

COST-BENEFIT ANALYSIS ON ISO 9001 CERTIFICATION AND HIGHER EDUCATION ACCREDITATION

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Abstract: ISO certified institutions expect to enjoy high level of accreditation as both ISO and accreditation support quality management system of higher education. This study aims to analyze the costs and benefits of the application of ISO 9001 which intersects with accreditation (APT) in the quality management system of higher education. The research was conducted through case study and descriptive approach. The research team conducted a survey of 120 new students of State Polytechnic in Batam with quota sampling technique for benefit estimation. Furthermore, a survey was conducted to 17 employees of the polytechnic who is responsible for the fulfillment of ISO 9001 certification and accreditation in all departments with purposive sampling technique to compare the benefits and costs. The research team found that both accreditation and ISO benefited the polytechnic. However, accreditation offers more benefits on performance improvement, student number, student satisfaction, and organizational reputation compared to that by ISO. Nevertheless, ISO benefits more on document improvement than accreditation. In terms of costs, ISO is considered to require a larger cost and more work time than accreditation. Thus, based on cost benefit analysis of both tangible and intangible aspects, quality management of higher education using accreditation is superior to using ISO alone.

Keywords: *ISO 9001, accreditation, cost benefit*

ANALISIS MANFAAT BIAYA SERTIFIKASI ISO 9001 DAN AKREDITASI PERGURUAN TINGGI

Abstrak: Institusi tersertifikasi ISO berharap meningkatkan nilai akreditasinya sebab ISO dan akreditasi sama-sama mendukung sistem manajemen mutu pendidikan tinggi. Penelitian ini bertujuan untuk menganalisis manfaat dan biaya penerapan ISO 9001 yang beririsan dengan akreditasi perguruan tinggi (APT) dalam sistem manajemen mutu pendidikan tinggi. Penelitian menggunakan studi kasus dan pendekatan deskriptif. Tim peneliti melaksanakan survei terhadap 120 mahasiswa baru Politeknik Negeri Batam dengan teknik *quota sampling* untuk estimasi manfaat dan terhadap 17 karyawan yang bertanggung jawab pada pemenuhan sertifikasi ISO 9001 di semua bagian/jurusan dan APT dengan teknik *purposive sampling*. Penelitian dilakukan dengan membandingkan manfaat dan biaya yang terkait serta penerapan ISO 9001 dengan manajemen mutu berorientasi APT. Hasil penelitian menunjukkan bahwa kedua sistem manajemen tersebut memberikan manfaat kepada institusi. Namun, manfaat akreditasi lebih tinggi pada poin peningkatan kinerja, jumlah mahasiswa, kepuasan mahasiswa, dan reputasi organisasi. Di pihak lain, nilai ISO lebih baik pada poin kebermanfaatan untuk perbaikan dokumen, namun dianggap membutuhkan anggaran biaya yang lebih besar dan pengorbanan waktu kerja yang lebih banyak dibandingkan akreditasi. Dengan demikian, berdasarkan analisis manfaat biaya baik yang dapat dikuantifikasi maupun yang sulit dikuantifikasi, pengelolaan mutu pendidikan tinggi menggunakan akreditasi lebih unggul daripada menggunakan ISO saja.

Kata Kunci: *ISO 9001, akreditasi perguruan tinggi, manfaat biaya*

INTRODUCTION

In the midst of tight efforts to improve competitiveness, all organizations are trying to win the competition in various ways including by increasing the quality of products and services.

The growing attention of organizations and the wider community to the quality of products and services causes a high need for quality management systems. Quality management system is a set of documented procedures and

standard practices for system management that aims to ensure the suitability of a process and product to the needs or requirements set by the customer and organization (Gasperz, 2002).

The internationally recognized quality management system standards are ISO 9001. ISO 9001 has become a global benchmark for quality management systems especially after it was adopted by more than one million organizations worldwide (Lloyd's Register Quality Assurance, 2015). ISO certification does not guarantee a process or product at the maximum level of quality, but only states that the entity has a quality management system that gives confidence to users that the company is consistent with their quality procedures (Brown & Wiele, 1996).

Wibawa (2002) stated that some of the company's motivation in obtaining ISO certificates was to improve product quality and efficiency, competitive advantage, increase market share, increase product selling prices, reduce costs and increase stock prices. As a result of the active promotion of the European Community Institute, ISO 9001 penetration has grown tremendously. Over the past two decades, there has been a steady increase in the number of countries that have adopted ISO 9001 as their national quality standards, as well as a continuous increase in the number of companies in these countries that have been certified (Karapetrovic, Casadesus, & Saizarbitoria, 2010). Nevertheless, the implementation of ISO 9001 in universities is still a relatively new thing in Indonesia with a low level of certification penetration. Most universities choose not to do ISO certification because it is not mandatory. Based on the Law number 20 of 2003 concerning the National Education System, the quality assurance system that must be carried out by universities is the accreditation of BAN PT, not from other institutions. Thus, there are not many higher education that carry out ISO 9001 certification (Antariksa, Surachman, & Setiawan, 2014). Although research in Universitas Brawijaya and UIN Syarif Hidayatullah Jakarta (Umiyati, 2015) found a positive and significant influence on ISO 9001 on college performance.

In the context of higher education, ISO 9001 certification and Higher Education Accreditation (APT) both become an integral part of the external quality assurance system.

But according to the National Accreditation Committee (KAN, 2016), there are differences between the terminology of certification and accreditation. Accreditation is a formal recognition given by an accreditation body to the competence of an institution or organization in carrying out certain conformity assessment activities. Whereas certification is a statement of conformity from third parties related to products, processes, management systems or personal to certain standards.

As with other organizations, initially the motivation of the State Polytechnic in Batam in obtaining an ISO 9001 certificate was to improve service quality and efficiency. However, after implementing ISO for 10 years, a number of complaints emerged, including the under-achieved performance improvement of ISO 9001 indicated by the stagnant level of accreditation even though the campus staff had exerted considerable energy to carry out exhausting documentation and spend a lot of money to obtain this certificate. There is a thought that an organization could be more interested in gaining the prestige inherent in ISO 9001 certificate than the goal of quality improvement itself, so that in the long run, what will happen is the performance of ISO-certified organizations will be worse than organizations that are not ISO certified.

State Polytechnic in Batam has obtained ISO 9001 certification since 2006, and has obtained B accreditation for all study programs since 2004. Until now, a number of ISO 9001 quality targets set at this Polytechnic are part of the indicators on APT assessment, so that there are slices between the two. The integration of the two quality management systems holistically cannot be implemented because a number of resources are not ready for integration implementation.

Act No. 20 of 2003 concerning the National Education System encourages universities to make efforts to improve quality. These quality improvement efforts are carried out referring to the quality standards set by Higher Education National Accreditation Board. The efforts to meet the quality standards in accordance with the accreditation policy are expected to increase competitiveness so that it can have an impact in the form of an increase in the number of students at each new student admission, fulfillment of adequate academic qualifications, more adequate facilities and infrastructure, and the increase in external partnerships.

In accordance with the Law, accreditation is compulsory for universities. Unaccredited universities are threatened with closure. It is different with ISO certification which is not a government regulation so that the stimulus is the need of the organization. The difference in quality management and ISO is also in its scope. In contrast to the accreditation that is of a quality barometer at the national level, the ISO is a quality benchmark recognized internationally. This study aims to reveal the benefits and costs of ISO-oriented quality management compared to APT. Cost-benefit analysis is a systematic approach to considering the weaknesses (costs) and strengths (benefits) of the choices available (Rodreck, Ngulube, & Dube, 2013). This analysis can be applied to feasibility studies and decision making to evaluate the use of economic resources so that scarce resources can be used efficiently. Analysis of benefits and costs only focuses on the efficient use of factors of production without considering other problems such as distribution, economic stabilization and so on (Sugiyono, 2001).

Secondly, this study also attempts to describe the implementation of ISO 9001 which intersects with APT at State Polytechnics in Batam. This description is expected to be beneficial for universities that are currently preparing for ISO 9001 implementation on their respective campuses. Third, by using cost benefit analysis, this study attempts to formulate whether the State Polytechnic in Batam should maintain ISO 9001 certification or use another quality assurance model that might be more efficient.

Practically, this research is very useful for top polytechnic management to evaluate work program. Using the State Polytechnic case study in Batam which has been ISO 9001 certified for a long time, the research team hopes that this research can be useful for other universities in the framework of implementing ISO 9001. Theoretically, this research is also very important to enrich the literature in the field of ISO application evaluation in universities such as Karapetrovic, Rajamani, & Willborn (1998) research on how to implement ISO in universities and Sohail, Rajadurai, & Rahman, (2003) who claim that the application of ISO in universities is very important for the collection of data needed for quality improvement of a

college. This research is also expected to be useful to enrich the literature of the quality management system in universities in Indonesia, where the use of cost benefit analysis has not been widely applied in this case.

METHOD

In this article, the research approach carried out is descriptive research and case studies. Cost benefit analysis is carried out through the stages of identifying benefits and costs based on their classification, estimating the value of benefits and costs, and finally analyzing the final value of cost benefits. In identifying the benefits and costs, benefits and costs need to be classified according to the definition described by Mangkoesobroto (1998). Identification of benefits and costs is carried out through interviews and limited discussions with a number of experts in the field of college quality assurance, namely the quality assurance, ISO internal auditors, and the re-accreditation drafting team. Respondents were also asked to compare the benefits of ISO and accreditation simultaneously, and determine the value of the gap or differences.

Furthermore, the benefits and costs identified were included in the questionnaire instrument. The value of the benefits will then be proxied based on the results of the survey to these students. The survey was conducted on 120 new State Polytechnic students in Batam with quota sampling techniques for estimating benefits. Quotas are proportionally determined per study program both morning and evening class students with an estimated number of samples is 10 percent of the population for descriptive research (Gay & Diehl, 1992). The questionnaires collected actually amounted to 128, but 8 questionnaires were deemed not to fulfill the conditions, namely only choosing a maximum of 5 options from the 13 available options. The population and sample of new students who are respondents in this study are described at Table 1.

Based on the table above, it can be seen that the total population is 1,237 new students consisting of 706 morning class students and 531 night class students. With quota sampling, the data was processed from 120 selected new students consisting of 70 morning class students and 50 evening class students. Quota sampling is

Table 1. Population and Sample

No.	Department Code	Study Program Code	Population		Sample	
			Morning	Evening	Morning	Evening
1.	MB	AK	63	63	6	6
		AM	60	33	6	3
		AB	61	32	6	3
2.	EL	EL	60	31	6	3
		MK	60	43	6	4
		IN	30	21	3	2
		RO	31	16	3	2
		EM	26	30	3	3
3.	IF	GM	57	21	6	2
		IF	61	91	6	9
		MJ	58	61	6	6
4.	MS	KA	32	29	3	2
		PPU	48	0	5	0
		MS	59	60	5	5
Total			706	531	70	50
			1237		120	

chosen to better represent the characteristics of the actual student population.

Furthermore, a survey of 17 State Polytechnic employees who are responsible for fulfilling ISO 9001 certification and APT. They are: chairman of the department of machinery, business management, informatics, and electro, chair of the Research and Community Service Center, Quality Assurance, Internal Supervisory Unit, Library, Maintenance and Repair, and chairman of the Academic and Student Affairs subdivision, Planning and Cooperation, State Property, Finance, Procurement, Employment, and Administrative Affairs. Employee samples were selected by purposive sampling technique, namely only respondents who were permanent employees were allowed to fill out questionnaires. Questionnaires are given to the head of the department, but the head of department can request the assistance of his staff provided the staff has the status of a permanent employee. This survey was conducted to compare the benefits and costs associated with the implementation of ISO 9001 compared to APT-oriented quality management.

The results of the validity test on 17 respondents are showed in Table 2.

Table 2. The Results of the Validity Test

Statement	Validity (r count)	
	Accreditation	ISO
1	0,712	0,733
2	0,699	0,734
3	0,688	0,743
4	0,696	0,735
5	0,695	0,743
6	0,685	0,770
7	0,665	0,748
8	0,682	0,726
9	0,652	0,737
10	0,694	0,745
11	0,703	0,742
12	0,682	0,748
13	0,678	0,741

Based on the r product moment table, it is known that the r_{table} value for 17 respondents with a significant level of 5 percent is 0.4821. Thus, table 2 explains that all statements in the questionnaire meet the validity test. While the reliability test results are showed in Table 3.

Table 3. The Results of the Reliability Test

Dimension	Reliability (Pearson Product Moment)	
	Accreditation	ISO
Benefit	0,743	0,906
Costs	0,854	0,883

Table 3 above explains that all dimensions meet the reliability test because they are above 0,6.

RESULTS AND DISCUSSIONS

Results

Costs and Benefits of ISO and Accreditation

Based on the results of interviews and limited discussions, we identified a number of benefits and costs of ISO-based quality management and accreditation showed in the Table 4.

Benefits Comparison of ISO and Accreditation

a. Quantifiable Benefits

Among the value of indirect or secondary benefits from ISO and accreditation is an increase in the number of students in the future. In other words, ISO and accreditation are able to attract the interest of new students which have an impact on the further pseudo benefits of the ability of the organization to increase market prices without losing market share. Following are the results of a survey of 120 new students selected using quota sampling.

Based on the table above, there were around 5,6 percent of new students interested in entering the state polytechnic in Batam due to the reputation of this polytechnic which is ISO 9001 certified.

Referring to table 4, it is stated that one of the benefits of ISO and APT is the ability of the organization to increase market prices without losing market share. In 2017, Batam State Polytechnic for the first time imposed an entrance examination fee. Thus, the cost of entrance examinations practically increases

market prices. Therefore, in the study, the value of benefits is proxied by the amount of entrance examination income.

Table 5. The Ability of ISO and Accreditation to Attract the Interests of New Students

No	Options	Percent
1	The only "government-owned" campus in Batam	15,3
2	Affordable costs	12,9
3	Reputation with good accreditation	11,8
4	Amenities	11,3
5	Famous reputation in your surroundings	10,8
6	Location (in vicinity / accessible)	10,2
7	Provide scholarships	7,7
8	Reputation with ISO 9001 certification	5,6
9	Reputation as an international winner	5,2
10	Parents' will	3,2
11	Reputation of strict selection for entry	3,2
12	Extensive alumni association	2,0
13	Others	0,7
Total		100,0

If the amount of non-tax state revenue (PNBP) from the entrance examination in 2017 is Rp 501.850.000, and the allocation is determined based on the percentage in table 5, then the estimated total contribution of income obtained from students interested in this polytechnic because ISO is Rp. 27.930.610 which is the multiplication between income 501.850.000 with 5,6 percent.

Table 4. Identification of Costs and Benefits of ISO and Accreditation

Classification	Definition (Mangkoesebroto, 1998)	Costs and benefits of ISO 9001 and APT
Real costs and benefits	Benefits / costs incurred for someone that are not offset by loss of benefits for other parties	Benefits in the form of continuous improvement in performance / organizational performance
Pseudo costs and benefits	Benefits / costs that are only accepted by a particular group, but a group of others suffer because of the project	Benefits in the form of an organization's ability to raise market prices without losing market share
Direct / primary costs and benefits	Benefits / costs related to the main objectives of the project or program	<ul style="list-style-type: none"> • ISO benefits in the form of repairing documents • Certification fees, accreditation fees, audit fees, consultation fees
Indirect / secondary costs and benefits	Benefits / costs that are not directly caused due to a project to be built or a by-product	<ul style="list-style-type: none"> • Increased number of customers / students in the future • Loss of work time
Tangible costs and benefits	Benefits / costs that can be assessed in the market	Benefits of ISO and accreditation in the form of customer satisfaction
Intangible costs and benefits	Benefits / costs that cannot be assessed in the market	ISO benefits and accreditation in the form of an increase in the reputation of the organization

On the other hand, there are around 11,8 percent of new students who are interested in entering the polytechnic due to a well-accredited reputation.

The contribution of income from Accreditation = 11,8% x Rp 501.580.000 = Rp 59.465.171. Thus, because the amount of income from the entrance examination in 2017 amounted to 501.850.000, then the estimated total contribution of income obtained from students interested in this polytechnic because of accreditation is Rp 59.465.171.

b. Non Quantifiable Benefits

In addition to the benefits of entrance examination income, the benefits felt by these polytechnic employees are based on surveys including.

Based on the table above, it can be seen that ISO does provide benefits in the form of improving polytechnic performance, increasing the number of students, student satisfaction, and organizational reputation, but the benefits of accreditation are higher compared to the usefulness of ISO. The highest gap of benefit value lies in the benefit points to increase the number of students in the future, where accreditation points are much higher than ISO. Even so, ISO values are better at usefulness points for document improvement.

Costs Comparison of ISO and Accreditation

a. Quantifiable Costs

The cost of ISO certification and accreditation is included in code 5742.012.001 Quality Assurance of Institutional and Educational Governance, showed in Table 7.

Table 6. Benefits of ISO and Accreditation

No	Benefits	Percent		
		ISO	Accreditation	Gap
1	Providing benefits in the form of continuous improvement in the performance of state polytechnics in Batam	63,5	87,1	-23,5
2	Providing benefits in the form of improving documents	76,5	70,6	5,9
3	Providing benefits in the form of increasing numbers of customers or students in the future	56,5	89,4	-32,9
4	Providing benefits in the form of customer / student satisfaction	63,5	83,5	-20,0
5	Providing benefits in the form of increasing the reputation of the State Polytechnic organization in Batam	71,8	89,4	-17,6
Average		66,4	84,0	-17,6

Table 7. Costs of ISO

No.	Activities	Costs (in thousand Rupiah)		
		2017	2016	2015
1.	Training Review, Quality Calendar and Working Procedure Improvement	10.500	8.030	73.982
2.	Internal Audit *	23.400	13.300	11.925
3.	External Audit	18.900	22.610	24.807
4.	Annual Re-Certification Fee to Certification agency**	15.000	17.110	18.907
5.	Preparation to Upgrade to ISO 2015**	6.000	14.280	-
Total		73.800	75.330	129.621

* ISO allocation internal audit fees are obtained through estimation because the internal audit carried out consists of ISO internal audit activities and financial audits which are both entered into one account

** Especially for 2017, certification agency fees and ISO upgrade preparation fees are still in the form of estimates because the real invoice has not been received.

Table 8. Costs of Accreditation

No	Activities	Costs (in thousand Rupiah)		
		2017*	2016	2015
1	Institution accreditation assessment	92.500	-	-
2	Study program accreditation and re-accreditation assessment	51.090	20.850	44.800
Total		143.590	20.850	44.800

* For 2017, the cost contains an element of estimation because all activities have not been realized.

There are various costs that arise in addition to the certification agency fees, namely internal audit and external audit activities that are quite costly. This fee is routine every year. While the costs that are not available every year but will appear periodically as part of ISO quality improvement is the cost of upgrading, which starts with gap analysis training, followed by improvements to work procedures.

The costs for accreditation showed in Table 8.

When compared to accreditation costs with ISO costs, it is seen that over the past two years, accreditation costs are always lower than the cost of ISO. Besides that, it can be seen that the fluctuation of accreditation costs is higher because it adjusts to the number of study programs that need re-accreditation or accreditation, for example in 2015 and 2017 there are 3 study programs that need re-accreditation, while in 2016 only accreditation preparations.

What is different in 2017 is that the budget for institutional accreditation because of institutional accreditation has not been submitted so that this polytechnic still needs to invite several speakers to help it understand the instruments of institutional accreditation and various other preparations. With the moment of new institutional accreditation, the budget for accreditation soared sharply from previous years.

b. Non Quantifiable Costs

As for costs that are difficult to quantify in rupiah, but felt by employees through a perception survey showed in Table 9.

Based on the table above, it can be seen that ISO is considered to require a considerable amount of work time sacrifice if averaged over one working year compared to accreditation. ISO is also considered to be quite expensive. This may be due to the annual routine cost of ISO which is internal, external, and certification agency fees, compared to accreditations that only costs after 3 to 5 years. This perception is supported by costs data over the past two years, it can be seen that the cost of ISO is higher than accreditation.

The work time per person needed if averaged within one work week in each section for completion of ISO work is 21 hours from a maximum of 40 hours per week. While for completion of accreditation work is 16.5 hours per week.

Comparison of the Implementation of ISO and Accreditation

The implementation of ISO which is in line with accreditation can be seen in the following (Table 10).

Based on the table above, ISO requires more time to socialize improvement priorities, while accreditation does not. The table above also explains the high commitment, socialization and communication of top management to accreditation and the high level of employee

Table 9. Costs of ISO and Accreditation

No.	Costs	Percent		
		ISO	Accreditation	Gap
1.	It costs a lot of money	88,2	62,4	25,9
2.	It requires a considerable amount of work time sacrifice if averaged in one working year	83,5	64,7	18,8

Table 10. Implementation Factors of ISO and Accreditation

No	Statement	Percent		
		ISO	Accreditation	Gap
1	Top management commitment	68,2	77,6	-9,4
2	Socialization and communication from top management	58,8	63,5	-4,7
3	Employee involvement	75,0	78,8	-3,8
4	Coordination between department	67,5	72,5	-5,0
5	Adequate time for socializing priority improvements	63,8	61,3	2,5
6	The quantity and quality of human resources are adequate	60,0	63,8	-3,8

Table 11: Future Improvements on the Implementation of ISO and Accreditation

No	Statement	Percent
1	The motivation of human resources to continue to implement ISO is still high	65,9
2	Quality objectives are according to the needs of the organization	72,9
3	Quality objectives support accreditation	72,9
4	Quality objectives support the strategic plan (Renstra) of the organization	76,5
5	Organizations focus more on maintaining certificates than trying to improve performance	77,6
6	ISO makes organizations focus on performance rather than focus on making documents	58,8
7	ISO procedures are too bureaucratic so they tend to inhibit rather than help work	77,6
8	The ISO procedure is good, does not require any changes	52,9
9	The audit focus is conformity to procedures (incomplete documents, etc.) rather than efforts to improve performance	81,2
10	There is still a system (which is done everyday) but is outside the ISO system	70,6
11	Documents for ISO are prepared some time before the audit	82,4
Average		71,8

involvement and coordination between departments to support accreditation.

ISO implementation in line with Accreditation

For future improvements, a number of applications that can be improved showed in Table 11.

The table above explains the existence of ISO document preparation practices just before the audit. In addition, ISO procedures need to be updated every year because changes to adjust organizational dynamics are still needed. HR motivation to keep applying ISO is below the average value. Employees disagree that ISO makes organizations focus on performance rather than focus on preparing better documents otherwise they agree more to the statement that the audit focus is conformity to procedures (incomplete documents, etc.) rather than efforts to improve organizational performance.

Table 11 above also indicates that there are still ISO document preparation practices shortly before the audit which actually shows an inappropriate ISO implementation. Indeed, all documents are filled periodically or together with their activities, not filled out when the audit is to be carried out. Sudden document preparation practices like this might make the audit tiring because the actual document work is done at once.

Table 11 also suggests that ISO procedures need to be updated every year. Changes in procedures to adjust organizational needs are still needed. As the procedure progresses, the procedure owner needs to review which procedures require simplification which procedures require more detail.

Table 11 shows that management needs to carry out a number of activities to increase HR motivation because of employees' motivation to continue to implement ISO below the average value. Employees need to be constantly reminded of the initial ISO objectives for this polytechnic, not just carrying out the supervisor's direction. The initial goal of obtaining ISO remains valid until now and can be the basis of motivation for improving the performance of state polytechnics in Batam.

Employees disagree that ISO makes organizations focus on performance rather than focus on making documents otherwise they agree more to the statement that the audit focus is conformity to procedures (incomplete documents, etc.) rather than efforts to improve organizational performance. Therefore, re-orientation towards ISO needs to be carried out to correct this perception.

Discussions

The results of this study confirm the results of Kartikasari, Sinarti, Hidayat, & Irsutami (2014) research on the importance of accreditation in influencing campus selection. The difference between the results of this study and Kartikasari et al. (2014) is the addition of ISO variables to the option options offered to students. So that this study is better able to compare the benefits of ISO-based quality management and accreditation-based.

The results of this study also support the research of Willar, Lintong, & Kaparang (2015) which evaluates the implementation of the Higher Education Internal Quality Assurance System (SPMI-PT) Manado State Polytechnic with

reference to the ISO 9001 Quality Management System (QMS). Willar, Lintong, & Kaparang (2015) asserted that if both quality management systems are carried out in tandem and support each other, then the implementation of both will run effectively in developing a strong organizational culture.

Based on the details in the previous discussion, the value of ISO benefits in 2017 is 5,6 percent equivalent to Rp. 27.930.610 while the fee is Rp. 73.800.000. Other than rupiah nominal, ISO is considered to require a considerable amount of work time sacrifice if averaged in one working year compared to accreditation. ISO is also considered to be quite expensive. This may be due to the annual routine cost of ISO which is internal, external, and certification agency fees, compared to accreditations that only cost in 3 to 5 years time. This perception is supported by cost budget data for the past two years, it can be seen that the budget for ISO costs is higher than accreditation. Even so, ISO values are better at usefulness points for document improvement.

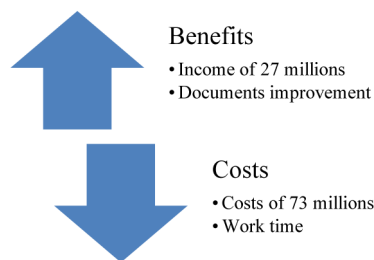


Figure 1. Cost Benefit Analysis of ISO

The value of accreditation benefits in 2017 is 11,8 percent equivalent to Rp. 59.465.171 while the cost is Rp. 51.090.000. Thus, in nominal terms, accreditation is more profitable. In addition to the benefits of entrance examination fees, the benefits felt by employees of this polytechnic include improving performance, increasing the number of students, student satisfaction, and organizational reputation, but the benefits of accreditation are higher compared to the usefulness of ISO. The highest gap in usefulness value lies in the benefit points to increase the number of students in the future, where accreditation points are much higher than ISO. Even so, ISO values are better at usefulness points for document improvement.

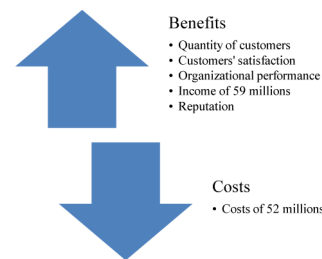


Figure 2. Cost Benefit Analysis of Accreditation

Thus, from the aspect of usefulness that is difficult to quantify, ISO is only superior to one benefit while accreditation on more aspects of benefits. Whereas from the aspect of time cost sacrifice, ISO also requires more time sacrifice. Thus, accreditation is declared superior as an education quality management system rather than ISO based on cost benefit analysis.

The results of this study do not say that ISO should be eliminated because it is less profitable for the organization. This statement is not the result of this study. In the condition that an organization is non-profit and is able to finance both types of quality management systems, both accreditation and ISO can go hand in hand and support each other. However, the organization still has to understand its main priority, namely accreditation, so that the allocation of resources must be directed to support its main priorities, not the other way around.

The principle of cost benefits generally states that only activities that value benefits exceed costs alone need to be implemented (Frank, 2000). This principle sounds very natural even though many critics cannot accept it. One reason for the rejection of this cost benefit analysis is the difficulty of quantifying the benefits and costs so that the decision results cannot be directly translated into good or bad. For example, the results of Figure 1 show that the value of ISO benefits is Rp. 27.930.610 while the fee is Rp. 73.800.000. This means that in rupiah terms alone, one can fall into the conclusion that ISO should not be implemented because the cost is greater than the benefits. But the results of this study do not support conclusions as soon as that. The results of this study state that there are still benefits of ISO in the form of improving documents that are in fact very difficult to quantify because of the many assumptions that must be put by the writers who

are very subjective so that any assumptions made will make the reader of this article more biased. Therefore, Figure 1 is made as above without guidance to quantify the benefits and costs that are difficult to quantify.

The subjectivity of decision making to stop or continue ISO depends on many factors. For example whether the organization has resources that are underloaded or overloaded. Or does the organization focus solely on prestige when it holds an ISO certification or is it true that it is purely running an ISO to obtain its benefits. This subjectivity is influenced by the mindset of all the resources involved in meeting organizational quality management.

The results of research on the importance of accreditation are in line with Suharto (2012). He stated that excellence-oriented primary education is owned if national education standards measured using instruments of accreditation are met. That is, the effort to develop an organization is essentially an effort to fulfill standards which should be the main focus of an organization including universities.

By focusing on accreditation, universities can assess themselves in carrying out education (Suhendro, 1998). Accreditation-based assessment is more standardized at the national level than ISO standards whose quality objectives vary depending on organizational commitment. Nasrun (2009) states that accreditation standards are divided into 3 components with the following indicators: 1) Input, consisting of students, personnel, facilities and infrastructure, and curriculum; 2) Process, consisting of institutional management, program management, learning management, and evaluation; 3) Output, with performance indicators. The three sections above are arranged in seven standards (BAN-PT, 2011). This research continues to support the priority of focusing on accreditation although Prasetyo (2014) found that accreditation does not have an impact on the competitiveness of universities and Wibisono (1999) argues that national accreditation may not be sufficient to face the threat of employment domination from overseas graduates.

In the last decade, there has been a lot of research and debate about the effectiveness of ISO application (Prajogo, 2010). Examples of studies that deny the effectiveness of ISOs, for example Martinez-Costa and Martinez-Lorente

(2003), find that ISO certification has no effect on financial performance in Brazilian and Spanish companies. While research examples that prove the effectiveness of ISO include Srivastav (2009) and Rosana (2009). Rosana (2009) concludes that the implementation of ISO 9001 will significantly influence the quality culture so that its application in UNY will change the orientation of organizational culture into a quality culture. This study with various limitations of research methods that limit generalization, indicates that ISO does have an impact on organizational reputation and performance because it is at an average of 66.4 percent (see Table 4), which is higher than its neutral value at 60 percent.

