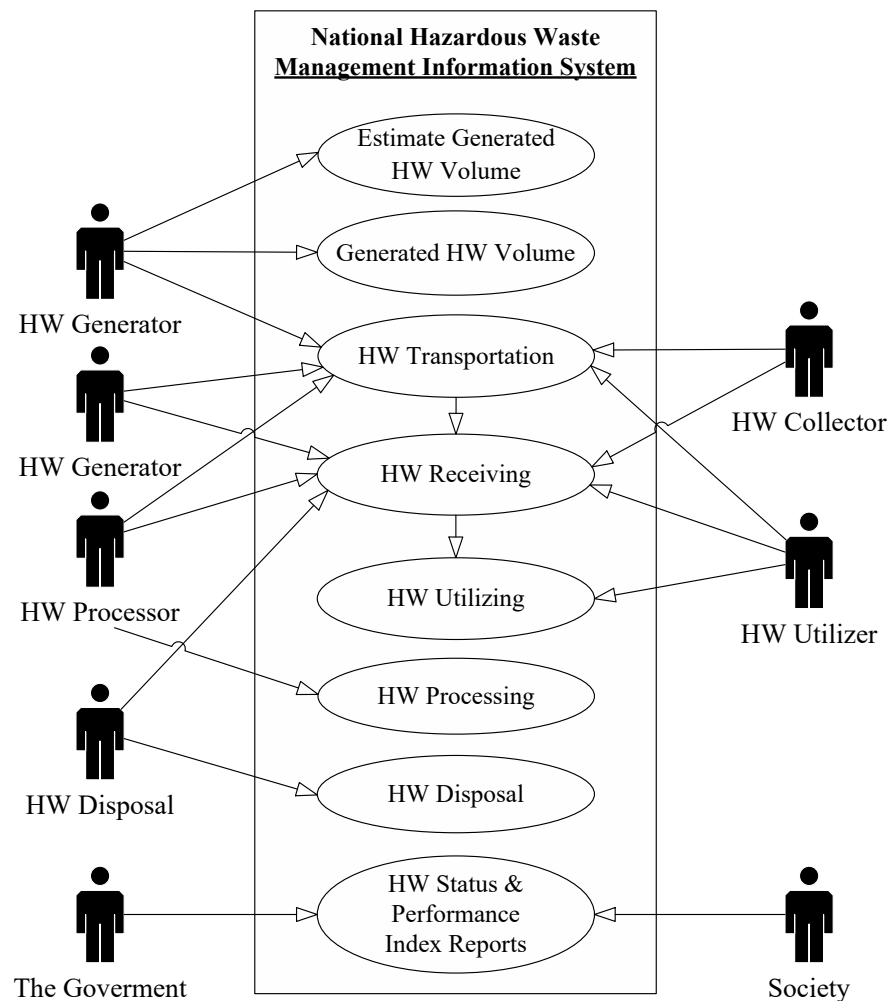


Fig 2. Use Cases Diagram

- As at Figure 2 functional requirements depicted using use cases diagram, the system is able to:
1. manage information of generated waste estimation, actual generated waste, temporary storing, and reducing processes by waste generators;
  2. track waste transportation from waste generators to processors or final disposals by waste generators, transporters, and waste receivers by the government for each level and related stakeholder of the waste;
  3. manage, track, and monitor waste reusing/recycling, waste processing, and waste disposal; and
  4. provide graphical/statistical/spatial information of status or performance of hazardous waste management of the country;

Non-functional requirements comprises that the system is:

1. accessible around the country using internet by desktop/laptop computers or mobile devices;
2. able to be interfaced to stakeholders' legacy systems;
3. limited access rights depends on authentication and authorization of users; and
4. secured from outside attacks;

The requirements are foundations of system design. A system has 3+1 pillars: process, data, interface plus networks. We used a rich picture to figure processes of the system and association between users/actors and processes. Using the rich picture as Figure 3, the system is clear and understandable.