CONCLUSIONS

First, this study aims to uncover aspects of the benefits and costs of ISO-oriented quality management compared to accreditation. Benefits that can be quantified in the form of capability of ISO and accreditation to attract new students so that the income from the entrance examination fee is estimated for ISO is Rp. 27.930.610 while for accreditation is Rp. 59.465.171. The benefits that are difficult to quantify in the form of benefits perceived by public polytechnic employees in Batam include improving performance/ performance, increasing the number of students, students satisfaction, and organizational reputation, but the benefits of accreditation are higher in assessing their usefulness compared to the usefulness of ISO. Even so, ISO values are better at usefulness points for document improvement. For the cost aspect, ISO is considered to require a considerable amount of work time if averaged over one work year compared to accreditation. ISO is also considered to be quite expensive.

Secondly, this research also attempts to describe the implementation of ISO 9001 which coincides with APT at the State Polytechnic in Batam. In its application, ISO is perceived to require more time for socializing priority improvements, while accreditation is not. This study also shows the high commitment, socialization and communication of top management to accreditation as well as high employee involvement and coordination between sections to support accreditation. To improve the application of ISO, activities to pump motivation for HR are needed. Likewise, re-orientation of ISO so that employees focus more

on the substance of quality improvement than just document preparation. This description is expected to be beneficial for universities that are currently preparing for ISO 9001 implementation on their respective campuses.

Third, by using cost benefit analysis, this study attempts to formulate whether the State Polytechnic in Batam should maintain ISO 9001 certification or use another quality assurance model that might be more efficient. Based on the analysis of cost benefits, the research team formulated accreditation excellence towards ISO. Thus, the research team suggested that organizations focus more and devote more resources to accreditation activities. If there is a resource left after the outpouring of resources into accreditation, then the organization devotes its energy to ISO. So that there is a correct priority scale for the organization. Thus the research team suggested that both quality management systems could continue to be carried out as long as sufficient resources were available.

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PROJECT-BASED SCIENCE LEARNING AND PRE-SERVICE TEACHERS' SCIENCE LITERACY SKILL AND CREATIVE THINKING

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Abstract: This study set out to examine the effectiveness of project-based science learning towards pre-service teachers literacy skills and learning creativity in wave and optical materials. This quasi-experimental study involved 115 students of Primary Teacher Education Program, Universitas Sebelas Maret Surakarta. Direct and in-depth data dissemination techniques were used in this study. The aspects of creative thinking abilities include fluency, authenticity, elaboration, and flexibility. Mann Withney U test was used to test the hypothesis, while the N-Gain test was performed to determine the pre-service teachers improvement in scientific literacy skills and creative thinking. Both qualitative and quantitative data analyses were performed in this study. The results showed that: 1) material and optical tools-based learning activities are appropriate for the pre-service teachers scientific literacy skills and creative thinking. The correct answer term includes the highest average probability statistics from other subindicators; 2) aspects of science that are used in the aspects of literacy is in good category but the originality aspect in its ability needs to be developed and processed continuously.

Keywords: *science literacy skill, creative thinking skill, project based learning, waves and optics*

PENGARUH PEMBELAJARAN SAINS BERBASIS PROYEK TERHADAP KETERAMPILAN LITERASI ILMU DAN PEMIKIRAN KREATIF CALON GURU

Abstrak: Penelitian ini bertujuan untuk mengukur keefektifan pembelajaran sains berbasis proyek terhadap keterampilan literasi dan kreativitas belajar dalam materi gelombang dan optik. Penelitian ini dilakukan secara eksperimen semu. Subjek penelitian ini adalah 115 siswa semester Program Pendidikan Guru Pratama, Universitas Sebelas Maret Surakarta. Teknik penyebaran data langsung dan mendalam. Aspek kemampuan berpikir kreatif meliputi kelancaran, keaslian, elaborasi, dan fleksibilitas. Untuk menentukan besarnya peningkatan keterampilan literasi sains dan siswa berpikir kreatif digunakan N-Gain Test hipotesis menggunakan tes Mann Withney U. Analisis data dilakukan secara kualitatif dan kuantitatif. Hasil penelitian menunjukkan bahwa: 1) kegiatan pembelajaran berbasis material dan alat optik sesuai untuk keterampilan literasi sains dan pemikiran kreatif siswa. Istilah jawaban yang benar mencakup statistik probabilitas rata-rata tertinggi dari subindikator lainnya; 2) aspek ilmu yang digunakan dalam aspek literasi dalam aspek yang baik tetapi aspek orisinalitas dalam kemampuannya perlu dikembangkan dan diolah terus-menerus.

Kata kunci: *keterampilan literasi sains, keterampilan berpikir kreatif, pembelajaran berbasis proyek, gelombang dan optik*

INTRODUCTION

Life skills on 21st century needed for the Indonesian people are critical thinking skills, creative, communicative, problem solving and literacy culture. To build a culture of literacy, especially in the realm of education, since 2016 the Ministry of Education and Culture has

intensified the National Literacy Movement. The culture of literacy in question is a culture of reading and writing that is expected to improve the quality of human resources. However, based on the results of the 2015 Education For All (EFA) study, it was explained that there was a decline in literacy in Indonesia. This was confirmed by

the results of UNESCO's statistical data in 2012 which stated that the reading interest index in Indonesia had only reached 0.001. This means that every 1,000 residents only one person who has a reading interest (Education For All 2015). Thus, the national average of each individual is not up to one book title per person per year that is read. As a comparison, regions in Indonesia that have the highest reading interest are DIY. Then based on the data from PISA in 2015, the average score of student science literacy in Indonesia was 382 with the average scientific literacy of all participating countries following the 2009 PISA of 403. These results show that Indonesian students' scientific literacy is still low and far away below average, even Indonesia's position in the 2015 PISA countries has an average of low scientific literacy, which is in rank 64 of 72 participating countries (OECD, 2015).

One effort that needs to be done in developing literacy is by directing children to get used to reading. In the world of education, especially in schools or colleges, literacy development should be carried out effectively and efficiently. However, based on observations to students of the third semester on Primary Teacher Education Program 2016/2017 the activity of reading journals is still in the low category. The results of the analysis of lecture assignments and practicum reports, 100% of students still use references derived from blogs / wordpress / middle school books. The search for reference sources in the form of scientific works such as journals and proceedings or final assignments (thesis, thesis, dissertation) is still not used as the main reference in working on a task or to add scientific insight.

Based on the results of the interview, students are still experiencing confusion in finding reference sources in the form of journals or scientific works, such as searching the journal website. This is because during learning, students have not been accustomed to finding, reading, and analyzing references in the form of journals both nationally and internationally.

Literacy is important in the development of the world, especially in the face of the 21st century. According to Wakhidah (2012), skills in the 21st century that need to be mastered by someone include critical thinking skills, problem solving skills, creative thinking skills, decision making skills, reflective reading and writing

skills, communication skills both orally and in writing. These skills are expected to always be developed in every learning so that students are able to face the challenges of the global world.

Science is a branch of science that can develop skills in the 21st century. Chiappetta & Kobbala (2010) explains that science must be viewed from four dimensions, namely science as a way of thinking, science as a way to investigate, science as the body of knowledge, science and its interaction with technology and society. Therefore, in science learning activities must cover these four dimensions with the aim of fostering students with scientific literacy. According to Rahayuni (2016), scientific literacy is a very important thing to be mastered by every individual because this is closely related to one's understanding of the environment and other problems faced by modern society that are very dependent on the development of science and technology, including also social problems. Learning science that directs students to become literate towards science must have the ability to think critically, creatively and solve problems. Ministry of National Education (2011) and Winarni (2012) explained that science learning that should be done is learning that can prepare students to be knowledgeable in science and technology, able to think logically, be able to think critically, creatively, and solve problems in real life. Based on some of these explanations it can be implied that the goal of learning science in addition to creating students with scientific literacy, is also able to create students who have the ability to think creatively.

Fathurohman (2014) explained that students' scientific literacy abilities can be influenced by several factors, namely learning methods and models by the teacher, education curriculum and system, learning facilities and infrastructure, learning resources, and teaching materials. Factors that directly intersect with students' learning activities are the selection of learning methods and models by educators. Cahyana (2017) explains the factors that need to be considered to develop scientific literacy is to attract the involvement of students in learning and create a pleasant learning atmosphere, thus making students learn to be ready to learn and better at understanding science. One method that can be effectively used in science learning (physics) is the project method (Roziqin, Lesmono, and Bachtiar: 2018).

Hendrik & Ihtiari (2016) explained that the project learning process in an application supports the development and improvement of students' critical thinking skills. Furthermore, Sumarni (2015) states that through projects, students do not have to memorize any theory or equation (formula), but rather analysis and critical thinking by analyzing the information gathered to solve problems through the project. This pragmatic approach concentrates more on processes than content. Based on this explanation, the project method can be used as one method that can be used in developing creative thinking skills and scientific literacy abilities of students, especially in wave material and optical devices.

Some of the research that has been done on project-based learning in developing scientific literacy skills and creative thinking, among others, is Afriana's research (2016) which yields findings that project-based learning with the STEM approach can improve science literacy of junior high school students on the theme of air pollution compared to classes without using learning. project based on the STEM approach. The improvement of scientific literacy skills of male and female groups both increased with the average N-Gain in the medium category for aspects of knowledge and competence.

Research from Rohana & Wahyudin (2017) resulted in findings that project-based learning can improve students' creative thinking skills significantly higher than the expository class, with the average value of N-Gain in the experimental class in the high category and the average value of N -Gain in the control class is in the low category. Furthermore, research from Fatimah (2018) produced findings that project-based science learning has a significant effect on students' creative thinking skills. Creative thinking skills of students who use free project based learning are better than those using guided project based learning.

Based on the background explanation above, this study aims to determine the effectiveness of project-based learning in improving scientific literacy skills and students' creative thinking skills in wave and optical material.

METHOD

This research is a quasi-experimental research conducted at Primary Education

Program VI Kebumen, Universitas Sebelas Maret on students with 3 classes/groups. Research design using Pre Test-Post test Control Group Design. The sampling technique uses simple random sampling where the three classes are randomized and two classes are taken as the research sample.

Table 1. Research Design

Group	Pretest	Treatment	Posttest
A	O ₁	X ₁	O ₂
B	O ₁	X ₂	O ₂

Group A is the experimental I which is treated using the project method, while group B is the experimental II which is given a conventional method treatment that is only using the discussion method. Project-based science learning is divided into three themes, namely light waves, sound waves, and optical devices. The project theme on the concept of light and optical devices consists of holograms, kaleidoscopes, periscopes, and telescopes. The project theme on the wave and sound concept is sound resonance and mathematical pendulum. The project is completed in groups and within 1 month.

Instruments of scientific literacy abilities and creative thinking abilities are measured by tests in the form of essays totaling 10 items. The form of the problem of scientific literacy ability adapts from the development of the Test of Scientific Literacy Skills (TOSLS) by Gormally (2012). Tests of creative thinking skills include fluency, originality, elaboration, and flexibility (Torrance, 1990; Alghafri, Rashid and Salim. 2014).

Data analysis using Mann-Whitney U test with provisions if the p-value is <0.05, then the null hypothesis is rejected. Furthermore, to determine the magnitude of improvement in scientific literacy skills and creative thinking students use N-Gain with the following classifications.

Table 2. N-Gain Classification

Average N-Gain	Classification
0,70 <N-Gain ≤ 1,00	High
0,30 <N-Gain ≤ 0,70	Medium
N-Gain ≤ 0,30	Low

(Source: Hake, 2007)

RESULTS AND DISCUSSION

A. Results

Based on the results of data analysis, project-based learning can be used to develop and improve scientific literacy skills and creative thinking of students.

Table 3. Mann Withney U Test Summary Results

	Test Statistics ^a	
	literacy post	creative post
Mann-Whitney U	312.500	276.000
Z	-2.034	-2.574
Asymp. Sig. (2-tailed)	.042	.010

There is effectiveness of project-based learning on scientific literacy skills and creative thinking of students on wave and optical material.

Table 4. Summary of Average Project Class N-Gain Values

Variable	Average N-Gain Value	Category
Science Literacy Ability	0,45	Medium
Creative Thinking Ability	0,38	Medium

Project learning is able to improve scientific literacy skills and the ability to think creatively in students with moderate (good enough) categories.

Table 5. Summary of Average N-Gain Value for Conventional Classes

Variable	Average N-Gain Value	Category
Science Literacy Ability	0,28	Low
Creative Thinking Ability	0,30	Low

Conventional learning is less able to improve scientific literacy skills and students' creative thinking skills.

Students' literacy abilities on indicators organize, analyze and interpret quantitative data and scientific information better than indicators of student literacy ability to understand inquiry methods that lead to scientific knowledge.

There were differences in student literature search before and after project-based learning. The form of searching data in the form of journals and proceedings is the highest type of literature search compared to other types of literature during project learning, while the literature in the video is the second after the journal/proceedings.

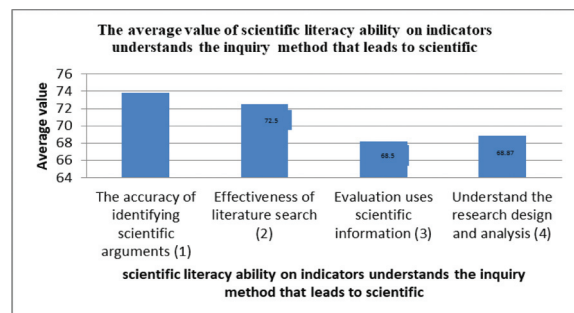


Figure 1. Analysis of the average value of scientific literacy skills in indicator I

Table 6. Results of analysis of students' scientific literacy abilities

No	Indicator of Science Literacy Ability	Average Test Value
1	Understanding inquiry methods that lead to scientific knowledge	70,85
2	Organizing, analyzing and interpreting quantitative data and scientific information	82,38
Average Score of Science Literacy Ability		76,61

Table 7. Types of Student Literature Search Before and After Project-Based Learning

No	Type of Literature	before (%)	after (%)
1	Buku	25	3
2	Proceedings / journals	13	90
3	Internet (blog, wordpress, ect)	40	0
4	Video (youtube, ect)	5	7
5	Direct observation	10	0
6	Final Project (Thesis, thesis, dissertation)	0	0
7	Dictate / module	7	0
Total		100	100

Figure 1 shows the indicator I with the sub indicators identifying the right scientific arguments showing higher average values than other subindicators, while the subindicators on evaluations in using scientific information show the lowest average value.

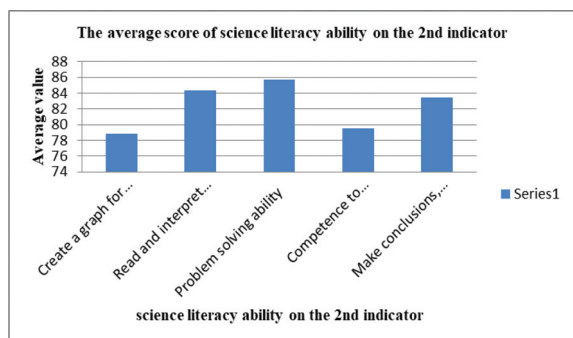


Figure 2. Average Value of Science Literacy Ability in Indicator II

Figure 2 shows that the average value of scientific literacy ability in indicator II problem solving subindicators using quantitative capabilities including probability statistics get the highest average value than other subindicators. This is indicated by quite a lot of students who can work on the problem in this subindicator correctly and precisely, while in the subindicator making a graph that can interpret the data shows the lowest average value.

Based on the results of the analysis of the test answers there are still many students who are less precise in describing the dependent variable and the independent variable on each x axis and y axis. Then there is a lack of information

on each x-axis and y-axis. This is corroborated from the results of interviews and questionnaires that 78% of students find it difficult to determine independent variables and dependent variables that must be presented in the form of graphs, tables, and diagrams. In addition, students also find it difficult to interpret special rays on lenses and mirrors in the form of images.

Figure 3 is a form of literacy ability that comes from valid sources / sources such as in scientific journals. Inclusion of sources used in this language can also be used and valid or not.

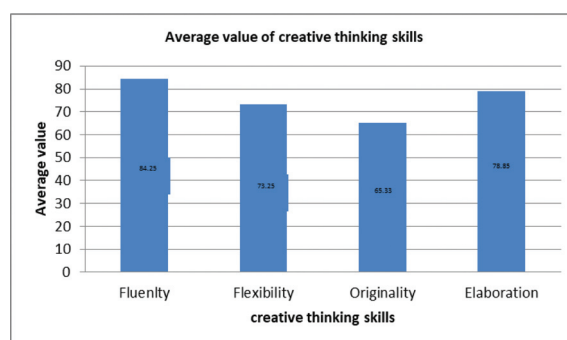



Figure 4. Average Value of Aspects of Creative Thinking Ability

Table 4 shows the average value of students' creative thinking ability with fluency aspects resulting in higher average values than other aspects. Based on the results of the analysis of student answers, students gave quite a lot of answers that varied but had the same meaning, meaning students could be said to be correct in answering questions.

A study of making simple binoculars. The method and materials used are four convex lenses, paralon pipes, connection pipes.



Simple star binocular design
(Source: Physics Journal, [Sehah 2014](#))

Based on the data above:

- Why in making binoculars need more than one convex lens?
- How do you arrange the position of a convex lens on a simple star telescope?
- If it is known the focus distance value on the objective lens is 33.70 cm and the focal distance on the ocular lens is 19.70 cm, what is the length of the binoculars that must be made? What is the nature and magnification of the shadow that will occur?

Figure 3. Examples of Forms of Scientific Literacy Ability Test Questions



Figure 5. Results of the hologram project

Figure 5 is a product of students with a hologram theme. This product describes the concept of reflection, diffraction, and interference and the amplitude and phase of the wave. In addition to holograms, students also produce products namely kaleidoscope, periscope, telescope, resonance tube to determine the velocity value of sound waves in the air, and mathematical pendulum to prove the value of Earth's gravitational acceleration.

Based on table 8, there are similarities in the project learning process with students' scientific literacy skills and creative thinking. At the stage of giving questions at the beginning of learning is able to develop scientific literacy

skills and creative thinking in terms of identifying and analyzing students' arguments from various points of view.

Table 9 shows students' perceptions during the project learning process, namely that in searching literature is the easiest activity to do, while making a practicum report is an activity that is considered the most difficult to do. Based on the results of analysis and observation, even though students have the ease of accessing journals or scientific works, in terms of analyzing journal contents, they need to be improved. While in the case of making project reports students still find it difficult if they have to fit the format of scientific work, starting from the making of the title to the writing of the right bibliography. Title making must contain at least independent variables and be bound if the project produces quantitative data such as resonance tubes and mathematical pendulum. Students still have difficulty in determining the variables during the innovation practicum, and evaluating the results of the lab to be better.

Discussion

Project-based learning begins with brainstorming through the provision of interesting and challenging questions and adapted to real life such as, "why does the sky during the day look

Table 8. Project-based learning relationships with scientific literacy skills and students' creative thinking skills

Syntax PjBL	Development of Science Literacy Ability	Development of Creative Thinking Ability
<i>Starts With the Essential Question</i>	Identify appropriate scientific arguments	<i>Fluency</i>
<i>Design a Plan for the Project</i>	Use effective literature search	<i>flexibility</i>
<i>Creates a Schedule</i>	Evaluation in using scientific information	<i>elaboration</i>
<i>Monitor the Students and the progress of the Project</i>	1. Understanding the elements of research design and its impact on scientific findings 2. Read and interpret data (graphs, tables)	<i>Originality& flexibility</i>
<i>Assess the Outcome</i>	1. Troubleshooting using quantitative capabilities 2. Understand and be able to interpret basic statistics	<i>fluency &flexibility</i>
<i>Evaluate the Experience</i>	Presenting conclusions, predictions based on quantitative data and scientific information	<i>Flexibility</i>

Table 9. Student Perceptions of PjBL Activities

Level	Name of activity								
	1	2	3	4	5	6	7	8	9
Easy (%)	90	5	10	15	20	3	58	5	23
Medium (%)	10	43	30	27	62	20	32	7	40
Difficult (%)	0	52	60	58	18	78	10	88	37
Total	100	100	100	100	100	100	100	100	100

blue and in the afternoon orange?” Or “why does the thunder sound at night sound louder rather than lightning in the daytime?” These questions aim to explore students’ initial knowledge of the wave concept, especially the concept of light and sound waves.

Initial information obtained from students is continued by giving questions to a higher level so as to train students to analyze answers to these questions and train students to solve a problem. Harper (2014) mentions project learning focusing on an in-depth investigation process involving a long and rigorous question and answer process, using resources and developing answers; and focused on open questions to understand and attract students’ attention in capturing project assignments. Muskania & Wilujeng (2017) suggested that learning using projects begins with providing problems that lead to the final product that will be produced by students.

After brainstorming, the next step students are given the task of creating and designing a project. During project design, students are directed to look for literature in valid sources and such as scientific journals and proceedings. Educators also provide freedom for students in making project designs that will be made in accordance with the literature that has been obtained. The freedom to innovate and be creative helps students in thinking about the best solutions in solving problems.

Project learning is able to train students in asking questions, thinking about different ways to solve problems, training students to categorize data, training students to think about things that are not thought of by others, and able to train students in expressing their own opinions against a problem. This is in line with the opinion of Mihardi, Harahap & Sani (2013) that project-based learning is able to train students to design, analyze, and apply students’ ideas in making a project. While Fatimah (2018) explained that project-based learning provides students with greater opportunity to think and explore their ability to complete a task and find the right concept.

Activities during the project learning process take place significantly able to improve scientific literacy skills and creative thinking of students. This is in line with the research of Rohana & Wahyudin (2017) which results in that project-based learning can improve students’

creative thinking skills. Gunawan, Sahidu, Harjono, & Suranti (2017) produced the same findings that learning using projects can increase students’ creativity. While the findings of Afriana, Permanasari, & Fitriani (2016) show that project-based learning can improve students’ scientific literacy skills. The development of creative thinking skills and scientific literacy of students during the project learning process is trained consistently and continuously by providing problems that must be solved by producing a product based on scientific literature obtained by students. Through this activity, students will be accustomed to exploring their thoughts and developing creative ideas.

This literature search is an important part of project learning. This is supported by Sumarni’s (2015) statement that project-based learning is able to improve students’ ability to search for and obtain information, students do not have to memorize any theory or equation (formula), but rather to search for information collected to solve problems through project creation. This pragmatic approach concentrates more on processes than content. During the project learning process students are always directed to find and analyze scientific literature. Chu (2011) also explained that project learning has a positive impact in developing reading and writing skills and technology literacy.

The process of searching and analyzing this literature became the main capital in developing students’ scientific literacy skills during project learning. This is as stated by Susiati, Adisyahputra, & Miarsyah (2018) that scientific literacy skills can be obtained by processing information critically and creatively through reading comprehension activities. A person who is limited in his ability to read will be very limited as well as the depth and breadth of understanding science. Therefore, students are required to read and search for literature that has been carefully and creatively obtained and critically reviewed. Morgil (2008) also suggested that in order to complete project assignments, students can search literature from various sources such as online, libraries, field visits, observations, etc. so that they can add student references in producing a creative and innovative product.

During the project learning process, educators do not provide knowledge directly, but

provide freedom to students to make discoveries (inquiry) to get the knowledge that is expected to be done in teams / groups. While the task of the lecturer is to monitor and provide assistance to students in completing project assignments up to the making of scientific reports. Freedom in expressing ideas and ideas and problem solving during project completion is able to explore students' creative thinking abilities. This is in line with Capraro's (2013) research that project learning is able to help students solve problems and train students to think critically, analyze, and improve higher-order thinking skills. The ability to think creatively is one of the higher-order thinking abilities, namely the ability to think divergently (Birgili, 2015; Khashani, et al, 2017) which consists of four aspects, fluency; flexibility; originality; and elaboration. Istiyono, Dwandaru & Rahayu (2018) suggests that creative thinking is a thought process that produces various possible answers when responding to problems given. Therefore, the project method is very relevant to be used to improve the ability to think creatively.

Collaborating with the team during project learning is a very important activity. Collaboration is one of the characteristics of project learning activities with the aim of helping students to exchange ideas / ideas and have good communication skills. As stated by Astawa, Artini, & Nitiasih (2017) which explains that the stages of project learning train students to be active and creative thinkers and engage in cooperative learning to work together on projects. Project-based learning allows students to gain deeper understanding of material by collaborating and using their ideas (active construction). Social interaction allows students to work with others to build shared knowledge. Williams (2017) explains that project-based learning provides opportunities for students to engage in active learning and opportunities to learn new soft skills such as collaboration, communication, and negotiation. See, Rashid, & Bakar (2015) states that communication and teamwork skills are skills that can be trained through project activities. Harper (2014) continued that PjBL has important elements that can train 21st century skills, one of which is communication skills.

The final stage of project-based learning is evaluating project activities that have

been carried out. Based on the results of the interview, it was found that students felt happy and motivated in making the project that had been done. Students get more new knowledge and skills during project completion while feeling challenged to complete the project. This is as stated by Sumarni (2015) that one of the advantages of using PjBL in learning is that it can increase student motivation. Chiang & Lee (2016) explained that the PjBL method is able to increase student learning motivation rather than traditional learning methods. While Suparno (2007) explained that one of the characteristics / characteristics of the project is the theme must challenge students and generally make something / product that is not commonly done. Although the project must be challenging, it is also required that it is not too difficult because it will have an impact on the time and outcome of the project completion.

Evaluation during project learning, among others, is: lack of time for project completion so that the time for conceptualization is less than optimal. Grant (2002) states that one of the disadvantages of PjBL is that it takes a long time to solve a complex problem. This results in a lack of time to explain some material / content for conceptualization. In addition, the habit of students only accepting material during lectures indirectly influences the way students think. Roziqin, Lesmono, & Bachtiar (2018) explained several obstacles in project-based learning, namely students still find it difficult to work on project activities because they are accustomed to only receiving information directly from the teacher.

Based on observations, students find it difficult to complete the practicum report with a duration of 1 week. This is because students are not used to making reports in accordance with the format of scientific work. Furthermore, making the independent and bound variables still difficult for students so that the impact of this is their difficulty in making the project. Therefore, it is necessary to familiarize students to always write observations into scientific reports so that they are accustomed to writing a scientific work. In addition, when students often conduct discovery activities, students will be accustomed to analyzing independent variables and dependent variables or other variables.

CONCLUSION

Based on the results of the analysis, it can be concluded that: 1) project-based learning on wave material and optical tools affect students' scientific literacy and creative thinking skills with a significance value of 0.046 and 0.000; 2) the improvement of scientific literacy skills shows a medium category with an average value of N-Gain 0.45 while an increase in students' creative thinking ability shows a low category with an average N-Gain score of 0.28; 3) understanding aspects of inquiry methods that lead to scientific knowledge of scientific literacy abilities and aspects of originality in the ability to think creatively need to be developed. In addition to using the PjBL model, scientific literacy and creative thinking skills can be measured using the STEM (Science, Technology, Engineering, and Mathematics) approach.

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STUDENT'S MATHEMATICAL VALUE IN MATHEMATICS LEARNING USING NON-ROUTINE PROBLEM

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Abstract: This study aims to determine the ability of students in solving non-routine problems in learning mathematics in high school. The focus of the study is the ability of students in solving non-routine problems that include the value of objectism, value of control, value of mystery, value of progress, value of rationalism, and value of openness. The subject of this study was determined purposively, that was based on the diversity of answers. The selected subject was six students of class X SMA in Palembang. The data were collected using observation, test, and interview which were then analyzed descriptively. The results show that in general the ability of students in solving non-routine problems is dominated by the value of objectism, control, rationalism, and progress. The other two values which did not dominantly appear were mystery and openness.

Keywords: *mathematical value, non-routine problem*

NILAI MATEMATIKA (MATHEMATICAL VALUE) SISWA PADA PEMBELAJARAN MATEMATIKA MENGGUNAKAN SOAL NON RUTIN

Abstrak: Penelitian ini bertujuan untuk mengetahui kemampuan siswa dalam menyelesaikan soal non rutin pada pembelajaran matematika di SMA. Fokus penelitian adalah kemampuan siswa dalam menyelesaikan soal non rutin yang meliputi nilai objektisme, nilai kontrol, nilai misteri, nilai kemajuan, nilai rasionalisme, dan nilai keterbukaan. Adapun subjek penelitian ini dipilih secara *purposive*, berdasarkan keberagaman jawaban. Subjek yang terpilih adalah enam orang siswa kelas X SMA di Palembang. Data dikumpulkan menggunakan observasi, tes, dan juga wawancara, yang kemudian di analisis secara deskriptif. Hasil penelitian menunjukkan bahwa secara umum kemampuan siswa dalam menyelesaikan soal non rutin masih didominasi pada nilai objektisme, nilai kontrol, nilai rasionalisme, dan nilai kemajuan. Dua nilai lain yang tidak dominan muncul adalah nilai misteri dan nilai keterbukaan.

Kata Kunci: *nilai matematika, soal non rutin*

INTRODUCTION

Human life will certainly never be separated from a problem. Of course as possible this problem must be overcome and not avoided. In this case, problem-solving abilities have a very important role. The government does not remain silent, the learning mathematics given to students at every level of education with the aim not only emphasizes learning outcomes but is also expected to be able to solve problems that include the ability to understand problems, design mathematical models, complete models and interpret solutions obtained (Depdiknas, 2006). From the learning objectives of mathematics above, it appears that the purpose of mathematics education in schools tends to focus on problem-solving abilities.