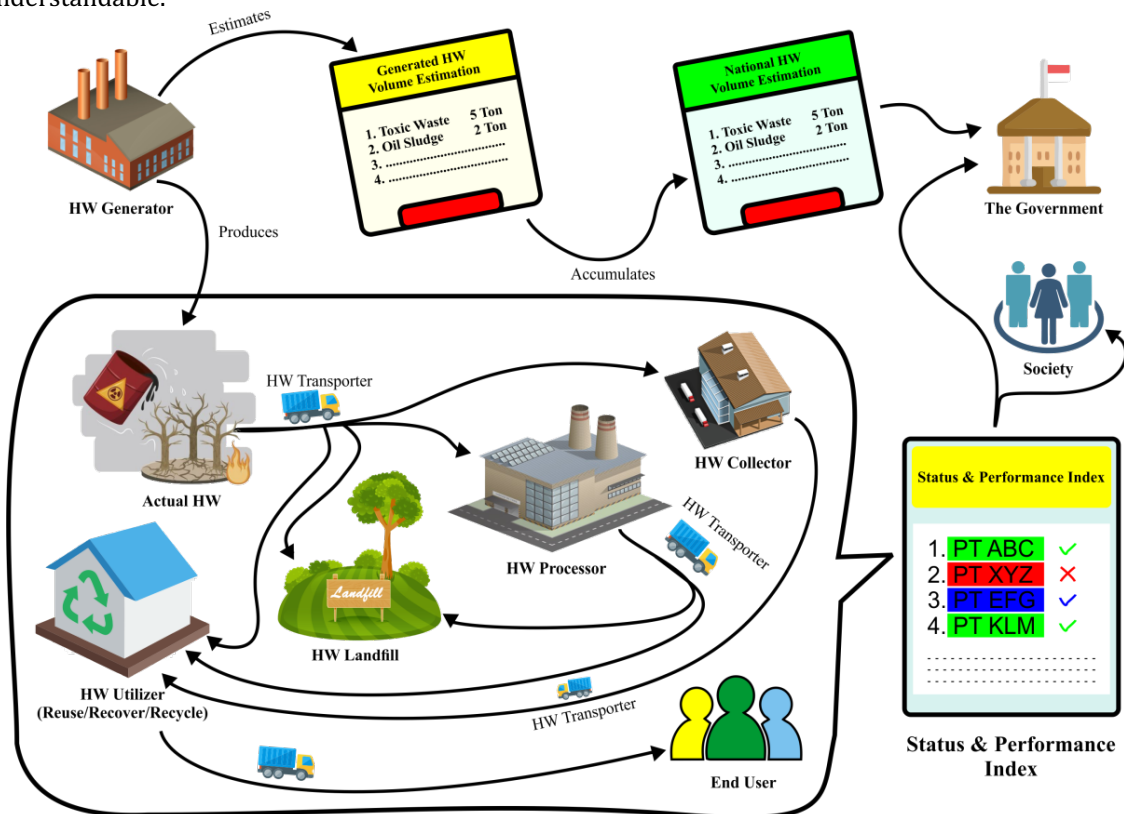


Fig 3. Rich Picture

Based on the use case diagram and rich picture diagram we developed data modeling using a class diagram as in Figure 4 (Imamuddin, 2007a). There are eight entities plus for specialization entities: Generators, Volume Estimations, Wastes, Treatments, Deliveries, Transporters, Destinations, and Geography Locations. Destinations entity is generalization of entities: Collectors, Processors, Landfill, and Utilizers.

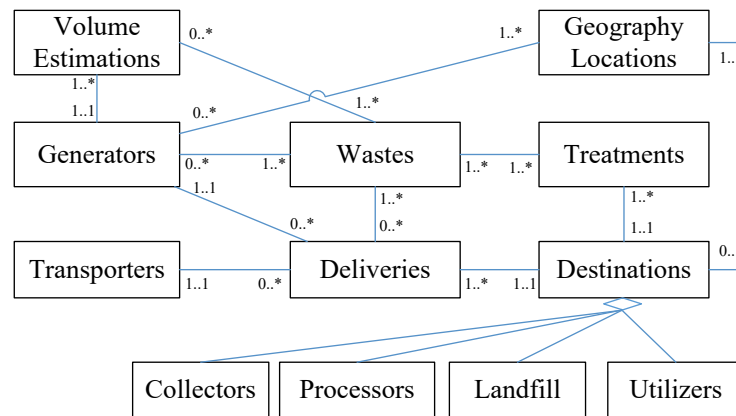


Fig 4. Conceptual Class Diagram

In this section we will discuss each item of requirements and/or designs. Firstly, waste generators are required to record estimated generated wastes and publish the information to transporter companies and utilizer/disposal/processor companies in order to get competitive price and services. Accumulated information of estimated generated wastes addresses the government to plan waste management properly. Actual generated waste, temporary storing, and reducing processes lead the government systematically determines index and performance of HW generator companies by the system.

Transporting HW is a critical issue on HWM while the HW reduced by fraud on the road between a waste generator company as sender to waste processor/disposal company as receiver. HW transportation tracking is a mandatory process in the system. The government can immediately detect and trace waste volume discrepancy and deviation on the road. This way drives waste transporters to be more responsible in waste delivery.

HW processor/disposal/utilizer companies are responsible to record reusing/recycling/recovery, processing, and disposal of HW consistently. Aggregated number of HW shows information how effective waste management in the country is and which processes of disposal are mostly used in the country. Eventually, providing information about hazardous waste status and performance index using graphical/statistical/spatial information figures describes easily to understand current situation of HWM in the country. The government can immediately take actions in order to react for stabilizing the situation and the societies can also control the circumstance.

As HWs are generated institutions around the country, the system must be accessible around the country using the internet by desktop/laptop computers or mobile devices. The system should fit in mobile devices to maximize and enlarge a number of users. Thus, reliable internet connectivity must be available at remote spots of the country to serve the system.

Interfacing to stakeholders' legacy systems is important in order to avoid user resistance to the system. It will remove double works on the user side and cut-cost in making reporting to the government. They do not need to add more man power to execute the system as it has interfaces with stakeholder's legacy system.

Access rights are to limit access rights depending on authentication and authorization of users. Each stakeholder accesses their HW data only. Central government users have access rights to all information of the country, province government users have access rights to all information of their province, and city government users have privilege access to all information of their city. The system provides other public information which is accessible by the societies or public as well. Security issues also need to be addressed to the system design. Database server, application server, and web server needs to be separated. Each server needs to be secured from outside attack, transfer data from a server to other servers and from each stakeholder terminal to the server must be safe.

In terms of data modelling we have Geography Locations entity to accommodate the requirements that we have local (province/city) government who are responsible in managing environmental issues on their own territory. This will support them to localize their issue regarding

misappropriation of handling waste by each point of waste generations, transfers, and disposals. The data is beneficial for tracking of hazardous waste movement.

#### 4. CONCLUSION

The study produced system requirements and architecture system design of the software. The design can guide other researchers or software developers to develop a working prototype or a working system. To be more operational the requirements and the design need to be detailed and enriched with survey more stakeholders.

#### REFERENCES

- Akkoyunlu, A., Avşar, Y., & Erguven, G. O. (2017). Hazardous Waste Management in Turkey. *Journal of Hazardous, Toxic, and Radioactive Waste*, 21(4), 04017018. [https://doi.org/10.1061/\(asce\)hz.2153-5515.0000373](https://doi.org/10.1061/(asce)hz.2153-5515.0000373)
- Andi Saputra, Ashari Imamuddin, & Pria Sukamto. (2020). Rancang Bangun Aplikasi Sistem Penjualan Case Study: Pt. X. *INFOTECH: Jurnal Informatika & Teknologi*, 1(2), 78–86. <https://doi.org/10.37373/infotech.v1i2.67>
- Deswal, M., & Laura, J. S. (2014). Application of GIS in MSW management in India. *International Journal of Engineering Research and Development*, 10(10), 24–32.
- George Halkos, K. N. P. (2014). Efficient waste management practices: A review. *Munich Personal RePRc Archive*, 71518. [https://mpra.ub.uni-muenchen.de/72288/1/MPra\\_paper\\_72288.pdf](https://mpra.ub.uni-muenchen.de/72288/1/MPra_paper_72288.pdf)
- Government Regulation of the Republic of Indonesia Number 101 of 2014 concerning Management of Hazardous and Toxic Waste (Peraturan Pemerintah Republik Indonesia Nomor 101 Tahun 2014 Tentang Pengelolaan Limbah Bahan Berbahaya dan Beracun), (2014).
- Imamuddin, A. (2007a). Pemetaan Hubungan Generalisasi / Spesialisasi Pada Model ER Ke Model Relasional. *Data Base*, 2007(Snati).
- Imamuddin, A. (2007b). Rancangan Database Storage Engine Menggunakan Data Dalam Format Xml. *Jurnal Fakultas Hukum UII*, 2007(Snati). <https://www.neliti.com/id/publications/88938/rancangan-database-storage-engine-menggunakan-data-dalam-format-xml>
- Irianti, S. (2013). Current Status and Future Challenges of Healthcare Waste Management in Indonesia. *Media of Health Research and Development*, 23(2 Jun), 73–81. <https://doi.org/10.22435/mpk.v23i2.3129.73-81>
- Karthikeyan, L., Suresh, V., Krishnan, V., Tudor, T., & Varshini, V. (2018). The Management of Hazardous Solid Waste in India: An Overview. *Environments*, 5(9), 103. <https://doi.org/10.3390/environments5090103>
- Kendall, K. E., & E. Kendall, J. (2011). *Systems Analysis and Design* (8th ed.). Pearson Education, Inc. <http://repositorio.unan.edu.ni/2986/1/5624.pdf>
- Law Number 32 of 2009 concerning Protection and Management of the Environmental (Undang-Undang Nomor 32 Tahun 2009 tentang Perlindungan dan Pengelolaan Lingkungan Hidup)*. (2009). 255. ???
- Meidiana, C., & Gamse, T. (2010). Development of waste management practices in Indonesia. *European Journal of Scientific Research*, 40(2), 199–210. <https://doi.org/http://www.eurojournals.com/ejsr.htm>
- Mmereki, D., Baldwin, A., Hong, L., & Li, B. (2016). The Management of Hazardous Waste in Developing Countries. *Management of Hazardous Wastes*, October. <https://doi.org/10.5772/63055>
- Thompson, A. F., Afolayan, A. H., & Ibadunmoye, E. O. (2013). Application of geographic information system to solid waste management. *2013 Pan African International Conference on Information Science, Computing and Telecommunications, PACT 2013, July*, 206–211. <https://doi.org/10.1109/SCAT.2013.7055110>
- Whitten, J. L., & Bentley, L. D. (2007). *System Analysis & Design Methods* (Seventh). McGraw-Hill Irwin.
- Widyatmoko, H. (2017). Management of Hazardous Waste in Indonesia. *The 4th International Seminar on Sustainable Urban Development*. <https://doi.org/10.5593/sgem2018v/1.5/s02.042>

## Application Design to Calculate Employee Salary in Truth And Calculus Table Learning

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### ABSTRACT

Informatics logic is a compulsory subject students especially in propositional calculus material. Proposition calculus is generally studied by various groups of students, from high school to college level. Proposition calculus studies the true (True / False) value of a proposition. Truth table is a tool or table used to provide values with certain rules. The truth table is a table used to see the truth value of a premise / statement. To complete a proposition truth table, we must first find out how many different statements the table contains. This step is absolutely necessary so that there are no errors in solving the problem. Therefore, the authors are interested in making an application for calculating employee salaries with the calculus proposition method and truth tables that can be used to solve the problem of working on propositions manually, so as to produce accurate truth values. , which at the same time can be used as a medium for student learning.