Polya (1973) defines problem-solving as an attempt to find a way out of a difficulty, achieving a goal that cannot be immediately achieved. According to Polya, the problem-solving process has four stages in solving it, namely (1) understanding the problem, (2) planning the solution, (3) implementing the plan, and (4) re-examining. When students are actively doing these four steps, students are optimally engaging themselves to determine strategies with related ideas in solving problems. In line with this, the importance of problem-solving is also reflected in one of the indicators of NCTM (2000) which states that learning programs from pre-childhood to grade XII must enable students to apply and adjust various strategies that are appropriate for solving problems.

Problem-solving abilities are very important in mathematics, not only for those who will later study or study mathematics but also for those who apply it in other fields of study and in everyday life (Ruseffendi, 2006). Of course, the problems that will be faced are not all mathematical problems, but the problem-solving abilities studied in mathematics have a very central role in answering the daily problems. People who are skilled at solving problems will be able to race against their needs, become more productive workers, and understand complex issues related to the global community (Wardhani, Wiworo, Guntoro, & Sasongko, 2010). This is why mathematics is still being studied even though it is already in college.

Problems can also be related to problem-solving, but not every problem can be called a problem. The problem will be a problem only if the question shows a challenge that cannot be solved by routine procedures that are known to the perpetrator (Wijayanti, 2012). A question is divided into two types, namely routine and non-routine questions. Routine questions are questions that can be solved by the procedures that have been studied. While non-routine questions are problems that have no fixed procedures to complete and require the use of one or more strategies to be solved (Yazgan, 2016). As for the problem to solve non-routine questions, further thinking is needed because the procedure is not as clear or not the same as the procedures that have been studied. In this new situation, there are clear objectives to be achieved, but the way to achieve them does not immediately appear in the minds of students (Aisyah, 2007).

Giving mathematics problem-solving questions will train and guide students to use the appropriate mathematical skills and concepts that they have learned to solve the problems they face (Utari, Arista, & Fitri, 2016). By giving non-routine questions, students will be accustomed to being placed in situations where they have to think mathematically and then be proficient in mathematical thinking through repetitive situations. From the description above it can be concluded that the problem-solving ability of non-routine math problems is the ability of students to solve mathematical problems in the form of questions, but the problem makes students do not directly know how to solve it, need further thinking because the procedure is

not as clear as the procedures that have been studied.

The fact that happened, mathematics education which was considered important, had not shown satisfying conditions for the world of Indonesian education (Hasratuddin, 2008). The core problem in mathematics education in Indonesia is the low quality of education indicated by the low student achievement both on a national and international scale (Zulkardi, 2005). The achievements of Indonesian children in the field of mathematics are always slumped every time reports are issued by PISA and TIMSS.

Based on the PISA study report, in 2000 Indonesia was in the 39th position out of 41 countries, in 2003 it was 38th out of 40 countries, in 2006 it was 50th out of 57 countries, in 2009 it was 61th out of 65 countries, in 2012 it was 64th out of 65 the country and 2015 placed Indonesia in 63rd position out of 70 countries (OECD, 2016). Based on data from the 2011 TIMSS results for the category of junior high school Indonesia ranked 38 of 42 countries (IEA, 2013), in 2015 for the SD category, Indonesia was ranked 45 of 50 countries (IEA, 2015). As for the OECD (2013), almost 80% of Indonesian students are at level one and only 25% of students who reach level two and above. Analysis of the results of TIMSS 2015 shows that Indonesian students tend to master routine, simple computational questions, and measure knowledge of daily contextual facts (Tim Puspendik, 2016). It's really sad that this can happen because this data shows that the achievement of Indonesian students in the field of mathematics is so low in the international world. In fact, the purpose of mathematics learning in accordance with the 2013 Curriculum is that students are required to be able and skilled in solving problems and linking mathematical concepts in daily life (Kemendikbud, 2013).

As is well known, PISA contains material about routine and non-routine questions that are used to measure the level of mathematical problem-solving abilities with 25% of the material, number of numbers, algebra, and statistics. It is very regrettable that the material for international standard examinations, in this case, is that PISA is tested not all of them are mastered by students so that Indonesian students cannot answer them because the test material

provided is non-routine questions (Kesumawati, 2009). Likewise, with the TIMSS study, Noer (2009) said from the results of the TIMSS study revealed that Indonesian students were weak in solving non-routine questions related to proof and problem solving that required mathematical reasoning, finding generalizations and finding relationships between data or facts which is given. This means that mathematics learning, especially non-routine questions, needs to be designed so that it can trigger students to be able to analyze and use mathematics in their daily lives.

The lack of skilled students in solving non-routine questions, one of them is because students are rarely taught non-routine questions themselves (Doorman et al, 2007). During this time taught mostly in school is closed mathematical problems and in solving these closed mathematical problems, the procedure used is almost standard (Suandito, 2009). Therefore, the use of non-routine questions in mathematics learning must be more often applied to students in Indonesia in the hope that students have the ability to solve problems that are supposed to be owned by students.

Non-routine questions are questions whose resolution requires a complex strategy. Therefore, to solve non-routine questions must involve cognitive, effective, and psychomotor aspects. The most dominant affective aspect, in this case, is the value of mathematics (*mathematical value*) applied by students in solving non-routine problems (Aisyah, 2007). Mathematical value is a person's tendency towards a more meaningful understanding of mathematics. Furthermore, Seah & Bishop (2000) identified three pairs of interrelated mathematical values namely, rationalism-objectism, control-progress, and openness-mystery.

a. Rationalism - Objectism

Value of rationalism shows the ability to use deductive reasoning involving ideas that depend on logic, hypotheses, and arguments, while the value of objectism shows the ability to use symbols that can conclude mathematics that has abstract language (Bishop, 1999; Seah & Bishop, 2000).

b. Control - Progress

Control values show the ability to use rules and the ability to apply ideas to situations of solving everyday life problems, while

progress values indicate the ability to generalize about ideas or procedures for solving mathematical problems to be used in other problem situations, showing how to use non-routine settlement strategies, making generalizations based on specific examples and generating student motivation with a history of mathematical development (Bishop, 2000).

c. Openness - Mystery

value of openness shows that the ability to discuss and analyze mathematical theorems, ideas, and arguments, while the value of mystery shows that mathematics has relationships, patterns, and surprises in it.

The emergence of mathematical values will make learning more memorable, interesting, meaningful and useful to students. This is because the value of mathematics will arouse a sense of beauty towards mathematics, generate an understanding of mathematical interests in life and can help students master the power of mathematics better (NCTM, 1989).

Research on mathematical values has been carried out by Ali (2005). This study found three perspectives of teachers' thinking on the meaning of mathematical values, namely the value of mathematics as pure value, the value of mathematics as an intrinsic value, and the value of mathematics as a useful value in life. Another study was conducted by Seah & Bishop (2000), Dollah (2005), and Resi (2012) who found the application of mathematical values by teachers in teaching mathematics in class. The last is the research of Indaryanti, Aisyah, & Erfiani (2017) showing that students apply mathematical values when solving mathematical problems with modeling. The mathematics values applied by this student are the value of objectism, the value of control, the value of mystery, the value of rationalism, and the value of progress. However, in these studies, the questions used were only limited to routine questions. Research that focuses on non-routine problem solving has not been discussed in depth. Therefore, this study will examine in depth the ability of students to solve non-routine problems in learning mathematics in high school.

METHODS

This research is a descriptive study with a qualitative approach. The focus of this study

is the ability of students to solve non-routine questions on mathematics learning in state high schools in Palembang. Ability is ability; proficiency; strength (Kamus Pusat Bahasa, 2008). As for solving non-routine questions, further thinking is needed because the procedure is not as clear or not the same as the procedures that have been studied, in the new situation, there are clear objectives to be achieved, but the way to achieve them does not immediately appear in the minds of students (Aisyah, 2007). The research subjects were determined *purposively*, based on the diversity of answers. The subjects selected were class X public high school students in Palembang academic year 2017-2018 as many as six people. The six students were chosen, because they have a variety of abilities in solving non-routine questions seen from the aspect of mathematics values, getting recommendations from the teacher and being willing to be involved in the research.

The ability of students to solve non-routine questions includes the value of objectism, the value of control, the value of mystery, the value of progress, the value of rationalism, the value of openness with indicators as follows.

1. Value of objectism (the ability of students to translate everyday problems in mathematical sentences that are simpler by using symbols)
2. Value of control (the ability of students to use rules or formulas in solving mathematical problems)
3. Value of mystery (the ability of students to solve problems related to beauty/uniqueness in mathematics)
4. Value of rationalism (the ability of students to investigate the truth of the steps in solving mathematical problems or students using mathematical manipulation in completing tasks)
5. Value of progress (the ability of students to solve mathematical problems in other problem situations or students make conclusions about something or procedure for solving mathematical problems)
6. Value of openness (the ability of students to use their own way of solving problems)

In the implementation phase, the researcher first guides and observes 34 students through their answers on LKPD (Student Worksheet). LKPD which contains real non-routine problems with the material of the Three Variable Equation System (SPLTV) is given for two meetings, with the aim of guiding students to be able to solve non-routine problems. Then a written test was given in the form of three non-routine questions about SPLTV material to class X high school students in Palembang. In working on the test questions students were given a time limit of 90 minutes. The non-routine questions used by researchers as test questions are questions that have been developed in the research of Indaryanti, Aisyah, Astuti, & Winarni (2017). Of the three questions tested to students, not all indicators can appear on each question, because the criteria given are not supported for the indicator, this can be seen in Table 1 below.

In this study, the subject's ability to solve non-routine questions is categorized into three categories, including high, medium, and low categories categorized by looking at the number of mathematical values that appear on the subject through observation, analysis of the results of written tests, and interviews. From the results of the written test analysis, the researcher obtained an overview of the abilities of 34 students. Then nine students were chosen as prospective subjects who had a variety of answers. Nine students were then discussed with the teacher. Then, the teacher recommended six out of nine

Table 1. The emergence of Indicators of Ability to Complete 3 Non-Regular Questions in Problem Test

Problem no.	Students' Mathematical Values Completing Non-Routine Questions						Total ✓
	Objectism	Controls	Mysteries	Rationalism	Progress	Openness	
1.	✓	✓	-	✓	✓	✓	5
2.	-	✓	-	✓	✓	✓	4
3.	-	-	✓	-	✓	✓	3
Amount							12

Remarks

✓ : Indicators can appear

- : Problem is not supportive to bring up indicators

students as prospective subjects. Researchers asked the willingness of six prospective subjects to be examined further, namely interviewed and they all agreed. So from this process, six people were chosen as subjects in this study (Dollah, 2007). The six people are students who have heterogeneous abilities and motivation. After the research subject was determined, the researcher began to conduct interviews. The interviews used in the study were semi-structured interviews using interview guides derived from the topic development and were presented with more flexibility, the purpose of which was to deepen information about students' ability to solve non-routine questions that had been obtained from test data. As for this study, interviews were conducted once for each subject.

RESULTS AND DISCUSSION

The results of the study

The research process from the planning study includes the determination and selection of research topics of school as a place of research, which in turn is carried out through three stages of the research, which is under preparation, data collection, and data analysis. In the data analysis stage, an analysis of the subject's ability to solve non-routine questions is based on the appearance of the indicator on the subject's answer sheet during a written test and analyzing it also based on the results of the interview. Table 2 below is the result of the analysis of capability data based on the subject's written test.

Table 2 above shows that the information from three written test questions given to students, it turns out that indicators 1, 2, and 4 are the dominant indicators that appear in students. For indicator 5, it turns out there are still students whose abilities do not appear, while indicators 3

and 6 are non-dominant indicators that appear in students.

The value obtained by the subject is then classified according to the categories that have been made by the researcher based on the modification of Aisyah (2016) and Arikunto (2015). As in table 3 below:

Table 3. Classification of Categories of Ability to Complete Non-Routine Questions

No.	The number of indicators that appear (from 3 questions)	Ability Category
1.	11-12	High
2.	9-10	Medium
3.	0-8	Low

The selected subjects include high-ability subjects (Subject AT and NA), two students with moderate ability (JP and SW subjects) and two other low-ability mathematicians (MT and WI subjects). Complete results of data analysis based on test results are also supported by interviews presented below:

Value of objectism appears in the answers of all subjects in problem number one. As the answer of WI subject in Figure 1 translates the existing problems by making these problems into more mathematical sentences simple, namely by using the symbol x for Dika, y for father, and z for grandfather.

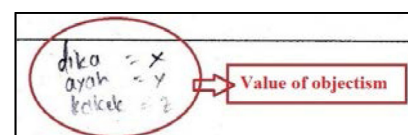


Figure 1. The answer to question No. 1 of the WI subject to the value of objectism

Table 2. Subject Ability to Resolve Non-Routine Questions

Name of	Indicator / Problem No																		Quantity ✓
	1			2			3			4			5			6			
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	
SW	✓	-	-	✓	✓	-	-	-	✓	✓	✓	-	✓	✓	✓	✓	✓	✓	12
NA	✓	-	-	✓	✓	-	-	-	✓	✓	✓	-	✓	✓	✓	✓	x	✓	11
AT	✓	-	-	✓	✓	-	-	-	x	✓	✓	-	✓	✓	✓	✓	✓	x	10
JP	✓	-	-	✓	✓	-	-	-	x	✓	✓	-	✓	✓	✓	✓	x	x	9
WI	✓	-	-	✓	✓	-	-	-	x	✓	✓	-	✓	x	✓	x	x	x	7
MT	✓	-	-	✓	✓	-	-	-	x	✓	✓	-	✓	x	x	x	x	x	6

Description
 ✓ : Mathematical value indicator that appears
 x : Indicator of mathematical values does not appear
 - : Problem not supporting to bring up indicators

As according to WI, when asked what was the first step he chose, the WI subject said that he first symbolized the known data with the aim of making the data more detailed. This means, even though the WI subject is a subject with a low ability category, the value of objectism can still appear to him.

Control values that use subject rules or formulas also appear in all subjects. This value can be seen in the subject's answer to questions number 1 and 2. For problem number 1, the control value can be seen in the answer of subject SW. WI subjects use the concept of elimination as shown in Figure 2. Subjects made several eliminations on existing equations and processed the data until the value of was obtained $b = \frac{1}{8}$.

Figure 2. Answers to problem no.1 subject SW for control values

When conducting interviews, information was obtained that the subject is able to and understand the meaning of the elimination done. As for problem number 2, the control value can be seen in the answer to the JP subject as shown in figure 3. JP subjects do the elimination and substitution to solve the given problem.

Figure 3. Question No. 2 of the JP subject for the control value

When interviewing the subject stated that in solving the problems in problem number 2, the JP subject used elimination and substitution he had learned in junior high school and also in high school. According to him, this step is chosen by the subject because elimination and substitution

he considers being the most appropriate way to find the correct answer to problem number 2. This means that the control value does appear on the JP subject.

The mystery value of the subject appears in terms of solving problems related to beauty or uniqueness in mathematics in problem number 3 which can be solved by various strategies as shown in Figure 4. In this study, the value of mystery only appears in subjects with high ability categories only, namely on the subject SW and subject NA. Whereas in subjects with the medium ability and low ability categories, the value of this mystery does not appear. For subjects with low ability and medium ability, they stated that they had tried to guess and some were counting, but they still did not find the right answer. There are also subjects who have given new symbols for the empty circle in question, then use the steps as the SPLTV material, but he also cannot find the right answer.

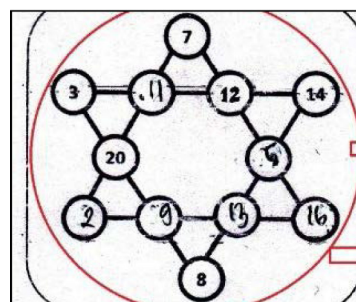


Figure 4. Question number 3 subject SW for mystery value

Although when interviewing the subject SW stated that in solving this given problem he used a guessing strategy to find the answer, it turns out that as in Figure 4 it can be seen that the SW subject is able to find the correct answer, he finds the same amount for each line, which is 40.

The value of rationalism appears in all subjects, both in number 1 and in problem number 2. In the JP subject, the value of rationalism appears in questions number 1 and 2 when the subject investigates the correct steps in completing the problem. The following in Figure 5 is the answer to the JP subject to problem number 1 which proves the results he has obtained.

Figure 5. Question answer no.1 JP subject for the value of rationalism

When the researcher asked what was the purpose of the step chosen by the JP subject as shown in Figure 5, the JP subject stated that this was done to prove whether the answer he obtained was true or not. As for the MT subject, the value of rationalism arises when he manipulates the questions number 1 and 2. The MT subject makes what data is known and asked about the problem as in Figure 6 below Question

Figure 6. Question answer no.2 MT subject for the value of rationalism

The statement of the MT subject to the following researcher supports the emergence of the value of rationalism in problem number 2: “This is made known as a, b, c , and is constantly being asked (in the matter). Asked value of $(a - b)^c$ ’. The subject states that he first made the data known and the question asked. The

Value of progress appears in all subjects. In the questions, number 1, 2, and 3, the subject draws conclusions about an existing problem-solving procedure or procedure Figure 7 shows the emergence of the value of progress on the subject NA. The subject NA makes a conclusion to the problem in problem number 1.

Figure 7. The answer to problem no.1 subject NA for the value of progress

When interviewed between the researcher and the subject NA, according to the subject NA the conclusion for the result was that Dika can finish the job for 12 hours, the father can complete the work for eight hours and grandfather can complete the job for 24 hours. The results of the interview stating that he has obtained the time needed by Dika, father and grandfather as in Figure 7 also supports the emergence of the value of the subject’s progress NA, as for the appearance the value of progress on Question 2, can be seen on the subject answers AT like those in figure 8. Initially, the subject of important steps to resolve issues related to the problem turned this value, then eventually the subject of AT makes a final conclusion that is $(0)^{\frac{0-1}{40}}$ to solve the problem in problem number 2.

Figure 8. Question answer No. 2 subject AT for the value of progress

Although in the interview between the subject of AT and the researcher, the subject of AT stated that he did not know exactly what the value of $(0)^{-\frac{1}{40}}$, but in fact he has made a conclusion that the final answer was $(0)^{\frac{0-1}{40}}$ thus the value of the progress still remains on the subject of aT. As for problem number 3, the value of progress can be seen in the answer to the subject WI in figure 9. When the researcher conducted an interview with the WI subject, the WI subject stated that he had tried to answer in a guessing way but the results seemed inappropriate. However, even though the results given by the WI subject are not correct, where there is each line that amounts to 30, 33, 46, also 48, so the number of numbers on one line that he answers do not give the same amount. Whereas in question number 3, the subject should be able to find the numbers so that the number of each line is the same, but still it must be admitted that the WI subject has made conclusions as in Figure 9 below:

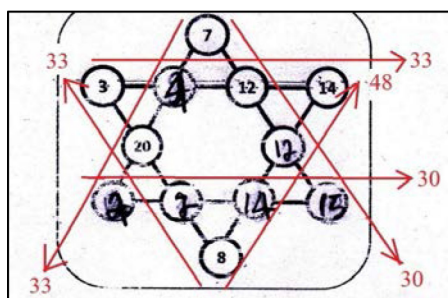


Figure 9. Question number 3 WI subject to the value of progress

Openness value is subject only based on the results of the analysis of the subject's answers without interviews, then the value of openness only appears in the SW subject that is the answers to questions number 1, 2, and 3, the subject NA on the answers to questions number 1 and 3, subject AT on the answer the questions number 1 and 2, and JP on the answer to question number 1. But after the interview with the subject of SW and subject AT of their answers to problem number 2, the two subjects were unable to explain the value from . So that the openness value does not appear on the answer of the subject SW and subject AT in matter number 2. The appearance of the openness value for the subject of AT is shown in Figure 10:

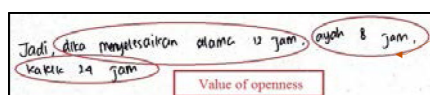


Figure 10. Question 1 of the subject AT for the openness value

Subject AT states that the final answer gets that Dika can finish for 12 hours, dad can finish for 8 hours and grandfather can finish for 24 hours. This also supports the emergence of the value of progress on the subject AT.

The openness value also appears in the answer to question number 3 as in figure 11 which is the answer to the subject NA. With a trial and error step, NA subjects were able to find answers correctly. Each line has the same number of 40, as shown in this figure:



Figure 11. Question No. 3 subject NA for the value of openness

When interviewed, subject NA stated that he used trial and error several times to find the right answer, only then did he succeed in getting the right answer.

Discussion

In mathematics learning, students should not only obtain knowledge through subjects but indirectly be educated through the values that exist in learning (Othman, Zakaria, & Iksan, 2014). Bishop (2008) identifies three interconnected mathematical values, namely, rationalism-objectism, control-progress, and mystery-openness. In this study, the three related values are further translated into six values, each of which remains in touch, including the value of objectism, the value of control, the value of mystery, the value of rationalism, the value of progress, and the value of openness.

These six values have their own descriptors, including the value objectism descriptor that is students translate everyday problems in the form of simpler mathematical sentences using symbols. Descriptors value student control, which uses rules or formulas in solving mathematical problems. Descriptors are mystery values that our students solve problems related to beauty/uniqueness in mathematics. Descriptors value rationalism, namely students investigate the truth of the steps in solving mathematical problems or using mathematical manipulation in completing tasks. Descriptors of progress values, namely students making conclusions about an idea or procedure for solving mathematical problems. Finally, the descriptor is the value of openness, i.e. students solve problems using their own methods.

Based on the results of the analysis of test and interview data, indicators for students' ability to solve non-routine problems were the dominant subjects in this study, in fact, only four of the six indicators were expected, including the value of objectism, value of control, value of rationalism, and value of progress. While the value of mystery and the value of openness becomes a little value appears. The value of objectism is the value that appears in all subjects. The subject is able to translate the problem in the form of a story problem to a more simple mathematical sentence form using symbols and/or and say that this is done to facilitate the subject in solving the problem. This value is due to

students accustomed to being taught by the teacher to translate problems in story problems with symbols, in teaching the teacher indirectly implements this particular ability to his students as described Dollah (2005), generally the application of objectism values implicitly implicit in classroom teaching, students describe the meaning of the problems they encounter by representing the problem back into symbols or diagrams to help in understanding the problem and then applying problem-solving to make it easier. This is what makes that in all subject the objectism values appear.

The values control also appear in all subjects. The value of this control is caused by the experience of the subject to solve previous problems. Subjects have studied and used substitution and elimination rules that have been learned during junior and senior high school on SPLDV material. Now, the subject is applying it to non-routine questions that can be solved with SPLTV. Sternberg & Sternberg (2012) stated that the use of previous experiences is an analogy approach in problem-solving. As well as Mairing (2017) said a good problem solver has a problem-solving plan that has been resolved before useful in developing a plan to solve the problem at hand. Subjects are able to use their knowledge to solve existing mathematical problems until finally, the control value can emerge, this is in agreement with Hudojo (2005) which explains that students who have knowledge related to other knowledge, the students are better able in solving problems.

The value of rationalism is also a dominant value that emerged in this study. Dollah (2005) states "The dominant value of mathematical value is the value of rationalism and objectism" in other words, the dominant value involved in mathematical value is the value of rationalism and the value of objectism. Subjects are able to prove for questions number 1 and 2, some are doing mathematical manipulation correctly. The emergence of the value of rationalism is also caused by the modeling learning chosen by the researcher, because based on the results of Efriani, Aisyah, & Indaryanti, (2017) research on the use of worksheets based on control values and rationalism values in learning mathematical modeling shows good categorical results to increase the value of student rationalism. As before, researchers use LKPD by using a

modeling approach to lead students so that their rationalism values can emerge.

For the value of mystery that is only controlled by subjects with high ability category, it actually only requires the ability of the subject to first understand the problem, find the best way then, find the solution. Two subjects who solved exactly the number 3 problem, where this question supports the emergence of the value of mystery by trial and error. Basically this problem can indeed be solved by guessing or trial and error, but of course further thought is needed to solve the problems related to the value of this mystery, because the problem given is a new situation that has never been met before (Retnowati, Fathoni, & Chen, 2018).

The things that make the value of the mystery of the majority of the subject does not appear as well Yeo & Joseph (2009) explains that the problem of non-routine, namely: "*It had to be reasonably complex but approachable and requiring no specific high-level mathematics.*" In other words, Non-routine problems are complex problems that are logical but can be solved and to solve them does not require a certain high level of mathematics. Plus teachers rarely provide non-routine types of questions such as questions given by researchers, in line with the opinion of Suandito (2009) that teachers still rely a lot on textbooks including the selection of test material for student evaluation even though mathematics textbooks contain little non-routine questions.

The value of progress is also a dominant value. The subject that does not appear in the progress value is believed to be because the subject has difficulty in understanding the concept of operations in the given form of algebraic fractions. As with Widiyanti, Zubaidah, & Yani, (2015) regarding the analysis of students' difficulties in solving algebraic fraction material problems explained that students' difficulties occur because students do not understand the concept of operations in algebraic forms. Weaknesses and difficulties of students in answering problem-solving problems are caused by low mastery of mathematics, such as mathematical concepts (Hartati, Abdullah, & Haji, 2017). In fact, by solving mathematical problems, making mathematics does not lose its meaning, because a concept or principle will be meaningful if it can be applied in problem-solving (Sunarto, Budayasa, & Juniati, 2017). It

is an apprehensive situation, because the subject whose progress does not appear means losing the meaning of mathematics itself.

Based on the results of the study it was also found that the value of openness became the least value that appeared. Students have difficulty pouring their own thoughts or ideas to solve problems. The causes of this matter are explained in the research Mujulifah, Sugiarno, & Hamdani (2015) which explains that there are many students who are not fluent in composing their arguments, due to the lack of trained students in communicating their understanding, ideas or ideas, students are tend to imitate example because they did not possess sufficient knowledge base to try solving problem using their own arguments (Retnowati, Ayres, & Sweller, 2018). Although teachers tend to provide opportunities for students to try to answer themselves, but unfortunately often teachers limit the strategies that may be used by students, plus the ability of students to be less developed because students are only used to pay attention to examples then record the completion shown by the teacher (Juanti, Santoso, & Hiltrimartin, 2016, 2005; Aisyah, 2016). A short settlement without understanding deeper concepts that result in students having difficulty in assembling arguments to show their understanding, as well as in terms of presenting the results of problem solving.

Not the emergence of value this is also due to the understanding of subjects in this study not related to other knowledge about the meaning of SPLTV, agreeing with Mairing (2017) that inability is due to students' understanding of SPLTV is limited to procedural knowledge without meaning. These conditions make the entire process carried out by students in solving the mathematical problems given from the beginning and end do not give satisfactory results.

CONCLUSION

Based on the results of the study, it can be concluded that there are two subjects who are able to perform all indicators, namely indicators translating problems using symbols, using rules or formulas, solving problems related to beauty/uniqueness in mathematics, investigating the correctness of steps steps or using mathematical manipulation, drawing conclusions on ideas

or procedures for solving mathematical problems, and solving problems using their own methods. The other two subjects are able to translate problems using symbols, using rules or formulas, investigating the correctness of steps or using mathematical manipulation and drawing conclusions about ideas or procedures for solving mathematical problems. As for the ability to solve problems using their own methods, only appears a little. While the ability to solve problems related to beauty/uniqueness in mathematics does not appear at all. The last, two subjects are only able to translate problems using symbols, using rules or formulas, and investigating the correctness of steps or using mathematical manipulation. The ability to draw conclusions on ideas or procedures for solving mathematical problems appears only a little. While the ability to solve problems related to beauty/uniqueness in mathematics and also the ability to solve problems using their own methods does not appear at all.

In general, the ability of students to solve non-routine questions is still dominated by the ability to translate problems using symbols that are part of the value of objectism, using rules or formulas that are part of the value of control, investigating the correctness of steps or using mathematical manipulation which is part of the value of rationalism and draw conclusions about ideas or procedures for solving mathematical problems that are part of the value of progress. While the other two abilities are not dominant in non-routine problem solving, namely the ability to solve problems related to beauty/uniqueness in mathematics and the ability to solve problems using their own methods. These two abilities in a row are part of the value of mystery and the value of openness.

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STUDENTS' DESCRIPTIVE WRITING PERFORMANCE: THE ANALYTIC SCORING ASSESSMENT USAGE

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Abstract: This study explores students' performance in descriptive writing. Forty-five English Education sophomore students participated to be the respondents. The data were collected from students' descriptive writing performance using a 5-Likert scale and they were quantitatively analyzed through the descriptive and factor analysis tests. Students' descriptive writing were measured through the components of grammar ($M = 3.00$; $SD = .476$), punctuation ($M = 3.93$; $SD = .495$), coherence ($M = 3.60$; $SD = .539$), cohesion ($M = 3.22$; $SD = .517$), and content ($M = 3.51$; $SD = .894$). Other substantial findings corresponded with the principal component analyses that determined the presence of 5 components with the eigenvalue outreaching 1, positioning 31%, 27.3%, 19.7%, 12.6%, and 9.4% of the variances accordingly. This referred to the factorial analysis that claimed 2 extracted components with a total of 58.32% of the variance. The component 1 was 31.00% and component 2 was 27.32%. The interpretation of these components is coherent with the pilot results on the descriptive writing performance scale, in which the component 1 shows the positive affect items and the component 2 partially indicates the negative affect items.

Keywords: *Analytic scoring, descriptive writing, factor analysis*

PENINGKATAN MENULIS DESKRIPTIF MAHASISWA: PENERAPAN ASESMEN PENSKORAN ANALITIK

Abstrak: Penelitian ini mengeksplorasi capaian peningkatan mahasiswa dalam menulis esai deskriptif. Empatpuluh lima mahasiswa pendidikan Bahasa Inggris berpartisipasi sebagai responden. Pengumpulan data diambil melalui hasil esai deskriptif mahasiswa dengan menggunakan 5 skala Likert dan analisis data dilakukan secara kuantitatif melalui uji deskriptif dan analisis faktor. Esai deskriptif mahasiswa diraih melalui komponen gramatika (Rerata = 3,00; Simpangan Baku = 0,476), tanda baca (Rerata = 3,93; Simpangan Baku = 0,495), koherensi (Rerata = 3,60; Simpangan Baku = 0,539), kohesi (Rerata = 3,22; Simpangan Baku = 0,517), dan konten (Rerata = 3,51; Simpangan Baku = 0,894). Temuan substansi lainnya terkait dengan analisis komponen utama yang menetapkan 5 komponen dengan raihan 1 nilai eigen yang menempatkan 31%, 27,3%, 19,7%, 12,6%, dan 9,4% varian. Temuan ini merujuk pada analisis faktor dengan 2 komponen yang diraih sebesar 58,32% dari keseluruhan varian, di mana komponen 1 sebesar 31,00% dan komponen 2 sebesar 27,32%. Tafsiran atas 2 komponen ini koheren dengan hasil awal skala capaian peningkatan esai deskriptif, di mana komponen 1 menunjukkan butir positif dan komponen 2 menunjukkan sebagian butir negatif.

Kata Kunci: *Penskoran analitik, esai deskriptif, analisis faktor*

INTRODUCTION

In the recent years, the lecturers frequently promote how to become *creative* to their students in dealing with the writing creativity, although they have the various meanings of creativity and even some students are still difficult to understand what is meant by being creative (Randi & Jarvin, 2006). So far, writing typically presents a tremendous challenge to

higher education students, particularly for sophomore students. Loreto and McDonough (2013) point out that writing can provoke anxiety among students. Writing anxiety refers to a situation-specific individual difference that reflects students' inclination to approach or avoid situations requiring writing, along with the evaluative perceptions. For example, descriptive writing instruction has emphasized the writing

structure substantively, fulfilled the function of writer's intention, and considered adequate as well (Penner, 2007). It means when writing paragraphs, students conditionally manipulate some aspects of writing, such as syntactic and morphological structures of sentences in order to express their ideas (Schirmer, Bailey, & Fitzgerald, 1999).

On the other hand, a high-stake testing is still used to measure students' achievements upon their grading levels, mappings, and punishments that categorize students into fast and or slow learners (Meisels, Xue, & Shablott, 2008). When students' experience contributed to writing performance, they learned the code system via taking-apart and built up learning (Maraschiello, 2003). Students' essays can be possibly perfect when the feedback is gained from both teacher and peers, who review the writing components, such as spelling, grammar, punctuation, capitalization, etc to produce the effective compositions (Nezakatgoo, 2011), as well as adopt the model of the character-based learning that complies with the honesty, sense of care, communication, and collaboration (Prastika, Setiawati, & Sumekto, 2018). The model may conditionally alters the learning approach that helps the students develop their skills (Sumekto, 2018). Recently, writing has become more important as principles of communicative language teaching rather than as an object of study. This means that writing is viewed as either a standardized system of communication or as an essential instrument for learning (Weigle, 2002), since the interaction and individual performance by means of classroom learning participation has been contributed (Sumekto, 2014a). On the other hand, lecturers' feedback basically had better cover all aspects of content, organization, grammar, vocabulary, and mechanics) through some commentaries (Telçker & Akcan, 2010) that lead to students to be more active in writing improvement (Loreto & McDonough, 2013).

The writing feedback is meant as a process of collecting and documenting students' learning evidence and progress to deal with the informatively instructional, placement, programmatic, and evaluative decisions (Lenski, Ehlers-Zavala, Daniel, & Sun-Irminger, 2006) through the use of analytic rubric. The analytic rubric may impact the scoring processes substantially even the processes are

time-consuming as typically assessing several different skills and individually requiring a lecturer to examine the product several times. Its implementation determines the specific feedback on students' performance with the respect to each individual scoring criteria (Mertler, 2001). Jonsson and Svingby (2007) support the analytic rubric intensively as a means of assessing higher-order thinking processes and solving the problems. The rubric used to indicate the writing samples that evaluate individual features of a text to determine the value of the text as a whole. The rubric is generic and not only specific to the particular writing genres. The overall scores are designed by adding the score assigned for each feature. Scores can be conditionally weighted in variances, so that features like thesis, organization, and development award are more significant in the overall scoring than other features like grammar, mechanics, and usage (O'Neill, Moore, & Huot, 2009).

In a scoring system, the writing samples are rated on several important aspects of quality to capture students' weaknesses and strengths and work with raters' decision-making processes (Lee, Gentile, & Kantor, 2008). The rubric is specifically classified to increase judgment consistency when promoting the learning, assessing assignments, authentic tasks, and achievements as well as accommodating valid performance assessment that cannot be achieved by means of the conventional written tests (Jonsson & Svingby, 2007). The advantages to this analytic scoring provide more information about the test takers' performance. It earns useful diagnostic feedback on writing ability and additional information about students' writing ability that accommodate the placements and decisions (Wiseman, 2008).

The rubric contains a scale of points with specific descriptors which are used to evaluate writing pieces. Martinez (1997) emphasizes the points generally range from zero to four (a 4-point rating scale), whilst four is being the highest possible score. The rubric shall be written in the concise language and includes a scoring point for any level of performance. Martinez recommends that the use of rubric provides a set of criteria that is used to evaluate students' writing. These guidelines are designed to focus on the originality, details, fluency, imagination, and content of the document, rather than judge the work on grammatical usage and spelling, as

practiced in the past. The rubric is the worthy instrument to use during the writing process, both for instructional and referral purposes, which enables students to be active in the feedback processes. Polston (2013) supports that the results connecting to the product creativity rubric has the positive impact on students' perceptions of receiving feedback from peers as shown through the observations.

Meletiadou (2012) postulates that peer feedback is a rather controlled type of rubric in the form of a checklist that provides marks and feedback. The rubric is designed to apply for the easy and simple both peers and students give comments and basic guidelines for marking the critical and effective writing with a 4-point rating scale. Peer's markings upon some writing samples are highlighted as well. Qu and Yang (2010) reflect that feedback is substantially based on student-centered approach. This motivates students in gaining a better writing, gives multiple directions in the classroom activities, and raises students' cognitive awareness. Meanwhile, Spence (2010) offers the applicably formatted rubric into a 6-point rating scale method of negatively worded descriptors for the low scores (1 to 3), and mostly positively worded descriptors for the high scores (4 to 6). The rubric illustrates division between negative and positive wording, in terms of no clear sense of a beginning or ending, the beginning and ending are missing and poorly developed, or both can be too short and long, the writing has an inviting beginning and a satisfying ending. Matsuno (2009) claims the analytic scaling grid shall be supported to be generally more reliable and informative. Each category is divided into a couple of feedback criteria that is weighted proportionally with a 6-point rating scale. Hence, the more categories are included on a rating scale, the more possibly specific judgments are increased. O'Neill, Moore, and Huot (2009) addressed the analytic scoring rubric for general business writing feedback that is also weighted with a 6-point rating scale, so-called by the feedback characteristics. The components consist of evidence and analysis, focus, complexity, coherence, and audience awareness.

Some studies portrayed the empirical feedback practices. Baksh, Sallehuddin, Tayeb, & Norhaslinda (2016) argued that different students' language medium and academic

achievement might have impacted their learning ways and assessment perceptions, as the intended wash-back was still at the beginning level due to many doubts and the influential testing-precedence inevitably became one of them. Accordingly, teaching method integrated assessment supports to the pre-service teachers by offering multiple-levels of their academic's low to high backgrounds that accommodated their learning needs (Jansrisukot, 2016). Mubarak (2017) revealed his findings of writing feedback contribution that involved 32 freshmen in the second semester at an Islamic University in Jepara, Indonesia. The mean of writing before the revision was 6.6 but after the revision, their mean increased 7.9. Empirically, the analytic scoring analyzed and corrected mistakes and weaknesses of writing samples, such as forming words, phrases, sentences, grammar, subject and verb agreement, plural form, developing the main idea and supporting sentences, and anticipating ideas overlapping.

Moreover, Gulley (2012) believed that written feedback was the oversight method for some writing teachers to react their students' writing so far, despite it was still mechanically handled as the control measure and students' developmental writing structurally did revisions to their drafts after receiving some feedback. The feedback's content might role as the substantial factor in determining whether students think that peer feedback was fair enough after they afforded with its processes and concerned about the grades fairness earned from peers that indicated positive and useful feedback (Kaufman & Schunn, 2011). Sumekto (2014b) pointed out student's expectations on peer feedback. Apart from his study, he reported 66 per cent or 118 out of 179 students put peer feedback on the writing process as a very important component, if a collaboration among students was initiated (Sumekto, Saleh, Retmono, & Sofwan, 2015). Students were helped by involving themselves in the collaborative writing works ($M = 54.09$; $SD = 5.642$). Sumekto (2017) continued that the pre-service English teachers' collaborative genre-based writing and its collective feedback improved significantly ($p < .01$) after they attended series of genre-based writing classes. The paired t-test showed the recount paragraph ($M = 2.744$; $SD = 1.347$), narrative paragraph ($M = 2.767$; $SD = 1.771$), and descriptive paragraph

($M = 3.488$; $SD = 1.594$) also increased. The correlation coefficients (P) showed $r = .30$ and $p < .05$ after the experimental groups joined in three different lesson plans relating to the genre-based writing.

This present study proposes two research questions in the following: (1) Does the use of rubric enhance the valid judgment through the validity and reliability scoring system? (2) Does the use of rubric promote sophomores' learning and improve lecturer's instruction? Although the use of rubric is to gain a particular interest, the utility may be limited by the scoring rubric quality addressed to rate sophomores' performance and may seem plausible. Hence, this study objective aims to perform students' descriptive writing in relevance with the research design accordingly on the analytic scoring assessment functions.

METHOD

This study was carried out at undergraduate sophomores of English Education Department, Sarjanawiyata Tamansiswa University in Yogyakarta. There were 45 of 80 sophomore students randomly selected to be the respondents in this study. The study was carried out during the running odd semester of a 20-week. The researchers firstly observed the lecturer's writing class for two days a week. During his 20 weeks of the writing schedule, a particular lesson plan on descriptive writing was provided 4 times for class A and B. The sophomore students produced two essays in the intermediate level. They had first, second, and final draft for each essay that had been revised by their lecturer. All written feedback on each draft was provided during the class session. The last week of meeting up with all students, the lecturer announced them to submit their final draft. Upon the lecturer's permission, these final drafts were used to reconcile the data collection.

Written assessment on the first draft involved grammar and punctuation components. The lecturer used an error checklist to focus on grammatical accuracy and word choices. The lecturer identified the error location by underlining the errors and writing errors' specific symbol as done in the first draft. Next, he checked marks for the errors that had been produced by the students as the second draft. In the final draft, the lecturer wrote written commentaries in the form of text-specific statements and or

questions as well as a brief summary of grammar, punctuation, cohesion, coherence, and content component. These modified commentaries were based on the analytic rubric by Kaven's (2013) development of a valid and reliable general analytic rubric for a college-level course. The analytic scoring rubric involved a five-point scale for each of the five writing components, namely: grammar, punctuation, coherence, cohesion, and content. The rubric was modified through a comprehensive content-validation process to align the descriptors in each component.

The assessment procedures were undertaken as follows: the first draft was set as an in-class assignment and possibly continued as students' home-work. After the students produced the first essay, the lecturer provided the written feedback. The second draft related to the second essay, after the first draft was entirely given a feedback. Sophomores made revisions outside the writing session. The final draft was provided by the lecturer through the oral and written feedback in the classroom. After all, the final essays were rated through the analytic scoring rubric.

The data were collected from the writing test to measure sophomores' descriptive essay performance. 45 sophomores of class A and B were assigned to write a guided descriptive essay as documented in lecturer's teaching syllabus. Prior to handling the descriptive essay, other 27 sophomores of class C and D were required to write the descriptive essay for obtaining the Cronbach's alpha coefficients. The results showed that sophomores' grammar was .261, punctuation was .384, coherence was .321, cohesion was .469, and content was .277. According to Pallant (2007), these results provided an optimal range for the inter-item correlation of .2 to .4. The scale mean ranged in between 16.74 to 17.27. The scale mean confirmed the measured difference as if it contributed the descriptive essay components.

Data Analysis used sophomores' descriptive essays that were quantitatively examined through the descriptive and factor analyses. All descriptive essays were read twice and coded, whilst notes-taking were directly provided on the transcriptions relating to organizing themes. The rating was based on the total number of errors and inappropriateness produced. The revision types the sophomores produced were on the basis of lecturer's written feedback.

FINDINGS AND DISCUSSION

Findings

First of all, the data analysis of the grammar component described the descriptive and frequencies statistics results through Table 1 and Figure 1, as follows: 5 or 11.1% sophomores performed their grammar skill with a poor rank, 35 or 77.8% sophomores indicated that their grammar skill were in a fair level, and another 5 or 11.1% showed their grammar skill with a good level. Meanwhile, there was no sophomore achieving both fail and excellent results in the grammar skill to perform their descriptive essay. The finding also recorded that the lowest score of grammar component gained 2.00 and the highest score was 4.00 through the analytic scoring assessment. Meanwhile, the mean was 3.00 and the standard deviation was .477 ($n = 45$). The overall achievement of grammar component was on **fair** category with 77.8%.

Table 1. Sophomores' Grammar Component Achievement

	Fre- quency	Percent	Valid Percent	Cumulative Percent
Valid	2.00	5	11.1	11.1
	3.00	35	77.8	88.9
	4.00	5	11.1	100.0
Total	45	100.0	100.0	

As summarized in Table 1, the score distribution on grammar component was shown graphically using the histogram (Figure 1).

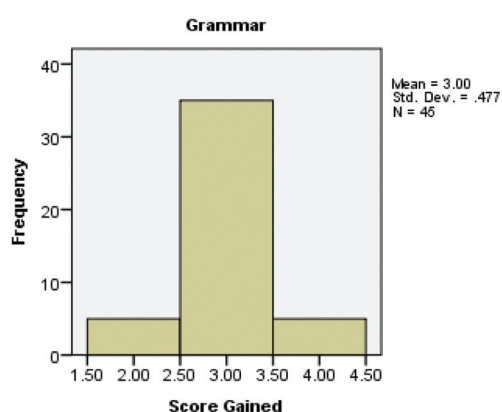


Figure 1. Sophomores' Score Gained in Grammar Component

Second, the data analysis of the punctuation component verified the descriptive and frequencies statistics results through Table 2 and Figure 2, as follows: 3 or 7% sophomores

performed their punctuation skill with a fair level, 34 or 75.6% indicated their punctuation was in a good level, and 4 or 8.9% sophomores indicated their punctuation skill with an excellent level. Meanwhile, there was no sophomore earning either fail or poor level in the punctuation skill. The finding also documented that the lowest score of the punctuation component earned 3.00 and the highest score was 5.00 through the analytic scoring assessment. Meanwhile, the mean was 3.93 and the standard deviation was .495 ($n = 45$). The overall achievement of the punctuation component was on **good** category with 75.6%.

Table 2. Sophomores' Punctuation Component Achievement

	Fre- quency	Percent	Valid Percent	Cumulative Percent
Valid	3.00	7	15.6	15.6
	4.00	34	75.6	91.1
	5.00	4	8.9	100.0
Total	45	100.0	100.0	

As documented in Table 2, the score distribution on the punctuation component was portrayed graphically using the histogram (Figure 2).

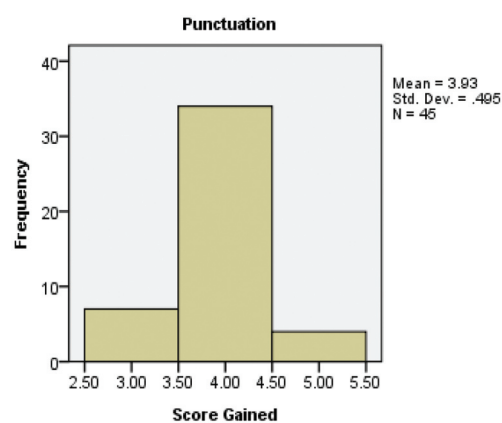


Figure 2. Sophomores' Score Gained in Punctuation Component

Third, the data analysis of the coherence component verified the descriptive and frequencies statistics results through Table 3 and Figure 3, as follows: 19 or 42.2% sophomores performed their coherence skills were in a fair level, 25 or 55.6% sophomores indicated their coherence skills were in good level, and only 1 or 2.2% sophomore's coherence skills indicated an excellent level. Meanwhile, there was no

sophomore performing either fail or poor level in coherence skills. The finding also noted that the lowest score of coherence component earned 3.00 and the highest score was 5.00 through the analytic scoring assessment. Meanwhile, whilst the mean was 3.60 and the standard deviation was .539 ($n = 45$). The overall achievement of the coherence component was on **good** category with 55.6%.

Table 3. Sophomores' Coherence Component Achievement

	Fre- quency	Percent	Valid Percent	Cumulative Percent
Valid	3.00	19	42.2	42.2
	4.00	25	55.6	97.8
	5.00	1	2.2	100.0
Total	45	100.0	100.0	

As documented in Table 3, the score distribution on the coherence component was gained graphically using the histogram (Figure 3).

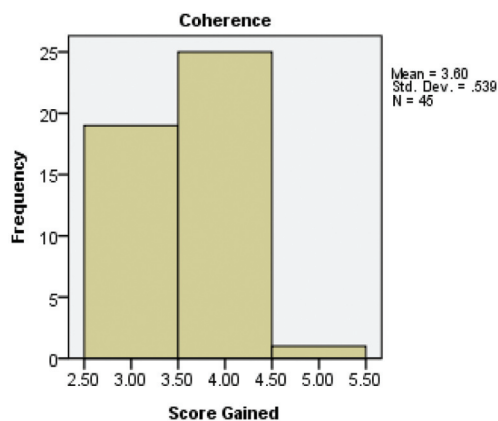


Figure 3. Sophomores' Score Gained in Coherence Component

Fourth, data analysis of the cohesion component determined the descriptive and frequencies statistics results through Table 4 and Figure 4, as follows: 2 or 4.4% sophomores performed their cohesion skills with a poor level, 31 or 68.9% sophomores indicated their cohesion skills were in a fair level, and 12 or 26.7% sophomores showed their cohesion skills with a good level. Meanwhile, there was no sophomore indicating their performance either fail or excellent level in the cohesion skills. The finding also noted that the lowest score of cohesion component gained 2.00 and the highest

score was 4.00 through the analytic scoring assessment. Meanwhile, the mean was 3.22 and the standard deviation was .517 ($n = 45$). The overall achievement of the cohesion component showed **fair** category with 68.9%.

Table 4. Sophomores' Cohesion Component Achievement

	Fre- quency	Percent	Valid Percent	Cumulative Percent
Valid	2.00	2	4.4	4.4
	3.00	31	68.9	73.3
	4.00	12	26.7	100.0
Total	45	100.0	100.0	

As summarized in Table 4, the score distribution on the cohesion component was displayed graphically using the histogram (Figure 4).

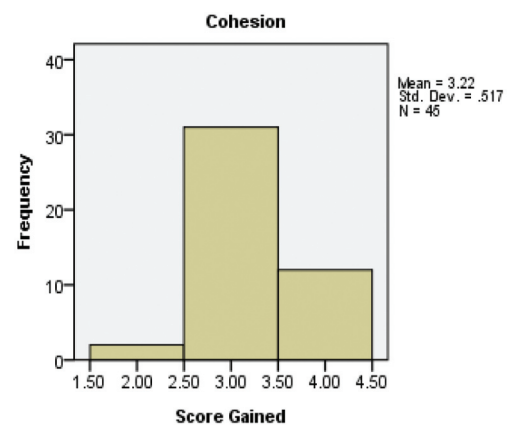


Figure 4. Sophomores' Score Gained in Cohesion Component

Fifth, the data analysis of the content component determined the descriptive and frequencies statistics results through Table 5 and Figure 5, as follows: 5 or 11.1% sophomores performed their content skills were in a poor level, 19 or 42.2% sophomores verified their content skills were in a fair level, 14 or 31.1% sophomores proved their content skills were in good level, and 7 or 15.6% sophomores showed their content skills were excellent. Meanwhile, there was no sophomore indicating that their contents skills were poor. The finding also recorded that the lowest score of the content component was 2.00 and the highest score was 5.00 through the analytic scoring assessment. However, the mean was 3.51 and the standard deviation was .895 ($n = 45$). The overall

achievement of the content component was on **fair** category with 42.2%.

Table 5. Sophomores' Content Component Achievement

	Fre- quency	Percent	Valid Percent	Cumulative Percent
	2.00	5	11.1	11.1
	3.00	19	42.2	53.3
Valid	4.00	14	31.1	84.4
	5.00	7	15.6	100.00
Total	45	100.0	100.0	

As confirmed by Table 5, the score distribution on the content component was documented graphically using the histogram (Figure 5).

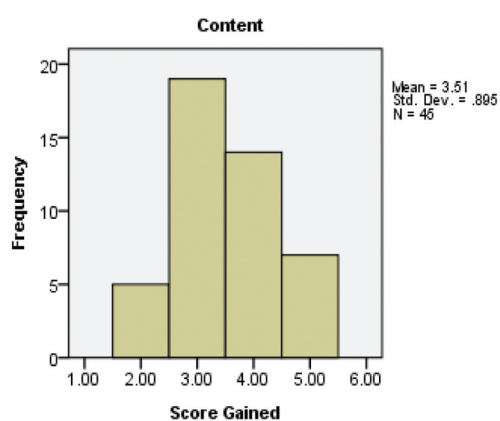


Figure 5. Sophomores' Score Gained in Content Component

The descriptive essay skills addressed to the contributing components of grammar, punctuation, coherence, cohesion, and content. 45 undergraduate sophomores of English Education Department participated in writing class. The results of sophomores' descriptive essay as shown in Table 6 were resulted in the following components: grammar ($M = 3.00$; $SD = .476$), punctuation ($M = 3.93$; $SD = .495$),

coherence ($M = 3.60$; $SD = .539$), cohesion ($M = 3.22$; $SD = .517$), and content ($M = 3.51$; $SD = .894$). The analytic scoring assessment was set in a 5-point-Likert scale to figure out sophomores' descriptive essay performance. Further, the statistics for grammar's skewness (.000) and kurtosis (1.827), punctuation's skewness (-.162) and kurtosis (1.320), coherence's skewness (.036) and kurtosis (-1.079), cohesion's skewness (.284) and kurtosis (.031), and content's skewness (.164) and kurtosis (-.676) were inconsiderable for 45 students' descriptive essays. From the results of the skewness and kurtosis in the descriptive essay components, the data were normally distributed. The lowest mean gained in the essay component was grammar and the highest mean was punctuation.

Next analysis discussed on the chi-square test for goodness of fit as shown in Table 7. This analysis identified five components on the descriptive essay, in which the results corresponded with sophomores' descriptive essay performance in the different categories. The overall difference among these chi-square's descriptive essay components were statistically significant, where $\chi^2 = 40.000$ (2, $n = 45$), $p < .000$ for the grammar, $\chi^2 = 36.400$ (2, $n = 45$), $p < .000$ for the punctuation, $\chi^2 = 20.800$ (2, $n = 45$), $p < .000$ for the coherence, $\chi^2 = 28.933$ (2, $n = 45$), $p < .000$ for the cohesion, and $\chi^2 = 11.089$ (3, $n = 45$), $p < .011$ for the content. Therefore, a chi-square test for goodness of fit showed that there was no significant difference in the majority proportion of sophomores' descriptive essay shown in the sample size ($n = 45$).

- 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 15.0.
- 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 11.3.

Table 6. Overall Sophomores' Descriptive Essay Achievements

Descriptive Essay Components	N	Min.	Max.	Mean	Std. Dev.	Skewness	Kurtosis		
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Grammar	45	2.00	4.00	3.0000	.47673	.000	.354	1.827	.695
Punctuation	45	3.00	5.00	3.9333	.49543	-.162	.354	1.320	.695
Coherence	45	3.00	5.00	3.6000	.53936	.036	.354	-1.079	.695
Cohesion	45	2.00	4.00	3.2222	.51737	.284	.354	.031	.695
Content	45	2.00	5.00	3.5111	.89499	.164	.354	-.676	.695
Valid N (listwise)	45								

Table 7 Chi-Square Test for Goodness of Fit Results

	Grammar	Punctuation	Coherence	Cohesion	Content
Chi-Square	40.000 ^a	36.400 ^a	20.800 ^a	28.933 ^a	11.089 ^b
df	2	2	2	2	3
Asymp. Sig.	.000	.000	.000	.000	.011

Table 8. Descriptive Statistics of Sophomores' Descriptive Essay Performance

Component	Initial Eigenvalues		Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings ^a	
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
Grammar	1.550	31.007	31.007	1.550	31.007	31.007	1.481
Punctuation	1.366	27.322	58.328	1.366	27.322	58.328	1.433
Coherence	.984	19.675	78.004	N/A	N/A	N/A	N/A
Cohesion	.632	12.639	90.642	N/A	N/A	N/A	N/A
Content	.468	9.358	100.000	N/A	N/A	N/A	N/A

Extraction Method: Principal Component Analysis.

a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.

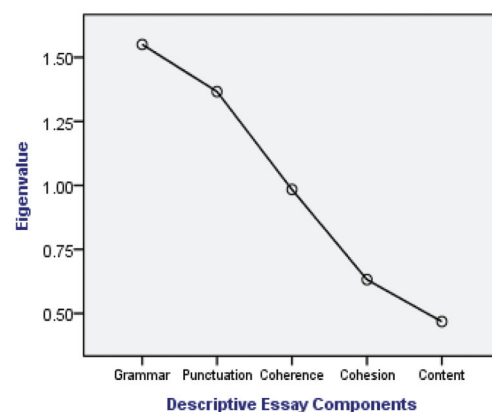
Table 9. Pattern and Structure Matrix for PCA with the Oblimin Rotation of Two-Factor of Descriptive Essay Scales

Descriptive Essay Components	Pattern coefficients		Structure coefficients		Communalities
	Component 1	Component 2	Component 1	Component 2	
5. Content	.753	N/A	.474	.613	.606
1. Grammar	.677	-.408	.785	N/A	.624
3. Coherence	.538	.684	N/A	.870	.757
2. Punctuation	.475	-.624	.758	N/A	.615
4. Cohesion	N/A	.551	N/A	.500	.314

Note: major loadings for each item were in boldface

Further, five components of descriptive essay also referred to the principal components analysis (PCA) results. Prior to proving these components, the suitability of the factor analysis data was assessed. The inspection of the correlation matrix showed the presence of available coefficients of .107 and above. Then, the Kaiser Meyer-Olkin (KMO) value was .612, passing the recommended value of .6 and Bartlett's test of Sphericity was $p = .000$ (Pallant, 2011). This addressed the statistical significance and strengthened the factorability of the correlation matrix. The PCA results derived the presence of five components with the eigenvalue outreaching 1, establishing 31%, 27.3%, 19.7%, 12.6%, and 9.4% of the variances accordingly, as shown in Table 8. The scrutiny of the scree plot revealed a definite part after fulfilling five components. The scree plot was determined to withhold two axes for the further study (Figure 6) and supported by the parallel analysis results. This scree plot showed two axes with the eigenvalue outreaching towards the supporting criterion values for a randomly carried out of the

available size of matrix data (5 components x 45 sophomores).

**Figure 6. Scree Plot of Sophomores' Descriptive Essay Performance**

Moreover, another part of the factorial analysis referred to two extracted components with a total of 58.32% of the variance. The component 1 was 31.00%, whilst the component 2 was 27.32%. To gain the interpretation of these components, the oblimin rotation was

confirmed as shown in Table 9. The rotated solution performed the presence of simple structure with both components that resulted a number of squared loadings and five writing components that loaded substantially on the component 1 only. The interpretation of these components was coherent with the pilot results on the descriptive essay performance scale, in which the component 1 showed the positive affect items and the component 2, on the other hand, partially indicated the negative affect items. However, there was a negative correlation between the two factors ($r = -.03$). This analysis supported the use of either positive or negative affect items as the separated scales.

Discussion

This study attempts to assess whether the analytic scoring system of the descriptive essay may be applied for an effective instruction method towards sophomores' English education department. As part of the descriptive essay, a comprehensive understanding of this essay is empirically based on sophomores' analytic scoring components, such as grammar, punctuation, coherence, cohesion, and content. Conveyed in sophomores' descriptive essay, a well-formatted writing product commonly begins with the title displayed at the beginning of the writing part. By following the criteria, the title shall be centered and commonly the first letter shall be written or printed in capital letter. When starting to write a new paragraph, the first sentence shall be intended. A writer at least writes three till five sentences before moving to another second paragraph usually with the double-spaces. In accordance with the factual facts, sophomores' descriptive essay still have some requirements to fix. They neglect to write down a simple and concise title, as well as keep writing the paragraphs without intended format. These facts can describe some students' academic background, in which they do not have an appropriate experience with writing aspects before. But, some of them have produced with the correct requirements.