**Keywords:** Propositional calculus, True/False, Logic.

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## 1. INTRODUCTION

Logic is a study of reasoning, in the large Indonesian dictionary it states the definition of reasoning, namely a way of thinking by developing something based on reason and not by feeling or experience. Logic was first developed by the Greek philosopher, Aristotle, about 2300 years ago. Currently, logic has a wide application in computer science, for example in the field of logarithmic truth analysis programming, computer design and so on. Informatics logic is a method used to calculate the truth value of propositions, while propositions are statements that can be determined by their truth value (true or false). Only sentences with true or false values are used in reasoning. This sentence is called a proposition. Based on the description above, the writer intends to make a final project of semester 1 with the title "Application of Calculating Employee Salaries in Learning Logic Informatics for Proposition Calculus".

## 2. MATERIAL AND METHOD

### 2.1 Research design

In this miniriset research design, the author uses PHP programming, XAMPP, Sublime Text 3, the author conducts experiments and tests on applications created by studying literatures related to the application preparation material to calculate employee salaries by applying it to the Kulkulus Proposition method by entering the same numbers in the application.

### 2.2 Design Technique

Application The system design technique used by the author in this study is to use PHP, XAMPP, Sublime Text 3 programming to design an application to calculate employee salaries.

### 2.3 Data

Data can be defined as facts that describe events and real unity. The data from this study include the object of the employee (employee name, working day, salary, bonus) manifested in the form of numbers and letters.

### 2.4 Information

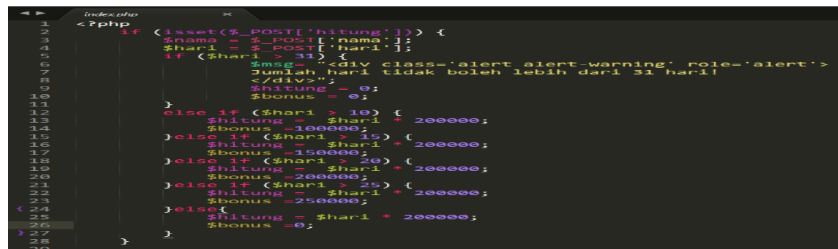
Information is the result of a process or the result of processing data which includes the results of the application work.

### 2.5 System

The system is a set of interrelated or integrated elements intended to achieve goals. The system in this study is in the form of an application method and is combined with the numbers entered in the Kulkulus Proposition material.

### 2.6 Input Design

Designing input is one of the most important parts in making an application because through this input form the user will interact with the computer.



```

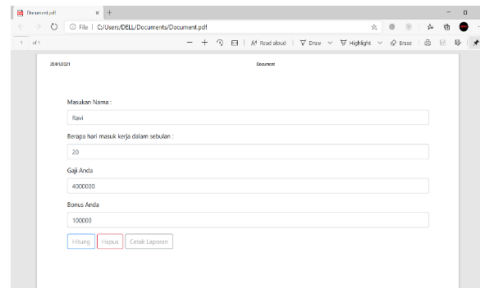
<?php
if ($isset($_POST['hitung'])) {
    $nama = $_POST['nama'];
    $hari = $_POST['hari'];
    if ($hari <= 10) {
        $img = <div class='alert alert-warning' role='alert'>
        Jumlah hari tidak boleh lebih dari 31 hari!
        </div>;
        $hitung = 0;
        $bonus = 0;
    }
    else if ($hari > 10) {
        $hitung = $hari * 20000;
        $bonus = 100000;
    }
    else if ($hari > 15) {
        $hitung = $hari * 20000;
        $bonus = 150000;
    }
    else if ($hari > 20) {
        $hitung = $hari * 20000;
        $bonus = 200000;
    }
    else if ($hari > 25) {
        $hitung = $hari * 20000;
        $bonus = 250000;
    }
    else {
        $hitung = $hari * 20000;
        $bonus = 0;
    }
}

```

Fig 1. Input Design

### 2.7 Output Design

Output design is the process of designing the processed information output to the user / user who will see and use the information from these results. The design of this output is very important in making this application because the output will provide the needs of the user / user to display the data he needs.



The screenshot shows a web form titled "Berkas" with the following fields and buttons:

- Masukan Nama:
- Berapa hari masuk kerja dalam sebulan:
- Gaji Awal:
- Bonus Awal:
- Buttons: Hitung, Reset, Cancel Laporan

Fig 2. Output Design

### 2.8 Kulkulus of Proposition

Proposition calculus is a method used to calculate the truth value of a proposition. Proposition calculus is commonly studied by various groups of students, from middle school to university level. Proposition calculus studies the true value (True / False) of a proposition.