Next component emphasized on grammar, which demonstrates an understanding of the relationship between punctuation and sentence structure (Martinez, 1997). It shall be effective complex construction, indicated few errors of agreement, tense, number, word order or function,

articles, pronouns, prepositions (Pappamihel, Nishimata, & Mihai (2008; Kargozari, Ghaemi, & Heravi, 2012). Referring to the grammar competence analyzed from sophomores' average score, the result ranks on the below level. The mean score is 3.00 or on a fair level. The mistakes can vary in the use of most detailed aspects as highlighted by Pappamihel, Nishimata, & Mihai, 2008; Kargozari, Ghaemi, & Heravi, 2012). Meanwhile, the sentence structure mistakes found in sophomores' descriptive essay correlate with the simple, compound, and complex sentence. Some mistakes also contribute in the sentence pattern arrangement, subject and predicate agreement, and either single or paired conjunction which lead to some sentence problems and complexities to understand.

Second component of the descriptive essay relates to sophomores' punctuation skills. Pappamihel, Nishimata, and Mihai (2008; Kargozari, Ghaemi, & Heravi, 2012) point out that the conventions mastery eliminate few errors of spelling written in sentences and/ or paragraphs. Sophomores may write with the right capitalization, and began and understand about paragraphing. Regarding the punctuation skill that have been performed by the sophomores, the score ranks on the first level with the mean of 3.93. In the case of sophomores' punctuation skills, there are some mistakes on misspelling words produced in their paragraphs. In an opportunity given to completing the essay, only a few sophomores use technology devices to help them revise the punctuation errors, such as spelling, space, and capitalization.

The third component compromises with the coherence and cohesion. When the researchers conduct the classroom observations, these both components are applied for the feedback purposes separately. The researchers hereby consider that the components shall be used together, as this refers to Meletiadou's recommendation (2012), in which either coherence or cohesion unifies the paragraphs and the sophomores gain the coherence component by using simple linking devices to connect one sentence into another one in a paragraph. According to Martinez (1997) both coherence and cohesion shall present information in a well-organized thought, provide fluent and comprehensive expression, ideas clearly, use the logical sequencing. Meanwhile, Pappamihel, Nishimata, and Mihai (2008)

underline the sequence of meanings so that words may stick together and serve the overall meaning of descriptive essay. In accordance with the coherence and cohesion skill, the result ranks on the second level of coherence with the mean score of 3.60, whilst the cohesion earns the fourth level with the mean score of 3.22.

Some common mistakes are found among sophomores' introductory statement, in which the paragraphs do not sharpen the thesis statement of their descriptive essays, besides being compulsory necessary to comprehend a clear topic sentence and unnecessary dealing with more than one idea that does not correspond with the topic sentence. In further, the coherence and cohesion are inappropriately used in sentences to reflect the supporting ideas which address facts and details. The supporting ideas do not harmonize the controlling ideas. In fact, some ideas unnecessary jump out of one sentence to another one, sophomores also need to emphasize the function of the transitional signals that is solely used to connect the sentences. That is why mostly their descriptive essays are not smoothly cohesive and coherent.

The fourth component is linked to sophomores' descriptive essay content. Martinez (1997) includes the appropriate details to support ideas or conclusions in an essay that provide the main ideas clearly and be well-supported to the topic, so that the text is easy to read (Meletiadou, 2012). According to Pappamihel, Nishimata, and Mihai (2008; Kargozari, Ghaemi, and Heravi, 2012) the content shall be knowledgeable, substantive, thoroughly development of materials or thesis, and relevant to an assigned topic. Relating to sophomores' content skill, the achievement ranks on the third level with the mean score is 3.51. For the better achievements, the sophomores are advised to be aware of their sentences before continuing the next sentences through their comprehensive checks and revisions upon some potential mistakes or mismatches produced upon their descriptive essays.

Another discussion corresponds with the appropriately analytic scoring rubric that needs to be well-prepared and to accommodate all sophomores in using it without leaving for possibly small insufficiency. Before using the rubric, the lecturer has a responsibility to share the substantial points how to work with the rubric items. Commonly, the effective format

and purpose of its practice is determined as the appropriate rubric usage. Cyr, Smith, Broyles, & Holt (2014) verified that a rubric outlines a set of criteria and the standards link to specific learning objectives and may assign a numeric value to coincide with each criteria category, such as grammar, punctuation, coherence, cohesion, and content (Kaven, 2013), as well as separated and weighted the textual components with the a 5-point-Likert scale. Each component, according to Spence (2010) has its own scoring scale with the descriptive statements and sometimes extends to several descriptors, in which the current level of achievement, strengths, and weaknesses can be diagnosed (Amy and Victor, 2008). Thus, the use of the analytic scoring rubric allows for a standardized performance assessment to enhance consistency when subjective assignments and written feedback to sophomores' descriptive essays are possible (Polston, 2013).

However, the analytic scoring system is generally undertaken longer to score a writing sample using an analytic rubric since the lecturer needs to decide the multiple decisions for each writing sample and to read the sample more than one time. The use of an analytic scoring rubric may take attention from overall essay effects. Since the multiple score scales are frequently summated, hence some collected information from those scales will be potentially absurd. Another limitation relates to the distortion information when the lecturer rates the multiple scales he determines the single composite score. The lecturer also extends more time to rate holistically rather than analytically, so that the partial problems of validity and reliability may still occur in the scoring procedure.

CONCLUSION

The use of analytic scoring rubric enhances the reliability and validity results. Prior to assessing this present study, Cronbach's alpha coefficient has empirically indicated the results in terms of relevant components that concern with the descriptive writing assessment, namely: grammar, punctuation, coherence, cohesion, and content. A 5-point-Likert scale is used to validate Cronbach's alpha and to provide an indication of the average correlation among those five descriptive writing components that deal with the scale. However, the use of the analytic scoring assessment system promotes the writing

class instruction as part of teaching methodology accomplishing both the sophomores and the lecturer. The findings drive the lecturer continually facilitates the rubric to accommodate sophomores' descriptive essays, recognize the substantial qualities, and integrate the qualities into their own essays insights. Further, the lecturer possibly modifies the analytic rubric that moderately recommends the necessary qualities of descriptive essays or encompasses a wider component of rubrics qualities depending on the essay complexity, such as intermediate, pre-advanced, and advanced writing, as well students' writing competence and maturation. This conclusion entrusts that the analytic scoring rubric implicates the influential scoring system in day-to-day practices.

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THE EFFECT OF WORKLOAD, INDIVIDUAL CHARACTERISTICS, AND SCHOOL CLIMATE ON TEACHERS' EMOTIONAL EXHAUSTION IN ELEMENTARY SCHOOLS OF PAPUA

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Abstract: This study was aimed to investigate the potential effect of workload, individual characteristics, and school climate on teachers' emotional exhaustion in Christian elementary schools of Boven Digoel district, Papua. The problems guided the study, namely: (a) does workload effect significant positively on teachers' emotional exhaustion elementary schools?; (b) does individual characteristics effect significant positively on teachers' emotional exhaustion in elementary schools?; and (c) does school climate effect significant positively on teachers' emotional exhaustion in elementary schools?. Four quantitative questionnaires using Likert's scale were administered to 94 teachers who have been decided as respondents. Data were analyzed quantitatively using simple linear regression analysis technique by employing *SPSS* version 21 for windows. Results of the study revealed that workload, individual characteristics, and school climate partially effect significant positively on teachers' emotional exhaustion in elementary schools. These findings might be worthwhile for the school supervisors as well as The Head of Education Office in regional government level to eliminate teachers emotional exhaustion by creating different programs to improve workload system and to improve school climate on one hand and, on the other hand, to foster teachers' character of hard-working.

Keywords: *workload, individual characteristics, school climate, emotional exhaustion, teachers*

PENGARUH BEBAN KERJA, KARAKTERISTIK INDIVIDU, DAN IKLIM SEKOLAH TERHADAP KELELAHAN EMOSIONAL GURU SD DI PAPUA

Abstrak: Tujuan penelitian ini adalah untuk menginvestigasi pengaruh beban kerja, karakteristik individu, dan iklim sekolah terhadap kelelahan emosional guru SD Kristen di Kabupaten Boven Digoel, Papua. Masalah yang menuntun penelitian ini adalah: (a) apakah beban kerja guru berpengaruh secara positif dan signifikan terhadap kelelahan emosional guru SD?; (b) apakah karakteristik individu berpengaruh secara positif dan signifikan terhadap kelelahan emosional guru SD?; dan (c) apakah iklim sekolah berpengaruh secara positif dan signifikan terhadap kelelahan emosional guru SD? Empat angket kuantitatif yang menggunakan Skala Likert disebarikan kepada 94 guru yang menjadi responden. Data dianalisis secara kuantitatif menggunakan *SPSS* versi 21. Hasil analisis data menunjukkan bahwa beban kerja, karakteristik individu, dan iklim sekolah secara parsial berpengaruh secara positif dan signifikan terhadap kelelahan emosional guru SD. Hasil penelitian ini dapat menjadi pertimbangan bagi penyelia sekolah dan Kepala Dinas Pendidikan pada level pemerintah Kabupaten Boven Digoel dalam mengupayakan berbagai program yang berbeda untuk memperbaiki sistem pembebanan kerja dan iklim sekolah serta mendorong karakter guru yang suka bekerja keras dan pantang menyerah.

Kata Kunci: *beban kerja, karakteristik individu, iklim sekolah, kelelahan emosional, guru*

INTRODUCTION

Teaching is a noble profession and, at the same time, is challenging an extraordinary dedication and fighting spirit of all involved, especially those who are working in the remote area of Papua. Poor working conditions facing the elementary school teachers of southern Papua

as it was reported by Werang et al. (2017) affects greatly on teachers' behavior to school principals, peers, students, and the completion of a given task. Prior to Werang et al.'s (2007) research findings, studies conducted by Hsieh and Guy (2009), Guy et al. (2008), and Grandey, (2000) have also reported that teachers' emotional

exhaustion has not just affected on teachers' behavior to the such, but also affected greatly on the teachers' physical and psychological health.

Teachers' emotional health has become one of the utmost determined factors for school effectiveness. The important role of teachers' emotional health has motivated researchers (e.g. Ashforth & Humphrey, 1993; Becker et al., 2014; Cubukcu, 2012; Hoge Kamp et al., 2016; Muchinsky, 2000) to highlight the need of studies focusing on the effort of investigating employees' emotions in organizations.

Demerouti et al. (2010: 210) defined emotional exhaustion as a consequence of intensive physical, affective and cognitive strain, that is, as a long term consequence of prolonged exposure to certain job demands. Meanwhile AnbarandEker(2007: 15) opined that emotional exhaustion refers to the depletion of psychic energy or the draining of emotional resources. Whereas Maslach et al.'s(1996) findings revealed that feeling of being overextended and depleted are of leading symptoms of emotional exhaustion.

Emotional exhaustion is one of three aspects of job burnout, namely emotional exhaustion, depersonalization, and reduced personal accomplishments (Maslach & Goldberg, 1998; Schaufeli et al., 2009). Relating to emotional exhaustion, Maslach and Goldberg (1998:64) wrote as follows:

Emotional exhaustion refers to feelings of being emotionally overextended and depleted of one's emotional resources. The major sources of this exhaustion are work overload and personal conflict at work. People feel drained and used up, without any source of replenishment. They lack enough energy to face another day or another person in need. The emotional-exhaustion component represents the basic stress dimension of burnout.

Lloyd and King (2004) asserted that emotional exhaustion occurs with physical fatigue and its symptoms such as deficiency of energy, trouble sleeping, sense of dread, irrational anger, irritability, feeling of hopelessness, depression, apathy, lack of motivation, absentmindedness, problems in family, and increase in drinking.

Emotional exhaustion here refers to teachers' emotional exhaustion. Thomason (2011) suggested that the work of teaching requires teachers to always balance their daily

emotional exhaustion. Teachers' emotional exhaustion affects negatively on the life of education institutions, such as deterioration of education quality services, high level of teacher absenteeism, and low level of teacher morale (Brotheridge & Lee, 2002; Grandey, 2003). Khan et al.' (2014) study found that teachers with emotional exhaustion tend to leave their personal or professional position.

A vary of studies have been conducted on emotional exhaustion (e.g. Burke & Greenglass, 1995; Brotheridge & Lee, 2002; Cameron, et al., 1994; Grandey, 2003; Lee & Ashforth, 1993; Lee & Ashforth, 1996). Since these previous studies were focused on the impact of emotional exhaustion such as physical and psychological health problems of employees (Burke & Greenglass, 1995; Lee & Ashforth, 1993) and quality decline of employees' performance (Cameron, et al., 1994; Lee & Ashforth, 1996; Brotheridge & Lee, 2002; Grandey, 2003), this study focuses on the effort of investigating the effect of teachers' workload, teachers' individual characteristics, and school climate on teachers' emotional exhaustion. I do believe, an adequate understanding on the effect of these factors is of important to design efforts of eliminating teachers' emotional exhaustion in Christian elementary schools of Boven Digoel district, Papua.

First, teachers' workload. Workload is a multidimensional and complex construct (Weinger et al., 2004) and, therefore, it is impossible to give a simple definition. According to Merriam Webster Dictionary (n/d.), workload is the amount of work or of working time expected or assigned. While Ippolito et al. (2010) viewed workload as over-workload resulted from work requirements exceeding human boundary which is individual has to practice a lot amount of works and complete it in a certain period, or lengthy working time causing the body or spirit not being able to bear the load. Similarly, Zhelthoukhova et al. (2012) viewed workload as the workload in the working environment exceeding personal capabilities which resulting in threats and the reactions of nervousness, anxiety, frustration, pressing, and annoyance. These reactions would change the physical and mental conditions of a person as well as the behavior (Zhelthoukhova et al., 2012). Allard et al. (2011) regarded workload as psychological and physiological costs spent

by an employee in practicing a job to fulfill the requirements of a particular job.

The term workload here refers directly to teachers' workload. Teachers' workload is not just related to the teachers' work of teaching but all the given tasks that teachers have to be responsible for. Gates (2007: 12) described teachers' work overload as follows,

Teachers are asked to assume many often contradictory roles including providing academic instruction, maintaining order and discipline in the classroom, attending to social and emotional needs of students, and meeting the often conflicting expectations of students, parents, administrators, and the community.

Teaching has long been characterized throughout time by role conflict, ambiguity, and overload (Lieberman & Miller, 1984). To measure teachers' workload in Christian elementary schools of Boven Digoel district I employed *The Subjective Workload Assessment Technique (SWAT)* developed by United State Air Force (Virtanen et al., 2012). SWAT is a multidimensional scaling method designed to assess time load, mental effort load, and stress load (Reid et al. 1989). *Time load* occurs when an employee perceived large stress from the work frequency. In the context of *time load*, employees are required to complete jobs at a time limit established by employer and they feel not be able to do it. While *mental effort load* assesses how much conscious mental effort and planning are required to perform a certain task, whereas *psychological stress load* measures the amount of risks, confusion, frustration, anxiety related to task performance (Gawron, 2000). Factors such as fatigue, motivation, and psychological pressure would greatly affect to psychological stress load. Similarly Wuet al. (2012) classified the source of workload into *time load*, *spirit investment*, and *mental stress*. In *time load* the work frequency is madly urgent, while in *spirit investments* one has to work hard mentally and physically to invest in physical activities for achieving the preset performance. Whereas *mental stress* referring to mental or perceptual activities invested in a certain work, such as thinking, making decision, calculation, and search.

Teachers' workload is associated with emotional exhaustion. Excessive workload may greatly harm health and result in negative emotion of teachers. Maslach and Goldberg (1998)

found that almost half of employees have high level of emotional exhaustion due to the stress affected by heavy workloads, low supportive relations, personal engagement, less quantity of staff members, professional development, and understanding burnout. Through an extensive literature study on burnout, Schaufeli and Enzmann (1998) concluded that emotional exhaustion was particularly affected by workload, time pressure, lack of social support, and role stress. Besides, Xiaoming et al.'s (2014) research finding revealed a significant positive effect of workload on emotional exhaustion of medical staff.

Teachers with high workload having too little time to complete all the work of teaching, having non-teaching duties, and having inadequate rewards for teaching (Manthei et al., 1996; Maslach & Leiter, 1997). Teachers in Christian elementary schools of Boven Digoel district "often work in isolation from other teachers, receiving little performance feedback or support from colleagues and administrators, and have few opportunities for quality professional development" (Wood & McCarthy as cited in Gates, 2007: 13).

Second, teachers' individual characteristics. Individual characteristics is generally considered as to be exceptional that may establish the uniqueness of a person or a thing which support the conclusion that a person or thing in question can be linked to a known person or a known thing (Irwin Law, n/d). In this point of view, individual characteristics can be identified as having originated with a certain person or a certain thing.

Wigfield (2005) defined individual characteristics as self-confidence and personal characteristics that exist in themselves. Referring to the fact that each member of organization has its own perspectives, capabilities, preferences, and goals which are different from others; James (as cited in Syarif, 2015) viewed individual characteristics as interests, attitudes, and needs an employee brings to his or her place of work. Whereas Hurriyati (2005) defined individual characteristics as a psychological process influencing one's behavior in achieving, consuming and receiving goods, services, and experiences.

In line with the above definitions, individual characteristics can be simply defined

as internal factors influencing employee's behavior in seeing and assessing others and work in a particular organization in which he or she works. For instance, employees who have positive thinking on all organizational tasks tend to seriously complete their work. They are able to take benefits from new challenging tasks as the opportunity to move forward. Conversely, employees who have negative thinking on all organizational tasks tend to work haphazardly and take no benefits from new challenging tasks. They tend to bring up a lot of complaints such as "work is not appropriate" or "work is too heavy" or "friends cannot work collaboratively", and so on.

Individual characteristics could be measured by using its components such as personal characteristics which include demographic characteristics (e.g. age, sex, marital status, and working period), capability, personality, and education (Robins, 2007). Ivancevic et al. (1997) classified components of individual characteristics into capability, personality, perception, and attitude. In the similar way, Subyantoro (2009) classified components of individual characteristics into capability, values, attitude, and interest.

Individual characteristics is of important for the whole life of organization due to that the development of an organization depends greatly on its employees' way of completing all the given tasks. Maslach et al. (2001) argued that situational factors (such as work characteristics, work types, organizational characteristics) and individual characteristics (such as demographic characteristics, personal characteristics, and attitude to a particular job) are two factors which would greatly affect one's emotional exhaustion.

Third, school climate. Schools, just like other organizations, are a series of interactions that may affect all the individuals in a school as well as affect the total environment and the climate of the school (Werang&Agung, 2017a). Mitchell et al. (2010) defined school climate as shared beliefs, values, and attitudes that shape interactions between students, teachers, and school principal. Frieberg and Stein (as cited in Werang, 2014a) viewed school climate as the heart and soul of the school that draws teachers and students to love and wish to be a part of the school. Whereas Hoy and Forsyth (1986) defined

school climate as individual perceptions related to his or her working environment. Despite of no single definition of school climate, scholars seem to agree that school climate is "the total sum of attitudes and behaviors elicited by the school's policies, practices, and physical environment; staff interaction with peers and students; opportunities for student engagement and leadership; beliefs and attitudes students bring to the school from their families and communities" (Community Matters as cited in Werang&Agung, 2017a: 59).

School climate deals with teachers' way of giving sense to their work environment (Werang & Lena, 2014). Hoyet al. (as cited in Werang, 2014a; Werang et al., 2016a) pointed out two dimensions of interpersonal interaction related to school organizational climate. Firstly, school principal's behaviors which consisted of four aspects as follows: (a) *aloofness*: refers to school principal's behaviors which are characterized by a formal and impersonal relationship; (b) *production emphasis*: refers to school principal's behaviors which are characterized by a very strict supervision that uses directions and stereotyped communication channels; (c) *trust*: refers to school principal's behaviors which are characterized by an effort of moving the organization forward, and (d) *consideration*: refers to school principal's behaviors which are characterized by a human relationship with his or her teachers. Secondly, teacher's behaviors which consisted of four aspects as follows: (a) *disengagement*: refers to teacher's tendency to be a nonchalant and view all the school tasks as a routine; (b) *hindrance*: refers to teacher's feeling that school principal just bother them with the routine tasks which they seeas unnecessary; (c) *esprit*: refers to fighting spirit resulted by a social-need satisfaction when teachers enjoy their success in completing school tasks, and (d) *intimacy*: refers to teacher's joy of being friend for others.

To measure elementary school climate, Halpin and Croft (as cited in Werang et al., 2016b) developed Organizational Climate Descriptive Questionnaire (OCDQ). The latest reference to measure school climate is Organizational Climate Index (OCI) which is recognized as the combination of a revised Organizational Climate Descriptive Questionnaire (OCDQ) and Organizational Health Inventory (OHI) [Hoy &

Sabo, 1998]. Organizational Climate Index (OCI) captured an open and healthy school climate for students, teachers, school principal, and school community (Hoy et al., 2002).

School climate has been known as one of the prevalent factors affecting teachers' emotional exhaustion. A vary of studies (e.g. Hoy & Woolfolk, 1993; Singh & Billingsley, 1998; Grayson & Alvarez, 2008) found that teachers' emotions, trust, relationships, achievements, and even self-confidence were greatly affected by the school climate.

METHOD

Research Design and Sample

This study employed a quantitative approach using a survey research design. A quantitative approach was used as it was conducted in a certain population or sample (Werang, 2015) and it sought to establish the effect of teachers' workload, individual characteristics, and school climate on teachers' emotional exhaustion in Christian elementary school teachers' of Boven Digoel district, Papua. A survey research design was used as it aimed to describe facts based on the existing phenomena (Mulyana, 2013). Besides, a survey research design was also used because of the following considerations: (a) high representativeness; (b) low cost; (c) convenient data gathering; (d) good statistical significance; (e) little researchers subjectivity; and (f) precise results [Werang, 2018; Werang & Agung, 2017b].

Four quantitative questionnaires using four Likert's scale were distributed to 94 teachers who are samples. Samples were drawn purposively due to that most of teachers were out at the time of data gathering. Based on the literature investigating the effect of teachers' workload, teachers' individual characteristics, and school climate on teachers' emotional exhaustion, conceptual model of this study is as presented in Figure 1 below.

Data were analyzed quantitatively using simple linear regression analysis technique by employing the *Statistical Package for Social Sciences (SPSS) version 21 for windows*. Null hypothesis (H_0) were follows: (a) teachers' workload effects significant negatively on their emotional exhaustion in Christian elementary schools of Boven Digoel district, Papua; (b) teachers' individual characteristics effect

significant negatively on their emotional exhaustion in Christian elementary schools of Boven Digoel district, Papua; and (c) school climate effects significant negatively on teachers' emotional exhaustion in Christian elementary schools of Boven Digoel district, Papua. Whereas research hypothesis (H_a) were follows: (a) teachers' workload effects significant positively on their emotional exhaustion in Christian elementary schools of Boven Digoel district, Papua; (b) teachers' individual characteristics effect significant positively on their emotional exhaustion in Christian elementary schools of Boven Digoel district, Papua, and (c) school climate effects significant positively on teachers' emotional exhaustion in Christian elementary schools of Boven Digoel district, Papua.

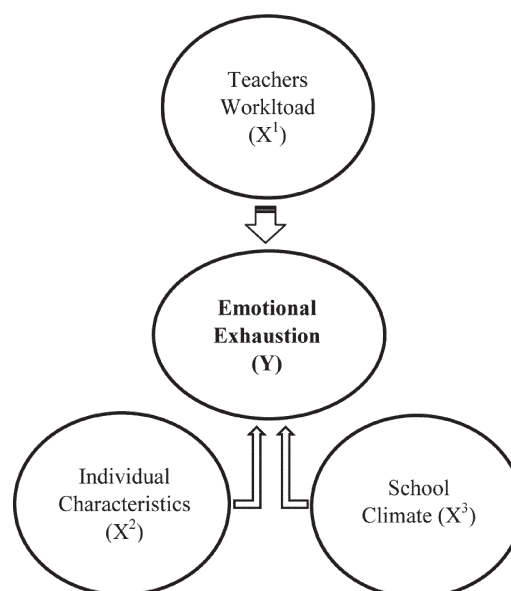


Figure 1. Conceptual Model of the Study

Measurement

Teachers' workload was measured by modifying *SWAT* into 8 positive statements which were distributed over three aspects of workload (time load, mental effort load, psychological stress load). The inventory used a 4 point Likert's scale (4=strongly agree and 1=strongly disagree). Respondent were asked to respond each statement on a scale of four alternative: strongly agree (SA), agree (A), disagree (D), and strongly disagree (SD). Sample of items included the following: "preparing learning devices is really draining energy", "I am regularly stress at work", "I regularly work over my students contact hours", "I have unrealistic time pressure

and deadline”, “I have to work intensely”, “Different people at work demands thing from me that are hard to combine”.

Teachers’ individual characteristics was measured by modifying Robins’ (2007) aspects of individual characteristics into 18 positive statements which were distributed over five aspects of individual characteristics (education and training, personality, capability, attitude to the work of teaching, and number of family members). The inventory used a 4 point Likert’s scale (4=strongly agree and 1=strongly disagree). Respondent were asked to respond each statement on a scale of four alternative: strongly agree (SA), agree (A), disagree (D), and strongly disagree (SD). Sample of items included the following: “I finish my study on time”, “I usually take time to attend training related to my work of teaching”, “My parents expect me much to help my siblings”, “I work hard to get extra income”, “Being a teacher is a call to serve future generations of the nation”.

School climate was measured by modifying OCDQ developed by Halpin and Croft (1963) into 29 positive statements which were distributed over eight aspects of school climate (alooffness, production emphasis, trust, consideration, disengagement, hindrance, esprit, and intimacy). The inventory used a 4 point Likert’s scale (4=strongly agree and 1=strongly disagree). Respondent were asked to respond each statement on a scale of four alternative: strongly agree (SA), agree (A), disagree (D), and strongly disagree (SD). Sample of items included the following: “Teachers seek special favors from the school principal”, “Teachers interrupt other faculty members who are talking in staff meeting”, “Teachers have too many committee requirements”, “Teachers know family background of other faculty members”, “The school principal goes out of his way to help teachers”, and “The school principal helps teachers solve personal problems”.

Teachers’ emotional exhaustion was measured using *Maslach Burnout Inventory* which consists of 7 positive statements. The inventory used a 4 point Likert’s scale (4=strongly agree and 1=strongly disagree). Respondent were asked to respond each statement on a scale of four alternative: strongly agree (SA), agree (A), disagree (D), and strongly disagree (SD). The samples of items included the following: “I

feel I get tired of my current job”, “I feel that I have lost my enthusiasm about my profession”, “I feel spiritually exhausted when arrive at home after work”, “I feel I get exhausted at work both emotionally and cognitively”, “My shifts at work make me exhausted”, “Working with people all day long constitutes a serious burden for me”, and “It makes me stressful to be in a direct communication with people”.

RESULTS AND DISCUSSION

Results

As aforementioned, research data was quantitatively analyzed using simple linear regression analysis technique by employing *Statistical Package for Social Sciences (SPSS) version 21 for window* to investigate the effect of teachers’ workload (X^1), teachers’ individual characteristics (X^2), and school climate (X^3) on teachers’ emotional exhaustion (Y) in Christian elementary schools of Boven Digoel district, Papua. Results of data analysis of the effect of teachers’ workload on their emotional exhaustion in Christian elementary schools of Boven Digoel district, Papua, is as presented in Tabel 1.

Table 1. The effect of workload (X^1) on emotional exhaustion (Y)

Effect of X^1 on Y		
N	:	94
R	:	.892
R ²	:	.795
t _{count}	:	18.909
t _{table}	.05 :	1.986

Effect of X^1 on Y

Data in table 1 revealed that at the level of α (Q) = .05 the value of $t_{\text{count}} = 18.909 > t_{\text{table}} = 1.986$. It means that research hypothesis (H_a) “teachers’ workload effects significant positively on their emotional exhaustion in Christian elementary schools of Boven Digoel district, Papua”, is **accepted**. In other words, at the level of α (α) = .05 null hypothesis (H_0) that teachers’ workload effects significant negatively on their emotional exhaustion in Christian elementary schools of Boven Digoel district, Papua, is rejected. Further, based on the result of simple linear regression analysis, the coefficient value of R^2 is .795. It means that 79.5% of teachers’ emotional exhaustion in Christian elementary schools of Boven Digoel district, Papua, is explained by teachers’ workload.

Meanwhile, results of data analysis of the effect of teachers' individual characteristics (X^2) on teachers' emotional exhaustion (Y) in Christian elementary schools of Boven Digoel district is as presented in Table 2.

Table 2. The effect of individual characteristics (X^2) on emotional exhaustion (Y)

Effect of X^2 on Y		
N	:	94
R	:	.923
R^2	:	.853
t_{count}	:	23.085
t_{table} .05	:	1.986

Data in table 2 revealed that at the level of $alpha$ (Q) = .05 the value of $t_{\text{count}} = 23.085 > t_{\text{table}} = 1.986$. It means that the research hypothesis (H_a) "teachers' individual characteristics effect significant positively on their emotional exhaustion in Christian elementary schools of Boven Digoel district, Papua", is **accepted**. In other words, at the level of $alpha$ (α) = .05 null hypothesis (H_0) that teachers' individual characteristics effect significant negatively on their emotional exhaustion in Christian elementary schools of Boven Digoel district, Papua, is rejected. Further, based on the result of simple linear regression analysis, the coefficient value of R^2 is .853. It means that 85.3 % of teachers' emotional exhaustion in Christian elementary schools of Boven Digoel district, Papua, is explained by teachers' individual characteristics.

Whereas, results of data analysis of the effect of school climate on teachers' emotional exhaustion in Christian elementary schools of Boven Digoel district, Papua, is as presented in Table 3.