## 3. RESULTS AND DISCUSSION

For how this application works, we enter the name of the employee, how many days he or she comes to work, the salary and bonus will appear with the following conditions:

- For employees who attend > 10, they will get a bonus of 100,000
- For employees who attend > 15, they will get a bonus of 150,000
- For employees who attend > 20, they will get a bonus of 200,000
- For employees who attend > 25, they will get a bonus of 250,000



e And apart from the attendance list above, he / she will not get a bonus

As for each menu above, such as "Enter name", "How many days to work in a month", "Your salary", "Your bonus", "Amount", "Delete", "Print Report". The following is an explanation:

a Enter Name

This menu is a mandatory menu and can be used to enter the name of the employee whose salary will be calculated.

b How many days to work in a month

This menu is a menu that you must also fill in so you can find out how long you have been working for a month.

c Your salary

This menu is a menu to find out how much your salary is during your work.

d Your bonus

This menu is a menu to find out how much your bonus is during your work

e amount

This is a menu to calculate how much your salary and bonuses are during your work.

f delete

This is a menu for deleting / resetting the data that you have previously entered.

g Print Report

This is a menu for printing our salary and bonus data in the application folder in the form of a .pdf extension.

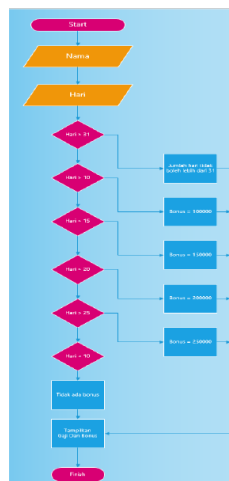


Fig 3. Flow Chart Of System

### Implement the program into the proposition calculus

- Implication  $p \rightarrow q$  states that  $p$  implies  $q$
- $p$  is called the antecedent and  $q$  is called the consequent
- if  $p$  is true then  $q$  is true, but if  $p$  is not true, then  $q$  may be true and may not be true

Enter the question, asked to determine the bonus:

$p$  = if Ravi's salary comes to work for 25 days,

$q$  = then Ravi gets a bonus

$p \rightarrow q$  = if Ravi comes to work for 25, then Ravi gets a bonus

Table1. Truth Table of employee salaries

p	q	$p \rightarrow q$
T	T	T
T	F	F
F	T	T
F	F	T

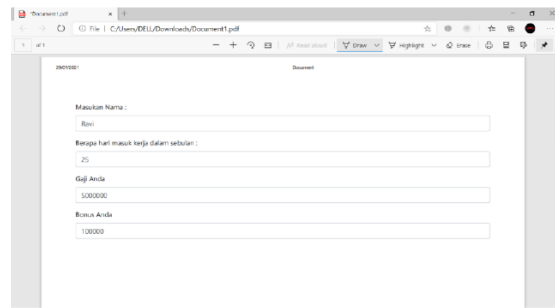


Fig 4. System of Employee Salaries

#### 4. CONCLUSION

Logic is a study of reasoning, in the large Indonesian dictionary it states the definition of reasoning, namely a way of thinking by developing something based on reason and not by feeling or experience. Informatics logic can be used to determine whether a sentence is valid or contradictory, and whether two sentences are sentences - sentences that are equivalent to one another. The design of the application software for calculating employee salaries will make it easier for users to understand the process of working on the proposition culmination and the truth table by entering the values you want to enter into the application. Informatics logic is a method used to calculate the truth value of a proposition, while a proposition is a statement whose truth value can be determined (true or false)

#### REFERENCES

- Modul Logika Informatika : Kalkulusproposisi  
 Setiadji.(2007).LogikaInformatika.Yogyakarta:GrahaIlmu
- Al-Khowarizmi, A. K., Nasution, I. R., Lubis, M., & Lubis, A. R. (2020). The effect of a SECoS in crude palm oil forecasting to improve business intelligence. *Bulletin of Electrical Engineering and Informatics*, 9(4), 1604-1611.
- Prayudani, S., Hizriadi, A., Lase, Y. Y., & Fatmi, Y. (2019, November). Analysis Accuracy Of Forecasting Measurement Technique On Random K-Nearest Neighbor (RKNN) Using MAPE And MSE. In *Journal of Physics: Conference Series*(Vol. 1361, No. 1, p. 012089). IOP Publishing.
- Ramadhani, F., & Ilona, D. (2018). Determinants of web-user satisfaction: using technology acceptance model. In *MATEC Web of Conferences* (Vol. 248, p. 05009). EDP Sciences.
- Ramadhani, F., Ramadhani, U., & Basit, L. (2020). Combination of Hybrid Cryptography In One Time Pad (OTP) Algorithm And Keyed-Hash Message Authentication Code (HMAC) In Securing The Whatsapp

- Communication Application. *Journal of Computer Science, Information Technology and Telecommunication Engineering*, 1(1), 31-36.
- Ramadhani, F., Zarlis, M., & Suwilo, S. (2020). Improve BIRCH algorithm for big data clustering. In *IOP Conference Series: Materials Science and Engineering* (Vol. 725, No. 1, p. 012090). IOP Publishing.
- Syah, R., Nasution, M. K., & Elveny, M. (2021). Sensitivity of MAPE using detection rate for big data forecasting crude palm oil on k-nearest neighbor. *International Journal of Electrical & Computer Engineering (2088-8708)*, 11(3).
- Sari, I. P., Hutagalung, F. S., & Hutasuhut, B. K. (2020). Determination of Campus Promotion Policy Strategy Applied The Profile Matching Method. *Journal of Computer Science, Information Technology and Telecommunication Engineering*, 1(1), 17-23.
- Hutagalung, F. S., Mawengkang, H., & Efendi, S. (2019). Kombinasi Simple Multy Attribute Rating (SMART) dan Technique For Order Preference by Similarity To Ideal Solution (TOPSIS) dalam Menentukan Kualitas Varietas Padi. *InfoTekJar: Jurnal Nasional Informatika dan Teknologi Jaringan*, 3(2), 109-115.
- Sari, I. P., Hutagalung, F. S., & Hutasuhut, B. K. (2020). Analisa Model Pemanfaatan Jaringan Komputer Yang Efektif untuk Peningkatan Produktivitas pada Jaringan LAN Universitas Muhammadiyah Sumatera Utara. *InfoTekJar: Jurnal Nasional Informatika dan Teknologi Jaringan*, 5(1), 193-197.
- Hutagalung, F. S., Sari, I. P., & Hutasuhut, B. K. (2020). Analisa SWOT Strategi Perencanaan Pemasaran Fakultas Ilmu Komputer dan Teknologi Informasi Universitas Muhammadiyah Sumatera Utara. *InfoTekJar: Jurnal Nasional Informatika dan Teknologi Jaringan*, 5(1), 198-201.
- Lubis, A. R., Lubis, M., & Listriani, D. (2019, August). Big Data Forecasting Applied Nearest Neighbor Method. In *2019 International Conference on Sustainable Engineering and Creative Computing (ICSECC)* (pp. 116-120). IEEE.
- Lubis, A. R., & Prayudani, S. (2020, October). Optimization of MSE Accuracy Value Measurement Applying False Alarm Rate in Forecasting on Fuzzy Time Series based on Percentage Change. In *2020 8th International Conference on Cyber and IT Service Management (CITSM)* (pp. 1-5). IEEE.

## The Effect of Using Flashcard Improving Students' Speaking Achievement Through Drilling Technique

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### ABSTRACT

This research deals with classroom action research which is mainly aimed to improve the students' speaking achievement through implementing drilling technique assisted by media flashcard, it was conducted at VII-3 grade class in to cycles activities. The data were classified into quantitative data and qualitative data in which collected through observation sheet, interview, diary note, speaking test. The criteria of ability was 70 which based on minimum ability criterion (KKM) of SMP Swasta Bandung. Based on the speaking test the mean score of pre-test was 28.3, in first cycle test the mean of score was 66.6 and the second cycle test the mean of score was 83. The improvement also can be seen from the percentage of the students' speaking achievement, in pre-test was 0% students can get point more than 70. In first cycle test was 53.4% students get point more than 70. In second cycle test 100% students got point more than 70, it means that teaching by using drilling technique can help students to improve them in speaking achievement. This technique also make the students feel enjoy, comfortable, and more creative to create the ideas without worrying make mistakes through media flashcard.

**Keywords:** Classroom Action Research, Drilling Technique and Speaking Achievement.

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## 1. INTRODUCTION

Indonesian students in a school have to learn English as one of the target languages. They need to learn both language skills and also language components. Language skills as stated by (Brown 2001:232) are listening, reading, speaking, and writing. Language components contain vocabulary, grammar, and pronunciation. Furthermore, students are expected to be able to apply those skills and components in their daily activities.

To be able to use English, learners have to master English skills such as listening, speaking, reading, and writing. Although all four skills are equally important, speaking skills could be seen as the leading skills during the English learning process. During the learning process, learners need to communicate with others to express their ideas and feelings. One of the ways to communicate with others is through speaking.

Brown (2001) states that speaking is an interactive process of constructing meaning that involves producing and receiving and processing information. Although speaking skill is very essential to support further oral communication it is the most difficult skill to develop. Speaking needs practicing as often as possible. Many students are very difficult to speak English because it is caused by several factors. According to Hornby (1995). "five factors play an important role the production of an appropriate speech, (1) *Pronunciation* which includes the segmental features-vowels and consonant and the stress an intonation patterns, (2) *Grammar*, i.e., producing the correct form of sentence, (3) *vocabulary* which has to do with appropriate word- choice with respect ti its context, (4) *fluency* which is the ease and speed of the flow of speech, and (5) *self-confidence* which is seen and as a crucial affective factor in the speaking competence".

Based on the theory above, the researcher gets some problems still difficult to speak English. It is caused by several factors namely: (a) lack of confidence (b) lack of pronunciation, and (c) lack of vocabulary. It is so difficult for students to apply learning English in daily life. Lack of confidence in

students, it is very difficult for students to speak in English in front of the class when called by the teacher. They can only talk of a teacher in teaching speaking in a book. Thus, the task of a teacher in teaching speaking should be able to provide individualized approaches to the students so that their speaking skills can improve slowly. So, naturally if the pronunciation of students in English. They can only focus on how to know the English language and can speak English well. When it has been mastered by students, it is not difficult for teachers to improve the pronunciation of students in English.