Table 3. The effect of school climate (X^3) on teachers' emotional exhaustion (Y)

Effect of X^3 on Y		
N	:	94
R	:	.926
R^2	:	.857
t_{count}	:	23.486
t_{table} .05	:	1.986

Effect of X^3 on Y

Data in Table 3 means that the research hypothesis (H_a) "school climate effects significant

positively on teachers' emotional exhaustion in Christian elementary schools of Boven Digoel district, Papua", is **accepted**. In other words, at the level of $alpha$ (α) = .05, null hypothesis (H_0) that school climate effects significant negatively on teachers' emotional exhaustion in Christian elementary schools of Boven Digoel district, Papua, is rejected. Further, based on the result of simple linear regression analysis, the coefficient value of R^2 is .857. It means that 85.7 % of teachers' emotional exhaustion in Christian elementary schools of Boven Digoel district, Papua, is explained by school climate.

Based on the results of data analysis as it were presented above, empirical model of the effect of teachers' workload, individual characteristics, and school climate on teachers' emotional exhaustion in Christian elementary schools of Boven Digoel district is as reflected in Figure 2 below.

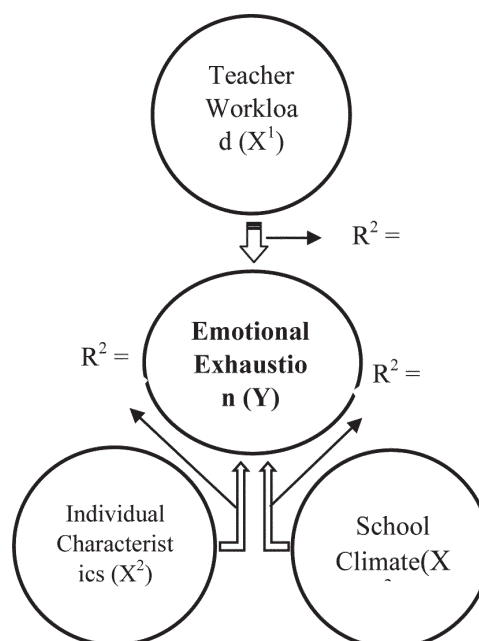


Figure 2. Empirical model of the research

Discussion

This study is aimed at investigating the potential effect of teachers' workload, teachers' individual characteristics, and school climate on teachers' emotional exhaustion in Christian elementary schools of Boven Digoel district, Papua. Results of data analysis revealed a positive and significant effect of teachers' workload on their emotional exhaustion in Christian elementary schools of Boven Digoel district, Papua as it was indicated by the value

of $R^2 = .795$ and the coefficient value of $t_{\text{count}} = 18,909 > t_{\text{table}} = 1.986$. It means that increasing one point in teachers' workload will increase 0.795 point in teachers' emotional exhaustion in Christian elementary schools of Boven Digoel district, Papua. Conversely, reducing one point in teachers' workload will reduce 0.795 point in teachers' emotional exhaustion in Christian elementary schools of Boven Digoel district, Papua. Result of this study is in line with Maslach and Goldberg's (1998), Schaufeli and Enzmann's (1998), and Xiaoming et al.'s (2014) research findings that employees' emotional exhaustion was greatly affected by their workload.

Teaching is a very stressful profession (Kyriacou & Sutcliffe, 1977; Johnson et al., 2005) especially those who are working in the remote areas. Rapid changing in Indonesian education curriculum requires teachers to continuously adjust themselves with such changing. Teachers in the remote elementary schools of Papua and in the remote Christian elementary schools of Boven Digoel alike would feel very success when they are able to gather students in the classroom. This success would certainly not be appreciated because this is not just unusual for the schools in other regions but also increasing teachers' workload in Christian elementary schools of Boven Digoel district. High level of teacher absenteeism in Papua (Werang et al., 2015; Werang et al., 2017; Werang & Pure, 2018) tends to require all the active teachers in Christian elementary schools of Boven Digoel district to teach more than one class.

Results of data analysis also revealed a positive and significant effect of teachers' individual characteristics on their emotional exhaustion in Christian elementary schools of Boven Digoel district, Papua, as it was indicated by the coefficient value of $R^2 = .853$ and the coefficient value of $t_{\text{count}} = 23.085 > t_{\text{table}} = 1.986$. It means that increasing one point in teachers' individual characteristics will increase 0.853 point in teachers' emotional exhaustion in Christian elementary schools of Boven Digoel district, Papua. Conversely, reducing one point in teachers' individual characteristics will reduce 0.853 point in teachers' emotional exhaustion in Christian elementary schools of Boven Digoel district, Papua. Result of this study is in line with Maslach et al.'s (2001) research findings that employees' emotional exhaustion was greatly

affected by their individual characteristics (including demographic characteristics, personal characteristics, and attitude to the work).

Lack of training opportunity to boost teachers' readiness in implementing education curriculum seems to physically and psychologically drain. Besides, unavailability of books and other learning facilities have become yearly challenges facing the Christian elementary school teachers of Boven Digoel district in educating students to succeed. In this point of view, teachers who were able to adequately equip themselves with the knowledge and skills needed during their period of education will be able to take advantages from these short comings as a challenge to prepare their own learning facilities. Conversely, teachers who were not able to adequately equip themselves with the knowledge and skills needed during their period of education will, of course, consider these short comings as a very exhausted conditions and tend to continuously blame the government as the cause of all. These teachers are even not interested to create way of helping students with certain learning difficulties to understand teaching materials.

Finally, results of data analysis also revealed a positive and significant effect of school climate on teachers' emotional exhaustion in Christian elementary schools of Boven Digoel district, Papua, as it was indicated by the coefficient value of $R^2 = .857$ and the coefficient value of $t_{\text{count}} = 23.486 > t_{\text{table}} = 1.986$. It means that increasing one point in school climate will increase 0.857 point in teachers' emotional exhaustion in Christian elementary schools of Boven Digoel district, Papua. Conversely, reducing one point in school climate will reduce 0.857 point in teachers' emotional exhaustion in Christian elementary schools of Boven Digoel district, Papua. Result of this study is in line with Hoy and Woolfolk's (1993), Singh and Billingsley's (1998), and Grayson and Alvarez's (2008) research findings that employees' emotional exhaustion was greatly affected by organizational climate.

Teachers' emotional exhaustion due to the work overload and the lack of individual capability would be easily overcome if all the teachers are motivated to help each other. In this point of view, having shared belief of the values contained in schools' vision and mission would

be a driving force for teachers to fight together to solve the problems (Suriansyah, 2014).

School principal has a pivotal role in determining and influencing teachers' way of communicating and helping each other (Werang, 2014b). In this point of view, having school principal who acts as peer for teachers (Suriansyah & Aslamiah, 2015) and views teachers as integral part of his or her family in school (Werang et al., 2014) is the key to eliminate teachers' emotional exhaustion in Christian elementary schools of Boven Digoel district, Papua. Unfortunately, high level of school principal absenteeism as it was reported by Werang et al. (2015) and Werang et al. (2017) made it difficult for teachers to have leaders who are always with and for them. Besides, the existing gaps among teachers might affect negatively on the effort of creating a conducive school climate and, in turn, affect negatively on teachers' emotion.

CONCLUSION

This study provided a closer look on the effort of investigating the potential effect of teachers' workload, teachers' individual characteristics, and school climate on teachers' emotional exhaustion in Christian elementary schools of Boven Digoel district, Papua. Based on the results of data analysis, the conclusions depicted from the results of the study are follows.

- a. Teachers' workload effects significant positively on their emotional exhaustion in Christian elementary schools of Boven Digoel district, Papua, as it was indicated by the coefficient value of $R^2 = .795$ and the coefficient of $p\text{-value} = .000$. It means that 79,5 % of teachers' emotional exhaustion in Christian elementary schools of Boven Digoel district, Papua, was explained by teachers' workload, while the rest (20,5%) were explained by other variables.
- b. Teachers' individual characteristics effects significant positively on their emotional exhaustion as it was indicated by the coefficient value of $R^2 = .853$ and the coefficient of $p\text{-value} = .000$. It means that 85,3 % of teachers' emotional exhaustion in Christian elementary schools of Boven Digoel district, Papua, was explained by teachers' individual characteristics, while the rest (14,7%) were explained by other variables.

- c. School climate effects significant positively on teachers' emotional exhaustion in Christian elementary schools of Boven Digoel district, Papua, as it was indicated by the coefficient value of $R^2 = .857$ and the coefficient of $p\text{-value} = .000$. It means that 85,7% of teachers' emotional exhaustion in Christian elementary schools of Boven Digoel district, Papua, was explained by school climate, while the rest (14,3%) were explained by other variables.

Implications of these findings are follows:

- (a) school supervisor and the head of education office at regional government level as well should take an effort of creating different programs to improve workload system and school climate on one hand and, on the other hand, foster teachers' character of working hard; and (b) the absence of empirical study investigating the effect of workload, individual characteristics, and school climate on teachers' emotional exhaustion in Christian elementary schools of Boven Digoel district, Papua, findings of this study may theoretically add the existing literature on this topic.

Since this empirical study was limited on the effort of investigating the potential effect of workload, individual characteristics, and school climate on teachers' emotional exhaustion in Christian elementary schools of Boven Digoel district, Papua, future studies on the similar topics with a wider range of samples and of variables are fully recommended.

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UNDERSTANDING POETRY THROUGH THE USE OF COOPERATIVE LEARNING MODEL

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Abstract: This study describes the learning process of inner and physical structure of poetry understanding through the use of Student Team Achievement and Division (STAD) and Cooperative Integrated Reading and Composition (CIRC) cooperative learning models. In addition to the cooperative learning models, literary reading interest is also used as a consideration in the learning process of poetry understanding. This experimental study involved 63 samples from a total of 124 people. Samples were randomly selected and assigned into two experimental groups. The experimental group I, with a total of 33 subjects, was treated with the STAD model, while the experimental group II, with a total of 30 subjects, was treated with the CIRC model. The subjects in the two experimental groups were assigned to complete a literary reading interest questionnaire. After the treatment, a poetry understanding test was given to the subjects in the two groups. A *t*-test was subsequently used to examine the students learning outcome, by considering their interest in literary reading. The results of data analysis showed no significant differences in the application of cooperative learning models in poetry understanding. Both students with high and low literary reading interest found the learning models helpful in improving their performance in the understanding inner and physical structure of poetry. Students with low literary reading interest were motivated in the learning process as a result of the teamwork in completing the poetry understanding tasks.

Keywords: *poetry understanding, cooperative learning, literary reading interest*

PEMAHAMAN PUISI MENGGUNAKAN MODEL PEMBELAJARAN KOOPERATIF

Abstrak: Penelitian ini mendeskripsikan proses pembelajaran memahami struktur batin dan struktur fisik puisi menggunakan model pembelajaran kooperatif tipe *Student Team Achievement and Division* (STAD) dan *Cooperative Integrated Reading and Composition* (CIRC). Selain menerapkan model pembelajaran kooperatif, minat baca sastra juga menjadi pertimbangan dalam proses pembelajaran memahami puisi. Penelitian eksperimen ini dilakukan pada 63 orang sampel dari 124 orang populasi. Sampel dipilih secara acak dan ditugaskan ke dalam dua kelompok eksperimen. Kelompok eksperimen I dengan jumlah partisipan 33 orang diberikan perlakuan dengan model STAD dan kelompok eksperimen II dengan jumlah partisipan 30 orang diberikan perlakuan dengan model CIRC. Sampel pada kedua kelompok eksperimen diminta untuk mengisi angket minat baca sastra. Setelah diberikan perlakuan, sampel pada kedua kelompok eksperimen mengerjakan tes pilihan ganda memahami puisi. Hasil belajar kedua kelompok dengan menggunakan uji *t*-test dibandingkan dengan pertimbangan minat baca sastra. Hasil analisis data menunjukkan tidak terdapat perbedaan yang signifikan dari penerapan model pembelajaran kooperatif dalam proses memahami puisi. Model pembelajaran yang digunakan dapat membantu meningkatkan kinerja siswa dalam memahami struktur batin dan struktur fisik puisi, baik mahasiswa dengan minat baca sastra tinggi maupun mahasiswa dengan minat baca rendah. Mahasiswa yang memiliki minat baca sastra rendah termotivasi dalam proses pembelajaran karena adanya kerjasama tim dalam menyelesaikan tugas-tugas belajar memahami puisi.

Kata Kunci: *pemahaman puisi, pembelajaran kooperatif, minat baca sastra*

INTRODUCTION

High-level thinking processes, communication skills, and social relationships

(Bromley & Modlo, 1997) are an important issue and become the capital to build a better life in the 21st century. Cooperative learning

becomes the solution used in the learning process in accordance with the demands of the century 21. Cooperative learning is a group learning that gives students more responsibility for their own learning and teams resulting in an interdependence relationship that promotes positive social relationships in the classroom and builds a classroom climate that aids in the learning process (Stevens, 2008:105). Cooperative learning can improve learning achievement (Tiantong & Teemuangsai, 2013); (Durukan, 2011); (Adesoji & Ibraheem, 2009) through the interaction of the social environment and change the objective structure in the classroom to focus on improving learning outcomes and positive motivation for all students.

Children view cooperative learning as a way to help them become more successful, especially in order to prepare for social life by building collaboration and collectivity. Cooperative learning has an effect on the relationships among students in groups, mutual acceptance, and improvement of students' self-esteem. In other words, cooperative learning will help students improve literacy skills, improve metacognitive strategies for thinking and learning awareness, build effective communication skills, improve language skills, and improve social skills (Bromley & Modlo, 1997). In addition, the more students work together in collaborative groups, the more they understand, retain, and feel better about themselves and their peers on the team. Collaborative group collaboration encourages student responsibility to improve learning achievement and social skills (Tiantong & Teemuangsai, 2013).

The Student Team Achievement Team and Division (STAD) model is a model of cooperative learning that can help develop students' positive attitudes toward themselves, peers, adults, and learning in general (Adesoji & Ibraheem, 2009). STAD is conducted with the teacher presenting the subject matter, the students in the heterogeneous group are involved cooperatively according to the material being studied, the teacher gives the question according to the subject matter to the student in the form of quiz, the students answer the question individually without help from their teammate, each team member is calculated to find the team score, the teacher rewards the best three teams (Slavin, 1994); (Adesoji & Ibraheem, 2009), (Tiantong & Teemuangsai, 2013).

The Cooperative Integrated Reading and Composition (CIRC) model is also a cooperative learning model based on teamwork designed to develop reading and writing skills. CIRC is implemented with students prepared in heterogeneous reading groups, students are paired in reading groups by conducting feedback learning to develop basic skills, such of oral reading, contextual guessing, asking questions, summarizing, and composing writing, then assessing (Slavin, 1994). The CIRC model can improve the achievement and retention of reading and writing (Durukan, 2011).

Cooperative learning model types of STAD and CIRC is applied in language classes for learning to understand poetry. This learning model is used as a way of overcoming gaps between poetry learning with the demands of learning that should be, such as: the capital of poetry learning competencies, packaging of poetry learning goals, packaging of poetry learning, packaging methods and strategies for poetry learning, packaging of poetry learning media, and packaging learning evaluation (Suyitno, Andayani, & Nugraheni, 2015).

Cooperative learning in language classes can have a positive effect on student learning outcomes, a key factor affecting student feedback in the learning process, and making students comfortable in learning, freer in the classroom, motivated, and more active in communicating, which is high for learning (Sachs, Shum, Bureau, Kong, & Christopher, 2003). For learning to understand poetry, students are required to understand the physical structure and inner structures of poetry. The inner structure consists of a theme, feeling, tone, and intention. The inner structure consists of typography, imagery, concrete words, figurative language, and verification (Ramadhanti & Diyan, 2017). The theme is the subject of a poem. The Feeling is the poet's appreciation, attitude, or emotion for the subject of the poem he wrote, such as a feeling of wonder, sadness, joy, anger, surprise, joy, disbelief, counsel, and so on. Tone refers to the poet's attitude to the issues discussed in his work, such as patronizing, berating, wooing, whining, inviting, sarcastic, and so on. The Intention is a message the poet wants to convey, for example expecting the reader to be angry, hateful, like something, and rebel against something. Typography is the appearance of a

poem as one of the creative arts. The appearance of the poem can be observed in various forms, such as language structuring, the use of signs or symbols, setting the spacing of lines, setting letters, words, lines, or stanzas. Imagery is a word or composition of words that can express one's sensory experiences, such as the image of a vision, hearing, smell, and feeling. A concrete word is a word that a poet explicitly uses in conveying the issues he conveys. These concrete words are the words that the senses can sense to allow for the appearance of images. Figurative language is a language full of allegories, such languages can turn on, alert effects, and cause certain connotations. Verification concerns the issue of rhyme and rhythm

The implementation of cooperative learning in the classroom is influenced by certain variables, such as gender, level of proficiency, time, patterns of class interaction, and attitudes toward others. In addition, interest in literary reading is also a variable that also influences the learning process. Furthermore, the interest in reading someone is known through three aspects, namely attention, feelings and responses to what is read. Attention includes the frequency, amount, and time spent in reading. Feelings include a feeling of joy to the reading material and the interest and satisfaction after reading. Responses include reading comprehension, finding problems and taking solutions, and benefiting after reading (Slameto, 2010). Students need a high reading interest because reading skills are very important to improve the success of students in school and outside the school, while students who have low reading interests will have difficulty motivating themselves to read for academic purposes, what else for fun (Khairuddin, 2013). Social skills created through cooperative learning will help students improve vocabulary and reading skills (Shaaban, Al-Badawi, & Ghaith, 2007). Thus, students with low reading interests will be motivated in the learning process.

The research was conducted to prove the hypothesis about the influence of cooperative learning model in learning to understand poetry by considering literary reading interest, both high and low. Hypothesis tested, namely: there is a significant difference between the results of learning to understand the poetry of students who have high literary reading interest in learning with cooperative learning model type STAD and

CIRC, there is a significant difference between the results of learning to understand poetry students who have low literary reading interest in learning with STAD and CIRC cooperative learning model, and there is interaction between the use of cooperative learning model and literary reading interest in influencing the learning result of understanding poetry.

METHOD

This study uses experimental research design. Participants in this study were students who studied is the Indonesian language and literature education courses STKIP PGRI West Sumatra. Participants are male and female students who take the Poetry Appreciation course. This course is studied in the third semester during their studies. Initial tests were given to 124 students to determine the homogenization of study participants. Then 63 of the 124 participants with a score of one standard deviation above and below the mean were randomly assigned to two experimental groups, 33 participants in the experimental class I and 30 participants in the experimental class II.

The following instruments were used as data collection tools in this study: literary reading interest questionnaire and multiple choice test questions.

Literary Reading Interest Questionnaire

Literary reading interest questionnaire is structured according to the three main aspects of reading interest, namely: attention to reading, feelings of reading, response after reading. The questionnaire consisting of 70 items statement. Prior to use in the study, each item of the questionnaire was given to the expert to be validated.

The multiple choice test is structured according to the physical structure and inner structure of the poem consisting of 50 items of an item. Prior to use in the study, expert validation for each item was tested and tested to determine the validity and reliability of the test.

To facilitate the treatment process with STAD and CIRC model prepared by the lecture unit which contains steps of applying STAD and CIRC model in the learning process to understand poetry. To make it easier for participants to understand poetry, they are given the book "Understanding Poetry." The book contains

poetry recognition materials, understanding the elements of form and content of poetry, understanding the elements of sound in poetry, understanding the elements of language in poetry, understanding the elements of imagery in poetry, understanding aspects of figurative language in poetry (Ramadhanti & Diyan, 2017)

Procedure

Samples in both experiment classes fill out a literary reading interest questionnaire for high literary reading interest and low literary reading interest.

In the experimental class I, implemented learning by applying STAD type cooperative learning model. STAD is implemented by applying five main components: class presentations, group work, quiz assignments, individual progress scores, and team recognition.

Class presentation: The class presentation is led by the teacher. The issues discussed are subject matter activities during STAD implementation. This activity makes it easier for participants to do quizzes, quiz score scores, and their team scores. (a) Group work: group work is carried out to prepare each individual in the quiz work. The material understands poetry and analyzes understanding the inner structure and physical structure of poetry understood in group work. They work together so that each individual understands the subject matter. (b) Quiz giving: the teacher presents additional material related to understanding poetry, then the participants working on the individual quiz understand the poetry. (c) Individual progress score: each participant earns an initial score based on the results of the quiz. The participants then collected points for their team based on the level of quiz score increase compared to their initial score. (d) Group recognition: teams will be rewarded if their score reaches certain criteria related to the purpose of learning to understand poetry.

In the experimental class II, learning is done by applying the cooperative learning model of CIRC type. CIRC is implemented by applying three main components, namely: basic activities related to cooperative learning, reading comprehension, and integrated writing activities. (a) Basic activities related to cooperative learning: basic activities undertaken are group divisions and the provision of materials and

poems for analysis of poetical understanding in the learning process. Participants work in pairs in groups. (b) Understanding the reading: Participants are given a given poem, identifying key ideas related to the inner structure and physical structure of poetry, understanding the relationships between elements in the poem, and making conclusions about the inner structure and physical structure of poetry. (c) Integrated writing activity: Participants write out the results of an understanding of the inner structure and structure of poetry in the form of a short essay. The essay contains an explanation of the meaning contained in the poem.

The test of understanding poetry in the form of multiple choice tests is given after the treatment with STAD and CIRC models is carried out in the experimental class.

Data Analysis

To test the hypothesis of the difference of learning result to understand poetry (hypothesis 1 and hypothesis 2) is done by using t-test and for the third hypothesis test which aims to know the interaction of using cooperative learning model type STAD and CIRC and literary reading interest to result learn to understand poetry used formula a unweighted means method (Ferguson, 1976: 258-260).

RESULTS AND DISCUSSION

Result

Analysis of Questionnaire on Student Literary Reading Interest

The results of the measurement of literary reading interest show that students have the high and the low literary reading interest. Of the 63 students obtained information as many as 34 students have high literary reading interest and 29 students have low literary reading interest. Students who have high and low literary reading interest are scattered in the experimental class I and in the experimental class II. Measurement of literary reading interest includes three aspects, namely: attention, feeling, and response to the reading material.

Attention to the Reading Material

Attention to the reading material reviewed in terms of three indicators, namely: frequency of reading literary works, time used, and the number of literary works reads. Reviewed from

the frequency of reading literary works, student responses are presented in table 1 below.

Table 1. Students Responses to the Frequency of Reading Literary Works

	Item	%
1	I took the time to read literary works when on holiday	66,0
7	I took the time to read even though I was tired of all the routines	55,9
3	Reading literary works becomes an option when I feel bored reading other books.	70,2
2	I like learning related to literary works because I like reading literary works.	76,8
6	By reading literary works, I can follow the learning process well.	81,3
5	I often borrow books related to literary works when visiting the library.	66,0
4	The learning task that I did first was that which was related to literary works.	64,8

Reviewed from the time used to read literary works, student responses are presented in table 2 below.

Table 2. Students Responses to the Time Spent Reading Literary Works

	Item	%
8	I usually visit the reading room or library to read literary works.	67,3
10	I read literary works to fill my spare time.	64,8
13	I read a book every day before starting the activity.	67,9
11	I usually read at least 30 minutes every day.	57,5
9	I usually read a maximum of 1 hour every day.	57,1
12	To motivate myself to read diligently, I put motivational sentences in my room.	80,9

Reviewed from the number of literary works that are read, students responses are presented in table 3 below.

Table 3. Students responses to the number of literary works read

	Item	%
14	I target at least reading one literary work every day.	68,9
15	My goal of reading literary works is to add insight.	73,3
16	I have an interest in reading literary works.	74,6
17	I have read at least 7 recent literary works.	58,4
18	I read literary works because I wanted to be a writer of literary works.	70,2
19	I tried to find the creative process of the writers in writing literary works.	69,5

Feelings to the Reading Material

Feelings to the reading material reviewed in terms of two indicators, namely: feelings of pleasure towards literary reading material and interest or satisfaction after reading literary works. Reviewed by the feeling of pleasure in reading literary works, students responses are presented in table 4 below.

Table 4. Students Responses to Feelings of Pleasure Towards Literary Works

	Item	%
20	I read literary works because I want to be a writer.	75,9
21	The books that I read more about literary works.	75,2
22	I feel satisfaction after reading literary works.	82,2
32	I feel there is something missing if I haven't read literary works.	62,2
28	I feel bored if I don't read.	75,2
29	I feel comfortable after reading literary works.	65,7
30	I feel relaxed after reading even in the midst of busy activities.	70,2
23	I feel satisfied every time I finish reading literary works.	65,1
25	I choose to read rather than do anything else in my spare time.	64,1
27	I read a book before the learning began.	82,5
26	The reading that I read really helped me in the learning process.	73,3
31	I always take time to read literary works every day despite many activities.	62,2

Reviewed by the interest and satisfaction after reading literature, students responses are presented in table 5 below.

Table 5. Students Responses to Interest/Satisfaction After Reading Literary Works

	Item	%
37	I always read attentively and concentration.	77,1
34	I read to easily answer questions.	68,9
33	I read to make it easy to explain the contents of the reading to friends.	74,3
36	I got ease in learning because I read a lot.	75,2
42	I prefer reading instead of doing others.	65,4
41	I have a great interest in reading literary works.	76,8
40	I am more interested in reading literary works more than reading other books.	61,6
43	I have my own satisfaction after reading literary works.	70,5
35	I have a large collection of books on literary works.	57,5
39	I always visit the book bazaar to buy the latest books.	54,3
38	I bought a book and hastened to read it.	63,8

Response to the Reading Material

Response to the reading reviewed in terms of three indicators, namely: understanding literary content, finding problems and problem-solving solutions in literary works, and taking advantage after reading literary works. Reviewed from understanding the contents of literary works, students responses are presented in table 6 below.

Table 6. Students Responses in Understanding the Contents of The Literary Works

	Item	%
49	I can understand the contents of literary works.	69,5
46	I can explain again the contents of the literary works.	75,6
47	I try to understand literary works to get the values contained in them.	75,6
50	I understand the meaning of every word conveyed in a literary work.	78,1
44	During the learning, I was asked by the lecturer to answer questions according to the contents of the reading.	75,6
45	I can help friends who have difficulty understanding literary works.	70,8
48	I can quote every message conveyed through the literary work that I read.	74,3

Reviewed from the way of finding problems and problem-solving solutions in literary works, students responses are presented in table 7 below.

Table 7. Students Responses to Feeling Happy With Literary Works

	Item	%
51	I always record the important things that I found during reading.	78,4
52	After reading literary works, I gained a lot of experience.	79,4
54	I have benefited a lot after reading literary works.	77,8
56	I found various portraits of everyday life in literary works.	79,4
53	With a lot of reading literary works, I love the environment more.	73,3
55	I can apply values in literary works in everyday life.	68,9

Reviewed of the benefits obtained after reading literary works, students responses are presented in table 8 below.

Table 8. Students Responses to Benefits After Reading Literary Works

	Item	%
59	I have benefited a lot after reading literary works.	77,8
57	I get various life values in literary works.	67,6
58	I get a new experience after reading literary works.	77,5
62	I try to write after reading literary works.	70,5
63	I became fond of writing because I read a lot.	74,6
60	I am motivated to write because I read a lot.	75,2
61	I can produce a literary work.	59,7

Learning Outcomes Understanding Poetry in Experimental Class I and II

The results of the first hypothesis testing show that there is no significant difference in learning outcomes to understand poetry using cooperative learning model type STAD and CIRC. This is evidenced by the results of the data analysis obtained $t\text{-test} = 0.678$ and $t\text{ table value} = 1.67$. This means $t\text{-test} < t\text{ table}$, so H_1 is rejected and H_0 is accepted. In addition, the acquisition of the average score of the learning

outcomes to understand poetry was not much different after being taught by STAD type cooperative learning model in experimental class I and CIRC cooperative learning model in Experiment II class. The average score of students studying with STAD type cooperative learning model is 75.48. The average score of students studying with CIRC type cooperative learning model is 73.50. The average difference between the two experimental classes is 1.98. The result of learning to understand poetry using STAD type cooperative learning model is 1.98 is superior compared with the result of learning to understand poetry using cooperative learning model of CIRC type. Differences in learning outcomes to understand the poetry with both types of cooperative learning model are not too large. This proves that the two types of cooperative learning model are equally effective to be used in the process of learning to understand poetry.

In addition, when compared with test results before students studying with cooperative learning model type STAD and CIRC, student learning outcomes change. Student learning outcomes have increased. The average score of students before learning with STAD type cooperative learning model is 39.6 and after learning with STAD type cooperative learning model is 75.48. Differences in student learning outcomes before and after learning with STAD type cooperative learning model is 38.88. The average value of students before learning with CIRC type cooperative learning model is 38.85 and after learning with cooperative learning model CIRC type is 73.50. Differences in student learning outcomes before and after learning with cooperative learning model CIRC type is 34.65.

The application of cooperative learning model type STAD and CIRC give positive influence to the result of learning to understand poetry. Learning outcomes after using both models are not much different because they are both effective use in the learning process. Students are more motivated in the learning process, students who initially have difficulty understanding the inner structure and physical structure of poetry become more familiar with the concepts.

Learning Outcomes Understanding Poetry with High Literary Reading Interest in Experimental I and II classes

The result of the second hypothesis test shows that there is no significant difference in the result of learning to understand the poetry of students with the high literary reading interest who learning by using STAD type cooperative learning model and students with high literary reading interest learning with cooperative learning model of CIRC type. This is evidenced by the results of the obtained $t\text{-test} = 0.039$ and t table value = 1.71. This means $t\text{-test} < t$ table, so H_1 is rejected and H_0 is accepted. In addition, the acquisition of the average score of the learning outcomes to understand student poems was not much different after being taught by STAD type cooperative learning model in experimental class I and CIRC cooperative learning model in experiment II class.

The average score of students in learning with STAD type cooperative learning model is 75.65. The average score of students in learning with CIRC type cooperative learning model is 75.05. The average difference between the two experimental classes is 0.6. The results of learning to understand the poetry of students with high literary reading interest learning with STAD type cooperative learning model is 0.6 is superior compared with the results of learning to understand the poetry of students with the high literary reading interest learning model with cooperative learning type CIRC. Differences in learning outcomes to understand the poetry of students with the high literacy reading interest in learning with both types of cooperative learning model are not too large. This proves that both types of cooperative learning model are equally effective in using the learning process to understand the poetry of students with high literary reading interest.

In addition, when compared with test results before students with high literacy reading interest with cooperative learning model type STAD and CIRC student learning outcomes changed. Student learning outcomes have increased. The average score of students with high literacy interest before learning with STAD type cooperative learning model is 39.39 and after learning with STAD type cooperative learning model is 75.65. Differences in student learning outcomes before and after learning

with STAD type cooperative learning model is 36.26. The average score of students with high literacy interest before learning with CIRC type cooperative learning model is 39.5 and after learning with cooperative learning model CIRC type is 75,5. Differences in student learning outcomes before and after learning with cooperative learning model CIRC type is 36.

Learning Outcomes Understanding Poetry with Low Literary Reading Interest in Experimental I and II classes

The result of the third hypothesis testing shows that there is no significant difference in the result of learning to understand the poetry of the students with low literary reading interest that learn by using STAD type cooperative learning model and the students studying with low literary reading interest that learn by using CIRC type cooperative learning model. This is evidenced by the results of $t\text{-test} = 0.723$ and t table value = 1.70. This means $t\text{-test} < t$ table, so H_1 is rejected and H_0 is accepted. In addition, the acquisition of the average score of the learning outcomes to understand student poems was not much different after being taught by STAD type cooperative learning model in experimental class I and CIRC cooperative learning model in experiment II class.

The average scores of students with the low literary reading interest in learning with STAD type cooperative learning model are 75.95. The average scores of students are 73.05. The average difference between the two experimental classes is 2.9. The results of learning to understand the poetry of students with the low literary reading interest in learning with STAD type cooperative learning model is 2.9 superior compared with the results of learning to understand the poetry of students with low literary reading interest learning with cooperative learning model type CIRC. Differences in learning outcomes to understand the poetry of students with low literary reading interest who learn with both types of cooperative learning model are not too large. This proves that both types of cooperative learning model are equally effective to be used in the learning process.

In addition, when compared with the results of tests before students with low literary reading interests learning with cooperative

learning model type STAD and CIRC student learning outcomes changed. Student learning outcomes have increased. The average score of students with low literary reading interest before learning with STAD type cooperative learning model was 39.54 and after learning with STAD type cooperative learning model was 75.95. Differences in student learning outcomes before and after learning with STAD type cooperative learning model is 36.41. The average score of students with low literary reading interest before learning with CIRC type cooperative learning model is 38.89 and after learning with cooperative learning model CIRC type is 73,05. Differences in student learning outcomes before and after learning with cooperative learning model type CIRC is 34.16.

The Interaction between Cooperative Learning Model Type STAD and CIRC with Literary Reading Interest in Influencing Learning Outcomes Understanding Poetry

An interaction occurs when the effects of one factor depend on another factor in influencing something. The result of the fourth hypothesis test shows that there is no interaction between the two learning models and the literary reading interest in influencing the result of learning to understand poetry. This is evidenced by the results of the hypothesis test obtained $F\text{-test} = 0.203$ and F table = 4.02. This means $F\text{-test} < F$ table, so H_1 is rejected and H_0 is accepted. This means there is no interaction between the learning model with the literary interest in influencing the learning outcomes to understand poetry.

STAD and CIRC cooperative learning models are not dependent on one another with the literary reading interest in influencing learning outcomes to understand poetry. This means that without the literary reading interest, cooperative learning model type STAD and CIRC will still affect the results of learning to understand poetry. Conversely, without the cooperative learning model of STAD and CIRC type, literary reading interest will still influence the learning outcomes of understanding poetry. Furthermore, students who have high literary reading interest and low literary reading interest can learn by using cooperative learning model type STAD and CIRC.

Discussion

The results of the questionnaire analysis showed that students involved in the learning process had different literary reading interest backgrounds, some were high and some were low. They are spread across two different experimental classes. In the learning process, the teacher has the task to help students improve reading skills and instil reading habits to students. The method that can be used by the teacher is to provide time to read, offer reading choices to students, share reading material to friends, and provide models of adult reading that are appropriate for them (Moser & Morrison, 1998). The learning process is done by reading and writing, reading and writing again. The composition of reading and writing is a method that can have an influence on increasing the interest and motivation of students reading. Students will be actively involved in learning and have good reading attitudes and habits (Moser & Morrison, 1998). The method applied is in accordance with the principles of the CIRC type of cooperative learning. This method can increase students' interest and motivation in reading. If students have a great interest in reading, then they will be able to understand all types of texts for any purpose (O'Flynn, 2016), including understanding poetry texts.

Student learning outcomes indicate that the STAD and CIRC cooperative learning models can be used in the learning process of understanding poetry, both students with the high literary reading interest and the low literary reading interest. Thus, learning can be carried out without having to consider the high and the low literary reading interest because cooperative learning can improve reading motivation (Shaaban et al., 2007). Students who have the high literary reading interest will increase their learning outcomes and students who have the low literary reading interest will be motivated to improve the quality of their learning. In addition to interest factors, learning carried out in cooperative groups is also a major factor in increasing learning outcomes in understanding poetry. Student interaction in groups is also influenced by group composition and student personality (Webb, 1984). In addition, the choice of the right learning strategy or model has an effect on improving the student's reading experience (Suryaman, 2018).

Heterogeneous group division has an influence on student learning outcomes. All this time group learning is considered boring for students because only smart students work while others don't. The division of groups carried out by students sometimes creates discrimination among students. Students will choose a group of friends who feel close to them so that there is a striking difference between students. Good collaboration between students is not created because there are those who feel marginalized. The heterogeneous group divided by the teacher reduces discrimination between these students. The teacher can divide the group by paying attention to the various backgrounds of students' abilities. Students who have high abilities can work together to help friends who have low abilities (Ramadhanti, 2017:41).

In addition, in the process of doing tests, the experience of learning in groups is a motivation for students to understand poetry. This shows that individual accountability increases with teamwork (Slavin & Tanner, 1979). In addition to the interest factor and cooperative group division, the strategy used by the teacher in managing cooperative learning in the classroom is an important factor in the implementation of the learning process. By using poetry text as a medium in the learning process, the teacher has implemented text-based cooperative learning. The cooperative learning process, especially the STAD type can also be implemented by teachers together with Web-based technology (Hariadi, 2015). Thus, the teacher becomes a determining factor in the implementation of the cooperative learning process in the classroom. The teacher's experience in implementing previous learning and the learning context in the form of groups requires the teacher to continue to guide students in the problem-solving process in accordance with the material being studied (Siegel, 2005).

Teachers who apply cooperative learning in the classroom make learning more mediated. With teachers implementing group work to make the class more disciplined, students also showed a positive interaction in their group (R. M. Gillies, 2006). Teachings mediated by teacher interaction have sparked hope in students who are sensitive to their need to provide more detailed explanations and responses to others. The interaction between teachers and students in cooperative groups occurs because students

understand how to negotiate group tasks. When teachers build cooperative learning in the classroom, they create well-structured groups and influence the way they interact in groups (Gillies, 2008). Student verbal behaviour in groups helps and supports group work. Students listen earnestly what the teacher says and do the job well. Student verbal behaviour arises because they are challenged to think deeper and clearer about the issues being discussed. Students are required to reflect on the implications of each poem he read and conclude the physical structure and inner structure of poetry.

CONCLUSION

Cooperative learning is the way to improve the high-level thinking skills needed in the 21st century. Students who are able to develop teamwork in study groups will be increasingly encouraged in the process of thinking in solving problems in accordance with the subject matter. Student interaction in groups affected by group composition strongly affects the accountability of each individual in performing the task, especially understanding poetry. STAD and CIRC's cooperative learning enhances students' understanding of the physical structure and inner structures of poetry requiring critical reading skills. Students with low reading interest are motivated in learning because cooperative learning can encourage students to think and read.

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SOCIOECONOMIC STATUS, PARENTAL INVOLVEMENT IN LEARNING AND STUDENT' MATHEMATICS ACHIEVEMENT IN INDONESIAN SENIOR HIGH SCHOOL

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Abstract: The objectives of the research are to examine: (1) the relationship between parents' education level as an indicator of socioeconomic status (SES) with students' mathematics achievement, and (2) the interaction between parents' education level and the intensity of parental involvement in predicting students' mathematics achievement. The sample (N=2,867) was selected through stratified random sampling of Indonesian high school National Examination (NE) test takers in 2016. The sampling was based on careful consideration of the representativeness and the distribution of provinces, gender, type of school (general-vocational), and school status (public-private). Data was analyzed using parallel multiple mediator analyses. The findings highlight that: (1) compared to fathers, mothers' education level had a stronger contribution to students' achievement in mathematics, and (2) mothers' involvement mediated the relationship between mothers' level of education and students' mathematics achievement. However, more intensive parental involvement was associated with lower mathematics achievement.

Keywords: *SES, mathematics, parents' education levels, involvement*

STATUS SOSIAL EKONOMI, KETERLIBATAN ORANGTUA DALAM BELAJAR DAN HASIL BELAJAR MATEMATIKA SISWA SMA DI INDONESIA

Abstrak: Penelitian ini bertujuan untuk menguji: (1) kaitan antara tingkat pendidikan orangtua sebagai indikator status sosial ekonomi (SSE) dengan hasil belajar matematika siswa, dan (2) interaksi antara tingkat pendidikan orangtua dengan intensitas keterlibatan orangtua dalam memprediksi hasil belajar matematika anak-anaknya. Sampel penelitian ini (N=2,867) dipilih secara *stratified random sampling* dari peserta Ujian Nasional di Indonesia tahun 2016 jenjang SMA. Pengambilan sampel didasarkan pada keterwakilan dan sebaran provinsi, jenis kelamin, jenis sekolah (SMA/MA atau SMK) dan status sekolah (negeri-swasta). Data dianalisis dengan menggunakan analisis parallel multiple mediator. Hasil penelitian menunjukkan: (1) pendidikan ibu memiliki peran sangat penting karena sangat berkontribusi dalam menunjang hasil belajar matematika anaknya dibandingkan pendidikan ayah, dan (2) keterlibatan ibu dalam belajar anak yang dimediasi tingkat pendidikannya berpengaruh terhadap hasil belajar matematika anaknya. Namun demikian, keterlibatan orangtua yang terlalu intens dalam kegiatan belajar anak justru berdampak kurang baik terhadap hasil belajar matematika anaknya.

Kata Kunci: *SSE, matematika, tingkat pendidikan orangtua, keterlibatan*

INTRODUCTION

Socioeconomic status (SES) refers to the position of an individual or a group within the hierarchy of social structure. SES is measured using a composite of variables, often including level of education, occupation category, income, possessions and place of residence (Sirin, 2005). The focus of this study is on parents' education level as an indicator of SES, since it is known to be related to students' school achievements

(Kiadarbandsari, Madon, Hamsan, & Nouri, 2016; Soni & Kumari, 2017). This study examines the relationships between parents' education level and students' mathematics achievement among a sample of high school students in Indonesia. More specifically, this study investigates the role of parental involvement in the relationship between parents' education levels and students' mathematics achievement.

White's (1982) pioneering study provided early evidence about the influence of family SES on students' learning achievement. Since White's publication, studies in America, Canada and England have shown that socioeconomic factors substantially influence students' learning and achievement (Blanden & Gregg, 2004; Duncan & Murnane, 2011; Ferguson et al., 2007). In general, higher parental education and family income are associated with better students' achievement (Phillips, 2011; Reardon, 2011).

In an Australian study, McConney and Perry (2010) tested the correlation between SES and mathematics achievement. Using the PISA 2003 data, they found that school's SES consistently correlate with mathematics achievement across different groups of students. Students with high SES background tend to have higher mathematic achievement compared to those from low SES.

In an Asian context, a study reported by Kim et al. (2003) reveals similar findings. The higher the parents' education level is, the better the students' achievement. A study in Taiwan also found that parents' income significantly influences students' learning achievement. Students whose parents have high income also achieve better in their learning (Fu, Cheng, Tu, & Pan, 2007).

How can this phenomenon be explained? Theoretically, parents with high SES levels understand the education process and know more about how to succeed in school. They are more attentive towards their children's learning activities and progress. They are more likely to motivate their children to obtain higher academic achievement (Jones, Bradbury, & LeBoutillier, 2011). They also provide better access to books and other resources that support their children learning. Consequently, students from high SES families generally possess higher self-confidence to manage challenges of academic life (Walpole, 2003).

In contrast to students' from high SES families, those from low SES families often experience poorer socialization. Although the parents may be motivated to support their children's education and wish their children to achieve well in school, they do not have enough knowledge about how to do so effectively (Jones et al., 2011). They are often less appreciative

about academic learning, preferring their children to find secure an income as soon as possible.

Not with standing the aforementioned research findings, the authors' experience of being raised and educated in Indonesia suggests that high SES Indonesian families sometimes foster conditions that hinder children's learning. Students from such families often think there is no need to study hard in school because they believe that their needs and future livelihood is largely secure. On the contrary, students from low SES families are often more diligent compared to those from high SES families (Congeret al., 2010; Sánchez et al., 2011; Suyanto, 2001). They are strongly motivated to improve their family income and to self-support further education through scholarships.

This may partly explain why some studies on SES conducted in Indonesia have produced different findings from that of other countries. For example, parents' SES was found to have no direct impact on students' learning achievement (Rahayu, 2011), and there is no correlation between parents' education levels and income with students' learning achievement (Saniarto, 2013). These findings are interesting and provide an impetus for a more comprehensive study on this topic. Previous studies, however, were typically based on narrow sets of samples, e.g. only from a single school or district.

Parents' Education, Parental Involvement, and Achievement in Mathematics

Students come from diverse family backgrounds. Each family has their own culture, which is shaped in part by the parents' level of education and wealth. This family culture is reflected in parents' perspectives about raising and educating their children. Various studies have shown that parents' education level affects their involvement in their children's learning (Cao, Bishop, & Forgasz, 2006; Kiadarbandsari et al., 2016; Slavin, 2006; Yan & Lin, 2005). Parents with higher education levels typically have higher expectations and appreciation toward their children's intellectual development and academic achievement. They often accompany their children doing homework or school assignment, give compliments to their learning initiatives, take them to bookshops, provide more learning resources and hire private tutors to enrich their children's learning.

Parental involvement can be more effective if the schools engage all parents (not only some of them) and provide information to guide choice regarding tutoring and other home learning activities (Epstein, 2010; Sheldon & Epstein, 2005). A study of a sample of Asian-American students reported by Hong and Ho (2005) found that parental involvement in general affects students' academic achievement. Parents' concern toward their children's learning raises students' motivation to improve their achievement. Other studies have also explored parental involvement in students' learning (see for example Epstein, 2010; Goodall & Montgomery, 2014; Hassan & Al-Jubari, 2016; Rabahi, Yusof, & Awang, 2015). These studies confirm previous findings by Hong and Ho (2005), but also indicate that parental involvement may differ across cultures and societies.

This may apply to the Indonesian context. The Indonesian society is composed of people from 370 ethnic and linguistic groups across 17,508 islands (Lan, 2011; Rachmawati, Pai, & Chen, 2014). This plurality maybe reflected as well in the diversity of perspectives on education. Whether there are identifiable and meaningful patterns of the interaction between parental involvement, parents' education levels, and students' academic achievement across this diversity would need to be empirically tested.

This study focuses on mathematics because it is widely regarded as a core subject in the curriculum (Retnowati & Aqilah, 2017). Mathematics is nationally tested across at the primary and secondary levels of education (Kusaeri, 2018). It is also an important part of the university selection test in Indonesia. Therefore, parents in Indonesia are often more concerned about their children's learning in mathematics compared to other subjects.

Studies in mathematics education have explored the interaction between parental involvement and achievement, but the findings have been inconsistent. A meta-analysis study by Patall, Cooper, and Robinson (2008), for example, found that there is a negative correlation between parental involvement and students' mathematics achievement. This is different from McDonnell, Cavanaugh, and Giesen's (2012) study that found a positive correlation between elementary students' mathematics achievement and parental involvement. They also found that the higher the

students' education level, the correlation between parental involvement and students' mathematics achievement become weaker.

These diverging findings provide a rationale for a more comprehensive study on the topic. Also, to the best of the authors' knowledge, previous studies on parental involvement and mathematics achievement in Indonesia were conducted on relatively small and narrow samples. In addition, those previous studies have not investigated intermediate variables which may play a role in explaining the correlation between parental involvement and students' mathematics achievement.

One of the mediator variables that may play a role in students' mathematics achievement is parents' education level. The quality of parental involvement in their children's learning is likely to be influenced by parents' education level (Kiadarbandsari et al., 2016). Parents who have studied in college can be assumed to have better mastery of subject matters taught at primary and secondary schools, compared to parents with only primary and secondary education. Parents with college degrees also tend to have broader knowledge of good learning strategies at school. In line with this, parents with higher education also tend to be more confident in guiding their children in learning.

Based on the above background and rationales, this study aims to examine: (1) the relationship between parents' education level as an indicator of SES and students' mathematics achievement, and (2) the interaction between parents' education level and the intensity of parental involvement in predicting students' mathematics achievement.

METHODS

Study Area

This study involved samples from 34 provinces in Indonesia: Aceh, Bali, Bangka Belitung, Banten, Bengkulu, Gorontalo, Jakarta, Jambi, West Java, Central Java, East Java, West Kalimantan, South Kalimantan, East Kalimantan, Central Kalimantan, North Kalimantan, Riau Islands, Lampung, Maluku, North Maluku, West Nusa Tenggara, East Nusa Tenggara, Papua, West Papua, Riau, West Sulawesi, Sulawesi Tenggara, Central Sulawesi, South Sulawesi, North Sulawesi, West Sumatera, South Sumatera

and North Sumatera and Special Region Yogyakarta.

Research Design

This research used parallel multiple mediator model (Hayes, 2013). The model suits the objectives because this research involves two parallel mediators namely father's education level and mother's education level. The two mediators were assumed to contribute to the degree of correlation between parental involvement and students' mathematics achievement. Figure 1 presents parallel multiple mediator models used

Participants

The population of this study was all the test takers of NE in Indonesia in 2016 for the level of senior high school (SMA)/Islamic senior high school (Madrasah Aliyah/MA) and vocational high school (SMK). The total number of test takers in 2016 was 2,951,151 from 33,018 SMA/MA and 11,918 SMK (Kemendikbud RI, 2016).

Sampling Design

The sample of SMA/MA and SMK students were selected using stratified random sampling technique with a thorough consideration of the representativeness and distribution of province, gender composition, type of school (general-vocational), and school status (public-private). The provinces selected for the survey include Aceh, Bangka Belitung, Special District Yogyakarta, West Java, East Java, Kalimantan, Riau Islands, Lampung, Maluku, Papua, West Sulawesi and South Sulawesi. From these provinces, 2,867 students were then selected as the final survey sample. in this research.

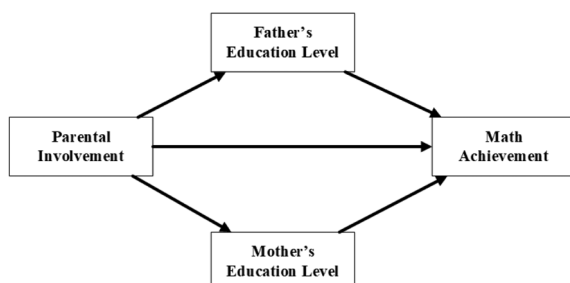


Figure 1. The Interaction among the Variables

Research Instruments

Students' mathematics achievement score was obtained from the NE 2016 results. The NE mathematics test consists of 40 multiple choice items with 5 answer options. The same test (parallel versions of the test) was used in all senior high schools throughout Indonesia. Thus, the results can be standardized and used to compare the quality of one school to the other, or one student to the other students in different districts or provinces. The data of NE scores were obtained from the Center for Educational Assessment of the Ministry of Education and Culture (Kemendikbud RI, 2016).

Parents' education level and parental involvement were based on students' self-report through a written questionnaire. Four levels of parents' education were used: not completed primary school/no schooling, graduated from secondary school, graduated from diploma/academy and graduated from bachelor/master/doctorate degree. Parental involvement in their children's learning activities was measured using 7 items, some of which related to parental assistance to children working on their homework (3 items), parents' attention to children's learning activities (3 items), and involvement in discussions about reading materials (1 item). All the seven items consistently bring the index of parental involvement with the reliability coefficient (alpha Cronbach) of 0.79. The seven items also show high degree of validity with the range of corrected item-total correlation between 0.452 to 0.594 ($M = 0.515$).

Data Analysis

Descriptive statistics (means, standard deviation, minimum and maximum score) of the sample characteristics were computed to address this research problem. The next analysis was conducted by path analysis using M-Plus version 7 (Muthén & Muthén, 1998-2015) which is capable of handling ordinal and interval data. Because, data on mathematics achievement and intensity of parental involvement are interval, while data on father's and mother's education level are ordinal. Path analysis was utilized to measure the interaction between parents' education level and the intensity of parental involvement in predicting students' mathematics achievement.

FINDINGS AND DISCUSSION

Findings

Sample Characteristics

There were 2,867 students in the sample, consisting of 1,239 (43.2%) male and 1,628 (56.8%) female students. In terms of the school, 50% students were from SMA and the rest were from SMK with 61.8% were from public schools and 38.2% were from private schools. The distribution of the sample in each province was Aceh (1.6%), Bangka Belitung (9.8%), Special Region Yogyakarta (13.3%), West Java (1.6%), East Java (49.5%), Kalimantan (0.4%), Riau Islands (5.7%), Lampung (3.2%), Maluku (4.5%), Papua (6.4%), West Sulawesi (2.5%) and West Sumatera (1.5%).

The description of measurement result is presented in Table 1. Table 1 presents the descriptive statistics based on the overall subjects of the research, categorized into male and female subjects. Table 2 further provides preliminary information on the zero correlation (product moment correlations) among research variables. The students' mathematics achievement significantly correlates to parental involvement ($p < 0.01$), fathers' education ($p < 0.01$), and mother's education ($p < 0.01$). Among the three variables (parental involvement, father's

education and mother's education), parental involvement variable has small correlation (0.048). The low correlation between parental involvement and students' mathematics achievement can be further confirmed in Table 4. This invites further inquiry about why parental involvement has little contribution to students' mathematics achievement

Based on the above brief description of the data and to further understand the factors that have contributed to students' mathematics achievement, each of the following sub-sections presents discussion on factors contributing to students' achievement.

Discussion

Parents' Education Level and Students' Mathematics Achievement

Parents' education level is one of the main indicators of SES, a variable that is closely related to students' learning achievement. From the data it was found that there are significant interactions between parental involvement and father's education level to mathematics achievement. It means that the higher the level of father's education is, the higher the students' mathematics achievement is. This fact is consistent with a number findings of previous

Table 1. Descriptive Statistics of the Variables

Variable	Min	Max	Means	S.D.
Male ($N = 1,239$)				
Mathematics Score	7.5	100	48.8	23.42
Parental Involvement	7	21	14.05	2.87
Father's Education	1	4	2.11	0.91
Mother's Education	1	4	1.95	0.84
Female ($N = 1,628$)				
Mathematics Score	5	100	52.0	22.81
Parental Involvement	7	21	14.15	2.82
Father's Education	1	4	2.03	0.90
Mother's Education	1	4	1.91	0.82
Total ($N = 2,867$)				
Mathematics Score	5	100	50.62	23.12
Parental Involvement	7	21	14.15	2.84
Father's Education	1	4	2.07	0.91
Mother's Education	1	4	1.93	0.83

Table 2. Means, Standard Deviations, and Correlation Among Variables

Variables	Means	S.D.	1	2	3	4
1. Mathematics Score	50.62	23.12	1			
2. Parental Involvement	14.15	2.84	0.048*	1		
3. Father's Education	2.07	0.91	0.129*	0.143*	1	
4. Mother's Education	1.93	0.83	0.167*	0.145*	0.595*	1

* $p < 0.01$

studies such as those conducted by Kim et al. (2003), Blanden and Gregg (2004), Ferguson, Bovaird, and Mueller (2007) and Duncan and Murnane (2011).

The significant different levels of father's education are between the groups of students whose fathers did not complete primary school/did not go to school and those with higher levels of education; and between students whose parents were undergraduate/post graduate and those from lower levels. This is indicated by the average of students' mathematics learning achievement of each father's education group as presented in Figure 2.

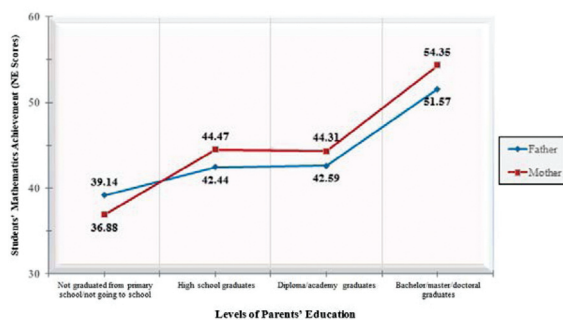


Figure 2. The Differences of Average in Mathematics Achievement across Students from Different Groups of Parents' Education Level

Fathers with high education level tend to have better jobs (Chevalier, Harmon, O'Sullivan, & Walker, 2013). Good jobs bring the implication of better income that can better support family needs, including the support for children's learning and education. This condition has an impact on fathers' ability to provide sufficient learning facilities for their children to have good learning activities. Good learning activities trigger students' learning achievement.

Fathers with higher education level also commonly invest their time to have a discussion with their children regarding what the children do and the problem they face during their day at school. This, according to Takeuchi (2018), can positively motivates students to achieve better at school. This father's indirect involvement potentially brings stronger influence toward students' mathematics achievement compared to father's direct involvement such as helping children to solve some mathematical problems (Cao et al., 2006). This finding is line with Soni and Kumari (2017) statement that the support

and motivation a father gives to his children bring positive correlation toward the children mathematics achievement.

The similar pattern is also found in the relationship between students' mathematics achievement and their mothers' education level. Students whose mothers have higher education also have better mathematics achievement. The difference of students' mathematics achievement based on mothers' education level is bigger compared to the difference based on fathers' education level. In other words, mothers' education level appears to have more roles in students' mathematics achievement in high schools in Indonesia.

Logically, a child first socializes with his/her mother, from birth until s/he goes to school. In Indonesian context, the main responsibility of a mother is to raise and educate her children (Cholifah, Degeng, & Utaya, 2016). Therefore, the mother can really determine the direction of the children's education, including children's learning activities. Compared to father, mother has more dominant and intensive communication and involvement with the children in their everyday lives. The education level of a mother can influence the way she educates the children. Therefore, a mother with lower level of education may not be able to create conducive learning atmosphere for her children. According to McNeal (2015), the involvement of mother in students' learning can influence the children's attitude and behavior which in turn affect children's learning achievement.

A mother with high education level can induce the values of education (such as self-discipline and good learning and study habit) as the core values to the children (Hymes, 1972). Self-discipline in learning does not form by itself instantly but it is developed through a long process, needs to be nurtured continuously from an early age. A mother plays a central role in this process. The stronger the discipline and the more regular the learning activities are (not only at school but also at home), the higher the students' learning achievement is.

The result of path analysis also shows that mother's education level has a bigger contribution to students' mathematics achievement compared to the contribution of father's education. The data show that the path coefficient of students' mathematics achievement is 0.145 measured

from mother's education and 0.044 from father's education. Combined with the result of analysis of mathematics achievement average, the result of this path analysis signifies the big role of mother's education in developing students' learning achievement, particularly in learning mathematics.

The dominant influence of mother's involvement toward children's mathematics achievement seems to be influenced by the family values in Indonesian cultural context. The *patriarchal* culture in Indonesia (particularly in Java) is still sustained although it may not be as strong as it is in the past. In the *patriarchal* culture, a father is the leader in the family, taking the responsibility as the bread winner, while a mother should invest more time with children and is responsible for caring and educating the children (Putri & Lestari, 2015). This condition builds a closer relationship between children and their mother compared to their father. Soni and Kumari (2017) state that a child who has a close relationship with his mother will have a positive perception. The level of closeness becomes the indicator of children's positive development and plays a role in developing children's ability in mathematics.

The Interaction of Parental Involvement and Parents' Education Level toward Students' Mathematics Achievement

The initial description indicates that the variable of parental involvement has a small effect correlation on mathematics achievement. Data from path coefficient (α) of both variables

are 0.022 with $p = 0.245$. This means that parental involvement does not directly affect students' mathematics achievement. Table 3 also shows that although parental involvement is related to father's education ($p < 0.01$) and mother's education ($p < 0.01$), the value is relatively small. These two almost identical data in corroboration inform that there is a relationship between parents' education level and parental involvement and students' mathematics achievement although the relationship is indirect. Mother's education level, although it is small in scale, has a higher contribution to parental involvement compared to father's education level.