Based on the problems, the researcher provides a solution to the drilling technique. This technique is very suitable for foreign language especially for young learners because it emphasizes repeating through oral practice that makes foreign language getting accustomed to teacher's control. There are many ways of teaching that the teachers need to pay attention to improve student's speaking. Considering the writer focus on junior high school in seven graders, the supporting media below may help teachers to facilitate what should be taught in their ages. These supporting media focus on speaking achievement is flashcards.

As states by Harmer (2007, p. 343), if students want to be able to speak fluency in English, they need to be able to pronounce the phonemes correctly, use the appropriate stress and intonation patterns and speak in connected speech.

a) Grammar

Bygate (1997, p. 3) states that it is obvious that in order to be able to speak foreign language, it is necessary to know a certain amount of grammar and vocabulary.

b) Vocabulary

As we know, vocabulary is the basic element in a language. Folse (2004, p. 2) comments that vocabulary is single words, set phrases, phrasal verbs, and idioms.

c) Fluency

In simple terms, fluency is the ability to talk freely without too much stopping or hesitating (Riddel, 2001, p. 118). Meanwhile, according to Gower, Diane, and Steve (1995, p. 100), fluency can be thought of as the ability to keep going when speaking spontaneously.

d) The last speaking element is speaking comprehension. Comprehension is discussed by both speakers because comprehension can make people get the information they want. Comprehension is defined as the ability to understand something by a reasonable comprehension of the subject or as the knowledge of what a situation of what a situation is really like.

## 2. IMPLEMENTATION OF ACTION

This research will be conducted by two cycles. Every cycle are four stages; they are planning, action, observation, and reflection.

### 2.1. Cycle 1

Planning, will be done arrangement for doing something considering advance. It will be purpose to teacher ads handbook which used in classroom in teaching learning process. Before running cycle I, all instruments such as lesson plan, observation sheet and diary notes had been prepared. The activities in planning are :

- 1) Making lesson plan.
- 2) Designing the material about the I love things around me by using flashcards as media.
- 3) Preparing observation sheets to know the students' condition and process of teaching learning and also to know students' increasing achievement by using drilling technique in speaking
- 4) Preparing assessment to know the students' score in speaking by using drilling technique.

Action, was processed doing things. This will be do implementation of planning. The researcher was flexible and welcome to the situation in school environment. Thus, the action was dynamic, needed immediately decision for what done and completed simple evaluation.

Observation, was purposed to find out information of attraction, such as the students' attitudes even obstacle that happen. That it was collected as the data that we was use as a basic of reflection. Observation was done together with the same time. It will be intend to discover the information about behavior, attitude, performance, activities, and even obstacle, during teaching learning in speaking through drilling technique in the classroom. In doing observation, the researcher was help by the English teacher as the collaboration. So, observation should be done carefully.

Reflection, was done feedback of the action which was done before. Reflection help teacher to

make decision. Reflection was do evaluative aspect to evaluate the effect of specious and suggest the way to handle it. Reflection also a phase to process taken the data from observation while teaching speaking through drilling technique. The evaluation cover evaluating students' score of the speaking and the result of observation which purposes to analyze the situation and make the conclusion. After cycle I was run and the result given the increasing of using drilling technique in students' speaking skill, it would be continued in cycle II.

## 2.2. Cycle II

Planning, according to evaluation in cycle I and found out the weakness in cycle I would repaired in cycle II. And the process in planning cycle II same with cycle I. The activities such as preparing lesson plan, preparing the material, preparing the observation sheet to know the students. Reaction and condition of the class when teaching learning process and also to know students' increasing in learning speaking through drilling technique. Preparing assessment to know the students' score in speaking skill through drilling technique.

Action, in this step the researcher was do the lesson plan had arranged in cycle I and also in cycle increased the weakness before. The material given in cycle II same in cycle I. But all of the best was different. The teaching and learning process in action same in cycle I, it will be start from opening until closing.

Observation, included implementation in a observation teaching and learning process in the classroom. It includes teaching and students' activities and the aim of the observation will be to control that teaching and learning process according planning or not.

Reflection, in this phase will be to observe planning according to result in cycle I until cycle II. And also we will find out the weakness in cycleII decrease.

## 3. METHODOLOGY

Types of this research is Classroom Action Research (CAR). classroom Action Research means a research conduct in the classroom to know the result of an action applied on a subject research in the classroom. According to Arikunto (2006: 2-3) classroom action research, action and class. It can be describe as follows:

- a) Research is an activity to find out accuracy some object using methodology to get data or information which benefit to improve something which interest and important for researcher.
- b) Action is movement activity, which is done deliberately with a certain purpose.
- c) Classrooms a group of students in same time and have same lesson from teacher

Based on three of main words, classroom action research (CAR) means research which is done by the teacher in teaching learning process to understand the situation and to improve the skill of the students in learning process. without worry mistakes and help the students to easy in understanding the material.

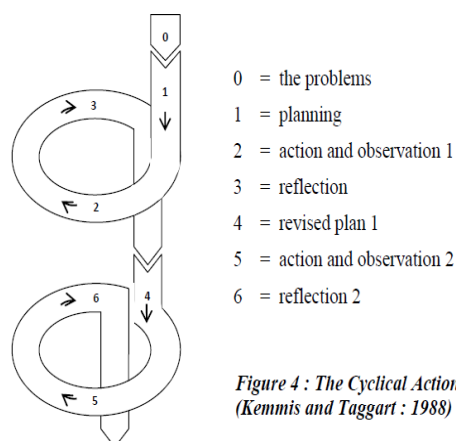


Figure 4 : The Cyclical Action Res  
(Kemmis and Taggart : 1988)

Figure 1. The Cycle of Action Research.

Based on the data analysis, it was derived that the students' ability in speaking by using drilling technique was increased significantly. It could be seen through comparing the result of the test, starting from the pre-test, cycle I, and cycle II, that the score improved cycle by cycle until it reached the mastery standard and even more.

#### 4. DISCUSSION AND SUGGESTION

Based on the data analysis the researcher conducts the classroom action research of teaching speaking using the drilling technique at the twelve-year students of SMP Swatsa Bandung. In analyzing the data, the researcher uses quantitative and qualitative data analysis. Qualitative and quantitative data is using in this study. The qualitative data is used to describe the situation during the teaching- learning process, and the quantitative data used to analyze the students' scores. This study help the teacher and students of English provide the information about the material been taught. For the English teachers, it is better to use interactive multimedia as the first stage in speaking skills, because it could make the teaching learning process active, especially when teaching speaking. The students become more interested in the learning process by using the drilling technique. The teacher can use drilling technique in teaching speaking because it is an interesting way to make students to freely to produce the ideas The next improvement could be seen through the increasing mean in each season of the best. The mean of the score from the pre-test until cycle II (28.3), (66.6), (83) was improved. In addition, the percentage of able students' also added from (0%), (53.4%), (100%) this had proved that drilling technique was one of effective applied to the students' especially those who were learning speaking.

#### 5. CONCLUSSION

Based on the data analysis and conclusion are drown concluded that there was improvement of the students' speaking ability by using drilling technique in speaking. It was showed by the mean of the students. In the pre-test showed 28.3 (0 students), in cycle I showed 66.6 (16 students') and in cycle II showed 83 (30 students) so there was improvement from pre-test until cycle II. And it was proved that from all the students can answer the test and got score more than 70.

#### REFERENCES

- Arikunto,dkk. (2010).*ProsedurPenelitian: SuatuPendekatanPraktik*.Jakarta: RinekaCipta
- Brown, H. D. (2000). *Teaching by Principle an Interactive Approach to Language Pedagogy (2nded)*. New York: Longman
- Brown, H. D. (2000). *Teaching by Principle an Interactive Approach to Language Pedagogy (4thed)*. New York: Longman
- Brown, H.D. 2001. *Teaching by principle: An interactive Approach to Language pedagogy*. New York: Longman
- Bryne.(1986). *Teaching Oral English: Longman Handbooks for English Teacher*. Singapore: Longman
- Bygate, M. (1987). *Speaking*. Oxford University press.
- Chaney. (1998). *Teaching Oral Communication*. Boston: Allyn&Bascon
- Creswell, J. W. (2012). *Educational Research*. University of Nebraska: Pearson
- Doff, A. (1990). *Teach English: A Training Course for Teachers*. Cambridge: Cambridge University Press in Association with the British Council.
- Handayani, K. U. (2011). *Using a Chain Drill to Improve Students' Fluency in Speaking English (The Case of Seventh Grade Students of "SMP N" 5 Sragen in the Academic Year of (2010/ 2011)*. Semarang State University: Unpublished
- Harmer.(2001). *The Practice of English Language Teaching (3rd edition)*. New York: Longman Publishing
- Hornby, A.S.(ed). (1995). *Oxford Advanced Learner's Dictionary of Current English*. Oxford: Oxford University Press.
- Nunan, D. (1991). *Language Teaching Methodology*. United Kingdom: Prentice Hall International
- Richards, J., & Renandya, W. (2002). *Methodology in language teaching: An anthology of current practice*. Cambridge, UK: Cambridge University Press.
- Riswanto.(2012). *"Improving Students' Pronunciation t hrough Communicative Drilling Technique at Senior High School (SMA) 07 South Bengkulu, Indonesia"*. State Institute of Islamic Studies (IAIN) Bengkulu: Unpublished
- Setiyadi, Bambang Ag. 2006. *Teaching English as Foreign Language*. Yogyakarta: Graha Ilmu.
- Larsen-Freeman, Diane. 2000. *Techniques and Principles in Language Teaching*. New York University Press.
- Lotherington, H. (2004). *What four skills? Redefining language literacy standards for ELT in digital era*. TESL Canada Journal/Revue TESL du Canada, 22(1), 65.Vol,22.No, 1. Retrieved from: <http://files.eric.ed.gov/fulltext/EJ847939.pdf>