Table 3 highlights that the three variables (parental involvement, mother's education and father's education) have positive regression coefficient of 0.048, 0.129 and 0.167 consecutively. To further explore the interaction between parental involvement and parents' education level, path analysis was used to place the variable of parents' education level (both father and mother) as the mediator. The result of the analysis shows that (a) in the indirect path of parental involvement mediated by father's education, its interaction with students' mathematics achievement is not significant ($\alpha = 0.006$ and $p = 0.06 > 0.05$); and (b) in the indirect path of parental involvement mediated by mother's, there is a significant interaction with students' mathematics achievement ($\alpha = 0.020$ and $p = 0.00 < 0.01$).

Table 4 shows the effect of father's education level and mother's education level toward students' mathematics achievement.

Table 3. Multiple Regression Results

Outcome	Predictor	Regression coefficients (S.E)	Path coefficients (S.E)
Mathematics Score	Parental Involvement	0.048**(0.152)	0.022 (0.019)
	Father's Education	0.129**(0.473)	0.045 (0.023)
	Mother's Education	0.167**(0.513)	0.138** (0.023)
Father's Education	Parental Involvement	0.143** (0.006)	0.143** (0.018)
Mother's Education	Parental Involvement	0.145** (0.005)	0.145** (0.018)

* $p < 0.05$, ** $p < 0.01$

Table 4. Direct and Indirect Effects of Parental Involvement towards Students' Mathematics Score

Path	Effect(S.E)
Parental Involvement → Mathematics Score	0.022 (0.019)
Parental Involvement → Father's Education → Mathematics Score	0.006 (0.003)
Parental Involvement → Mother's Education → Mathematics Score	0.020** (0.004)
Total	0.049* (0.019)

Moderator: *Father's Education and Mother's Education*

* $p < 0.05$ ** $p < 0.01$

The data show that mother's involvement in the process of the children's mathematics learning brings stronger effect toward children's mathematics achievement compared to father's involvement. The results show that mothers' involvement in children's learning and their education level affect the children's mathematics achievement. These results are consistent with Hymes' (1972) and McNeal' (2015) findings that mothers' involvement greatly influences children's attitudes and behaviors. Mothers who have a higher education level will always monitor and direct their children to regularly study and do the tasks well. These attitudes and habits will indirectly affect the children's learning achievement. Mothers' with higher education level tend to have an authoritative involvement in educating their children (Grolnick, 2016).

Further analysis on the nature of parental involvement found a different pattern between one form of involvement from the other toward the achievement of learning mathematics. It was done by comparing the mathematics achievement between groups of students on each item of involvement, such as discussing the reading, asking what the children learn, helping the children to do the school tasks, asking the children about the school events, and checking and reminding the children about their homework.

In the first form of involvement, students whose parents discuss their reading every day have mathematics achievement with five points higher than students whose parents have never done so. Activities of discussing reading at a moderate level (indicated by 'sometimes' option in the questionnaire), also have a positive impact on students' mathematics achievement, a drift of about 3 points compared to the points of students whose parents never do such activities.

Parents who want to be engaged and often discuss about the subject matters with their children commonly have the knowledge related to the material being discussed Takeuchi (2018). In addition, the frequency of discussion about subject matters other matters between the parents and the children indicates the harmonious communication within the family. With the provision of harmonious communication, parents can know the difficulties of their children so as to lead their children to achieve better in their learning.

In contrast, high involvement (marked by a statement of 'every day' in the questionnaire) in some forms of involvement is in fact associated with a low achievement. For example, students who are assisted by their parents in doing their school tasks everyday tend to have lower learning achievement (about 4 points) than other students. Students whose parents regularly ask about what is learned at school also tend to have lower mathematics achievement (about 5 points) than those whose parents only occasionally check. In addition, students whose parents ask questions about what is happening at schools everyday tend to get a lower mathematics achievement (about 2 points lower) than students whose parents never do.

The above issue happens because parents who continually want to be involved in providing assistance to their children cause the lack of independence in children. It can also cause the children to feel depressed and unable to freely express and expend all the potentials they have to support the attainment of optimal learning achievement. What the children need is involvement within a reasonable threshold, such as by providing direction and role models to the children about the importance of learning, and by always building a harmonious relationship within the family. Thus, this can create a comfortable home atmosphere for children. Such atmosphere can encourage the children to be more enthusiastic in learning.

Another form of involvement is checking homework. Even the moderate-level involvement has a negative impact on students' mathematics achievement. Students whose parents sometimes or daily check the homework have a lower mathematics achievement than those whose parents never do the checking. On the other hand, parents who constantly remind their children to do homework also negatively affect their children's mathematics achievement. Students whose parents remind them to do homework each day has 4 points lower in their mathematics achievement compared students whose parents never give such a reminder (Clinton & Hattie, 2013).

Overall, the role of parental involvement in children's learning activities does not support the initial predictions. In some indicators, parental involvement is linked to students' lower mathematics achievement. It is indicated that too

intense involvement even brings a bad impact on students' mathematics achievement. Why does this pattern happen? There are at least two possible explanations for this situation.

First, the pattern may reflect a lack of parents' ability to facilitate high-school-age children's learning activities. Therefore, the way parents help with the assignments, check the homework, and pay attention to learning activities are not effective and even bring bad effect if these are done too often. Second, parental involvement reflects their perception about their children's abilities. Parents who feel their children are not ready for the exam will be urged to motivate and remind their children, check their children's homework and help them with the assignments (Kompas, 2011; Sugito, 1994). This behavior appears as a form of parents' anxiety in seeing their children's lack of readiness for the exam.

It is possible that students whose parents are engaged intensively are students who have low readiness and/or low ability to face a test like the NE. However, because parents do not have sufficient ability to help, their involvement is ineffective or even negative. This emphasizes the importance of parents' knowledge and education in assisting their children and engaging in the learning activities (Wilder, 2014).

CONCLUSION

Corroborating previous studies, the findings of this study highlight the importance of parents' education level for students' academic achievement. More specifically, this study indicates that mothers' education level has a more central position in students' mathematics achievement, more so than fathers' education level. Furthermore, the relations between mother's involvement and students' achievement was found to be mediated by mothers' level of education, further underscoring the important role of mothers' education level. Additional analysis suggests that some forms of parental involvement are more beneficial than others, and that the relationship between parental involvement and achievement may not be linear.

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TRANSFORMATIVE EDUCATION AS A DIALECTIC OF INDONESIAN CULTURE AND MODERN CULTURE

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Abstract: Indonesia has being an independent state more than 73 year, but it is not yet a modern state. It is due to a lack of continuity between Indonesian culture (in the forms of local cultures and religions) and modern culture. National culture, in the form of Pancasila state, is not similar to the original Indonesian culture as it is a mix of Indonesian culture and modern culture. This article is to elaborate transformative education which will synergize Indonesian culture and modern culture. This article is a kind of qualitative research, using observation and literature study methods. It focuses on the immaterial aspects of culture, namely supra-structure of both Indonesian culture and the modern one. Curriculum 2013 Revised that discards religious skills from all subjects, except Religious Education and Civic Education, reflects that government has not yet formulated clearly the national education system. National education should be transformative that enables to synergize the Indonesian culture to the modern one.

Keywords: *Indonesian culture, modern culture, religious skills, Pancasila.*

PENDIDIKAN TRANSFORMATIF SEBAGAI DIALEKTIKA KEBUDAYAAN ASLI DENGAN KEBUDAYAAN MODERN

Abstrak: Setelah merdeka lebih 73 tahun, Indonesia masih belum menjadi negara modern. Hal itu terjadi karena adanya kesenjangan antara kebudayaan lama dengan kebudayaan modern. Kebudayaan nasional dalam bentuk kebudayaan Pancasila tidak sepenuhnya merupakan kelanjutan kebudayaan asli sehingga Indonesia harus melakukan transformasi budaya. Artikel ini akan membahas pendidikan transformatif, yang akan mendialektikkan kebudayaan asli dengan kebudayaan modern. Artikel ini merupakan hasil penelitian kualitatif, yang dilakukan dengan metode observasi dan studi pustaka. Penelitian ditekankan pada aspek immaterial (suprastruktur), yang menjadi fondasi bagi struktur kebudayaan, baik dalam kebudayaan Indonesia maupun kebudayaan modern. Pendidikan transformatif merupakan pendidikan yang mampu mensinergikan suprastruktur kebudayaan asli (kebudayaan daerah dan agama) dengan suprasturktur kebudayaan modern. Aspek suprastruktur kebudayaan asli tercermin dalam sila ke-1 yang bersifat religius, sedangkan aspek suprastruktur kebudayaan modern tercermin dalam sila ke-2, 3, 4, dan 5 yang sifatnya rasional. Kedua karakteristik ilmu itu harus menyatu dalam materi pelajaran yang diajarkan di sekolah, yang tercermin dalam *religious skills*.

Kata kunci: *kebudayaan asli, kebudayaan modern, religious skills, Pancasila.*

PENDAHULUAN

Setelah merdeka lebih 73 tahun, suatu kurun waktu yang sudah cukup lama, Indonesia belum menjadi sebuah negara yang modern, yang 40 % Pendapatan Domestik Bruto berasal dari sektor industri dan sekarang ini, Indonesia baru memiliki PDB sektor industri sebesar 18% (Bappenas, 2018:42). Hal itu terjadi karena Indonesia mengalami kendala dalam melakukan transformasi budaya yang memungkinkan bagi keberhasilan proses modernisasi. Yang saya maksudkan dengan kebudayaan di sini adalah

kebudayaan dalam arti luas, bukan hanya sekedar kesenian, namun keseluruhan elemen dalam suatu peradaban. Menurut Koentjaraningrat ada 7 elemen kebudayaan, yaitu sistem religi, sistem pengetahuan, sistem bahasa, sistem kesenian, sistem sosial, sistem ekonomi, dan sistem teknologi (Koentjaraningrat, 1988).

Indonesia mengalami kendala transformasi ketujuh elemen kebudayaan menuju negara modern. Memang tingkat hambatan transformasi dalam ketujuh elemen itu tidak sama. Untuk keperluan analisis, saya mengklasifikasikan ele-

men kebudayaan menjadi dua. Kedua elemen pertama dinamakan aspek immaterial kebudayaan dan lima elemen selanjutnya dinamakan aspek material kebudayaan. Aspek immaterial memiliki peranan penting bagi keberhasilan transformasi dalam aspek material kebudayaan. (Jameson, 2002: 77). Aspek immaterial kebudayaan, sebagai inti dari suatu kebudayaan, dan dikenal dengan istilah supra-struktur dalam analisis Marxisme merupakan fondasi bagi bangunan struktur material kebudayaan, di samping berfungsi memberi makna atau nilai terhadap kehidupan (Selva, Domenech, Gash, 2017:1-3).

Kebudayaan nasional dalam bentuk kebudayaan Pancasila tidak sepenuhnya merupakan kelanjutan dari kebudayaan asli Indonesia. Kebudayaan Pancasila merupakan perpaduan kebudayaan asli (kebudayaan daerah dan agama, khususnya Islam) dengan kebudayaan modern. Dalam pengertian ini, kebudayaan asli tercermin dalam sila ke-1 Pancasila, yang merupakan aspek supra-struktur dari kebudayaan nasional yang akan dibangun. Sila ke-2, 3, 4, dan 5 Pancasila merupakan cerminan kebudayaan modern, sebagai pengembangan pengetahuan yang didasarkan pada akal. Dengan demikian, bentuk negara Pancasila bersifat semi sekuler karena agama (sila ke-1) memiliki peran dalam sektor publik, walaupun dalam bentuk nilai-nilai universal. Jelas hal ini berbeda dengan peradaban Barat yang meminggirkan agama ke dalam sektor privat. Sebagai konsekuensinya, hubungan agama (khususnya Islam) dengan negara bersifat saling memberi legitimasi (Rochmat, 2014). Atas dasar itu, Acac (2015) menilai secara tepat bahwa Pancasila merupakan bentuk modern dari penerapan Syari'ah.

Indonesia sudah mengadopsi kemajuan peradaban Barat dalam kelima aspek material kebudayaan, namun sampai saat ini Indonesia belum berhasil menjadi negara modern. Hal itu terjadi karena aspek immaterial kebudayaan asli (kebudayaan daerah dan agama) belum memberikan justifikasi terhadap kebudayaan modern sehingga rakyat belum menerima kebudayaan modern secara tulus (Selva, Domenech, and Gash, 2017:3). Untuk keperluan itu, pendidikan transformatif memiliki peranan penting bagi upaya menjembatani kebudayaan asli dengan kebudayaan modern. Pendidikan transformatif mengajarkan materi pendidikan modern yang

dimaknai dari sudut pandang supra-struktur kebudayaan asli Indonesia. Dengan kalimat lain, faktor immaterial kebudayaan asli memberikan justifikasi terhadap kebudayaan modern (Jameson, 2002:77).

Indonesia belum menjadi negara modern juga disebabkan Indonesia mengambil kebudayaan modern setengah hati. Indonesia cenderung mengadopsi aspek material dari kebudayaan Barat dan mengabaikan aspek immaterial kebudayaan Barat yang menjadi landasan dan juga konteks bagi produk kebudayaan Barat. Kebudayaan Barat menekankan pada akal sebagai alat untuk mencapai kebenaran dan karenanya mengembangkan prinsip rasionalitas, prinsip *checks and balances* (saling kontrol), yang akan melahirkan keseimbangan dalam masyarakat (Ladenburg, 2007:46). Dengan demikian, pengetahuan kita tentang aspek material kebudayaan Barat tidak diimbangi oleh aspek immaterial kebudayaan Barat yang menjadi konteks bagi produk material kebudayaan Barat.

Sebenarnya waktu 50 tahun merupakan suatu waktu yang cukup untuk menjadi negara maju bila suatu negara melakukan modernisasi sesuai dengan landasan budayanya dan juga prinsip-prinsip immaterial kebudayaan Barat. Dalam hal ini landasan filosofis yang operasional memiliki peranan menentukan dalam proses modernisasi. Contoh, Otto von Bismarck berhasil menyatukan German pada tahun 1871 dan kemudian pada tahun 1911 berani mengobarkan Perang Dunia I dan sekaligus menjadi negara paling maju di Eropa daratan. Contoh lainnya adalah Jepang yang memodernisasi negaranya sejak Restorasi Meiji tahun 1868 dan pada tahun 1904 Jepang berhasil mengalahkan negara kulit putih Rusia. Contoh lainnya lagi adalah Amerika Serikat yang mengikrarkan politik luar negeri *outward looking* pada tahun 1896, menjadi negara super power pada tahun 1945.

Memang Indonesia bukan satu-satunya negara yang gagal menjadi negara maju dalam waktu yang cukup lama. Negara-negara yang mayoritas penduduknya Muslim juga gagal mengantarkan negaranya menjadi suatu negara yang maju. Brunei Darussalam dan Arab Saudi memiliki pendapatan per kapita yang sangat tinggi, namun mereka mendapatkannya dari hasil sumber daya alam (SDA) dan bukan dari hasil pengembangan teknologi modern. Nampaknya negara-negara yang mayoritas penduduknya

Muslim memiliki kendala *social capital* (modal sosial) dalam mewujudkan sebuah negara yang modern. Contoh modal sosial seperti demokrasi, toleransi, tolong-menolong, budaya antri, Hak Asasi Manusia (HAM) dan lain-lain (Foroutan, 2013:1-2). Modal sosial (*social capital*) sangat penting bagi terwujudnya solidaritas sosial (*solidarity*), yang memungkinkan berbagai kekuatan sosial-politik yang ada untuk berkompetisi secara fair. Muslim cenderung menekankan pada penerapan ajaran-ajaran dalam Rukun Iman dan Rukun Islam, yang merupakan jenis ibadah ritual (ibadah *mahdlah*) dan kurang mengembangkan ajaran-ajaran sosial dalam Islam, yang dikategorikan sebagai Rukun Sosial (Rochmat, 2014:326). Padahal, ajaran-ajaran sosial dalam Islam sangat banyak sekali dan justru ajaran-ajaran sosial inilah yang menghandarkan negara-negara menjadi negara industri.

METODE

Artikel ini merupakan hasil penelitian kualitatif, yang fokusnya lebih pada interpretasi terhadap data agar didapatkan penjelasan yang mendalam terhadap suatu fenomena yang diamati. Adapun fenomena yang diteliti berkaitan dengan proses modernisasi di Indonesia yang mengalami hambatan. Data diperoleh dari studi pustaka dan observasi terhadap proses modernisasi di Indonesia. Data yang diamati baik berupa data kuantitatif maupun data kualitatif. Data diperoleh dari berbagai sumber, seperti website, buku, dokumen, dan observasi. Data memegang peranan penting bagi pemahaman penulis terhadap konteks yang menjadi landasan bagi proses modernisasi itu. Sebenarnya kebudayaan merupakan konteks yang menentukan sukses tidaknya proses modernisasi, baik unsur kebudayaan yang berwujud material maupun yang berujud immaterial. Kesuksesan proses modernisasi ditentukan oleh sejauhmana ada kontinuitas dari kebudayaan lama ke kebudayaan modern. Kontinuitas ini berkaitan dengan proses transformasi, yang mana pendidikan memiliki peranan penting. Dengan begitu artikel ini menitikberatkan pada transformasi aspek immaterial kebudayaan, khususnya keterkaitan kebudayaan Indonesia lama dengan kebudayaan modern dan keterkaitan pendidikan Indonesia lama dengan pendidikan modern.

HASIL DAN PEMBAHASAN

Hasil

Indonesia belum menjadi negara modern setelah merdeka 73 tahun karena modernisasi belum benar-benar dilakukan selaras dengan aspek supra-struktur kebudayaan asli Indonesia. Memang kebudayaan nasional, dalam bentuk kebudayaan Pancasila, tidak sepenuhnya kelanjutan dari kebudayaan asli. Kebudayaan Pancasila merupakan campuran kebudayaan asli dengan kebudayaan modern. Kebudayaan asli tercermin dalam sila ke-1 Pancasila, yaitu Ketuhanan Yang Maha Esa. Kebudayaan asli ini mewakili kebudayaan daerah dan agama, khususnya Islam; sedangkan kebudayaan modern tercermin dalam sila ke-2, 3, 4, dan 5. Sila ke-1, sebagai aspek supra-struktur, hendaknya dijadikan landasan dalam memahami sila-sila yang lain. Di sini lain, pembangunan struktur peradaban modern harus juga didasarkan pada pemahaman yang benar terhadap aspek immaterial peradaban modern. Dengan demikian, agen-agen perubahan sosial harus memahami aspek immaterial, baik dalam kebudayaan asli maupun kebudayaan modern (Connor, 2009: 3).

Pemahaman supra-struktur sebagai inti dari suatu kebudayaan dapat merevisi pandangan yang sudah umum bahwa kebudayaan merupakan sistem simbol dan makna. Ada benarnya juga pemahaman kebudayaan sebagai sistem simbol dan makna karena produk kebudayaan, yang tercermin dalam kelima aspek material budaya, memiliki karakteristik yang berbeda dari suatu kebudayaan ke kebudayaan lainnya, yang tentunya memiliki makna tersendiri. Memang adakalanya suatu kebudayaan memiliki simbol tersendiri dengan makna tersendiri pula. Akan tetapi, adakalanya suatu simbol bersifat universal, sehingga bisa menjadi daya perekat antar beberapa kebudayaan. Adakalanya juga simbol yang sama diberi makna berbeda karena masing-masing kebudayaan memiliki aspek immaterial (sistem religi dan sistem pengetahuan) yang berbeda. Hal ini sejalan dengan konsep *thick culture* yang diperkenalkan oleh Geertz (1973: 3-10) dan *thick and thin culture* oleh Waltzer (1994: 1-20). Yang dimaksud dengan *thick culture* adalah kebudayaan yang lebih dekat dengan individu dan dalam hal ini agama bisa dikatakan sebagai representasi dari *thick culture*. Di sisi lain, *thin culture* merupakan kebudayaan yang diperkenalkan kepada individu belakangan, seperti kebudayaan

nasional (Pancasila). Dengan begitu, individu bisa memiliki multi-identitas: dia bisa menjadi seorang yang religius dan sekaligus Pancasilais.

1. Pendidikan Transformatif sebagai sinergi aspek supra-struktur kebudayaan asli dan kebudayaan modern

Pendidikan transformatif belum terjadi seperti yang diharapkan karena tidak banyak agen modernisasi yang memahami aspek supra-struktur dari kebudayaan asli maupun kebudayaan modern. Hal itu nampak dalam dikotomi sistem pendidikan, yaitu Kementerian Pendidikan dan Kebudayaan dan Kementerian Agama. Masing-masing mengembangkan sistem pendidikan yang berbeda. Yang pertama mengembangkan pendidikan modern, yang menekankan pengembangan ketrampilan yang bersumber dari akal. Yang kedua mengembangkan pendidikan agama, yang lebih menekankan pengembangan ketrampilan religius. Memang kedua kementerian sudah mengarahkan terciptanya sistem pendidikan Pancasilais, yang mengembangkan baik ketrampilan berpikir maupun ketrampilan religius. Hal itu nampak dalam kebijakan yang memberikan mata pelajaran agama di sekolah nasional dan sebaliknya kebijakan memberikan mata pelajaran umum (ilmu sekuler) di sekolah yang dikelola oleh Kementerian Agama.

Pendidikan transformatif merupakan bentuk pendidikan yang bisa mensinergikan aspek supra-struktur baik kebudayaan asli maupun kebudayaan modern dalam setiap materi pelajaran. Sila ke-1, yang merupakan aspek imaterial (supra-struktur) kebudayaan asli, hendaknya menjiwai sila-sila yang lain. Sila ke-1 merupakan pencerminan unsur religi dan sistem pengetahuan, sebagaimana dipahami Koentjaraningrat (1988) dalam kategori tujuh elemen kebudayaan. Adapun sila ke-2, 3, 4, dan 5 sebagai produk dari kebudayaan modern harus dipahami dalam konteks supra-struktur kebudayaan modern. Oleh karena itu, pelembagaan supra-struktur kebudayaan modern, baik dalam aspek sistem sosial, termasuk sistem politiknya; sistem ekonomi, sistem bahasa, sistem kesenian, dan sistem teknologi tidak boleh dilepaskan dari prinsip-prinsip seperti rasionalitas, keseimbangan (*checks and balances*), efisiensi, transparan.

2. *Religious Skills* sebagai dialektika Ilmu Religius dengan Ilmu Modern

Pendidikan memiliki peranan penting dalam proses transformasi kebudayaan asli ke kebudayaan modern. Akan tetapi, materi pendidikan di Indonesia belum sepenuhnya bersifat transformatif. Dua kutub ekstrim mata pelajaran, Pendidikan Agama di satu pihak dan Pendidikan Pancasila dan Kewarganegaraan di pihak lain, sepertinya berjalan sendiri-sendiri. Pendidikan agama, khususnya Islam, cenderung mengajarkan aspek identitas agama, seperti tercermin dalam Rukun Iman dan Rukun Islam. Pendidikan Agama kurang menaruh perhatian pada aspek universal agama, seperti tercermin dalam *social capital* (Rukun Sosial). Aspek universal agama ini merupakan fondasi yang membangun kebudayaan modern. Hal itu terjadi karena guru agama kurang memahami ilmu-ilmu modern. Di lain pihak, guru Pendidikan Pancasila dan Kewarganegaraan yang terdidik di sekolah umum, tidak memahami ilmu-ilmu religius. Oleh karena itu, mereka dalam mengajarkan materi pelajaran tidak mengaitkan dengan keyakinan agama siswa. Akibat lebih lanjut, siswa mempelajari ilmu-ilmu modern dengan tidak sepenuh keyakinan.

Pembahasan

1. Pancasila sebagai Dialektika Kebudayaan Indonesia dengan Kebudayaan Modern

Masalah kebudayaan nasional tidak menjadi kendala bagi Jepang dan karenanya Jepang berhasil memodernisasi negerinya secara cepat. Jepang punya komitmen yang kuat terhadap keyakinannya bahwa pendidikan merupakan kunci bagi kemajuan suatu bangsa. Jepang tidak menghadapi ketegangan yang berarti antara kebudayaan asli yang fokusnya pada agama dengan kebudayaan modern yang salah satunya dimanifestasikan dalam bentuk nasionalisme. Hal ini nampak dalam kontinuitas sistem penyelenggaraan pendidikan, yang melanjutkan sistem pendidikan yang sudah ada dan tetap diselenggarakan oleh para pemuka agama. Jadi ada kelanjutan antara sistem pendidikan tradisional dengan sistem pendidikan modern. Pemerintah yang berkuasa tidak mengembangkan sistem pendidikan tersendiri. Justru pemerintah membantu mengembangkan sistem pendidikan tradisional yang sudah ada. Mengingat adanya kontinuitas antara tradisi dan modernisasi, guru

tidak jarang menyuruh muridnya mengunjungi tempat-tempat ibadah agama Shinto dalam upaya menanamkan semangat nasionalisme.

Bila dibandingkan dengan Jepang, modernisasi Indonesia berjalan lambat karena kita belum berhasil merumuskan kebudayaan nasional yang operasional (Galanter, 1965: 133). Sebenarnya Indonesia sudah merumuskan Pancasila sebagai landasan bagi kebudayaan nasional, namun Pancasila belum sepenuhnya operasional dalam semua aspek kehidupan, baik dalam sistem pendidikan, sistem sosial kemasyarakatan, sistem politik, sistem kebudayaan, sistem ekonomi, dan lain-lain. Hal itu karena Pancasila tidak sepenuhnya kelanjutan kebudayaan asli, namun juga merupakan bentuk adopsi kebudayaan modern. Hal itu dilakukan karena Pancasila merupakan hasil kompromi antar berbagai kekuatan sosial politik yang ada, baik yang berasal dari pendukung kebudayaan Indonesia maupun pendukung kebudayaan modern.

Pancasila merupakan hasil dialektika kebudayaan asli Indonesia (termasuk agama) dengan kebudayaan modern. Sila ke-1 mencerminkan kebudayaan asli Indonesia, sedangkan sila ke-2, ke-3, ke-4, dan ke-5 merupakan manifestasi dari kebudayaan Barat. Sila ke-2 sampai ke-5 bisa dikatakan sebagai ilmu duniawi (ilmu sekuler), yang didasarkan pada akal manusia, sedangkan sila ke-1 sebagai ilmu yang bersifat *religious* karena didasarkan pada keyakinan manusia yang bersumber dari hati. Dengan kata lain, agama hendaknya dijadikan petunjuk dalam kehidupan duniawi (sekuler), termasuk dalam kehidupan publik di Indonesia (Selva, Domenech, Gash, 2017: 3-4).

Pancasila tidak mengadopsi teori sekulerisasi Barat secara murni, selaras dengan konteks rakyat Indonesia yang bersifat religius. Agama merupakan aspek immaterial kebudayaan Indonesia yang akan memberi makna terhadap aspek material kebudayaan. Peran agama sangat penting karena memberi justifikasi atau legitimasi terhadap aspek material kebudayaan. Akan tetapi, agama sebagai suatu aturan jangan sampai dipolitisasi (agama digunakan sebagai alat politik), karena sejalan dengan prinsip “wasit tidak boleh ikut main dalam pertandingan”. Memang agama memiliki peranan dalam sektor publik, tidak seperti di kebudayaan Barat yang meminggirkan peran agama ke ranah privat semata, namun peran agama dalam bentuk nilai-

nilai universal, bukan dalam karakternya yang primordial (Acac, 2015).

Kebudayaan nasional memiliki peranan krusial dalam modernisasi karena merupakan konteks berlangsungnya proses modernisasi, namun kebudayaan nasional kita, Pancasila, belum mantap. Hal itu karena Pancasila merupakan hasil kompromi berbagai kekuatan sosial-politik, termasuk kelompok agama. Untuk itu, berbagai kekuatan sosial politik itu harus terus mengembangkan dialog agar paradigma Pancasila bisa operasional dalam kehidupan berbangsa dan bernegara. Berikut penilaian kritis Barnet (1995: vii) terhadap modernisasi di dunia ketiga.

The main problems in the Third World are not, by and large, the absence of technical specialists –countries such as India and Pakistan have these aplenty; ... The main problems are *sociological and political problems, the contexts within which apparently “technical” decision are taken* [garis miring merupakan penekanan penulis].

Masalah kebudayaan nasional nampak jelas dalam sejarah modern bangsa Indonesia, bahkan sampai sekarang ini. Hal ini nampak dalam dualisme sistem pendidikan, yaitu Departemen Pendidikan dan Kebudayaan, yang mengelola ilmu sekuler dan Departemen Agama yang mengelola ilmu keagamaan. Kedua departemen mengembangkan dua sistem pengetahuan yang berbeda, yaitu *modern system of knowledge* (dari kebudayaan Barat) dengan *religious system of knowledge* (dari kebudayaan Indonesia). Hal itu terjadi karena elit politik yang memerintah tidak bisa mentransformasikan *religious system of knowledge* dengan *modern system of knowledge* (Burhani, 2017: 330).

Mayoritas elit politik merupakan produk kebudayaan Barat dan mereka berasal dari golongan *priyayi* (golongan elit tradisional) yang juga telah mencari legitimasi dari Islam. Dalam kenyataannya, kelas priyayi ini kurang berhasil mentransformasikan Islam dengan kebudayaan asli Indonesia, sehingga mereka pun tidak bisa mentransformasikan Islam dengan kebudayaan modern. Penjajah Belanda pun tidak pernah berusaha mentransformasikan kebudayaan (kebudayaan Islam) dengan kebudayaan Barat. Mereka berusaha melakukan pendekatan asimilasi kebudayaan lokal dengan kebudayaan Barat,

yang sekaligus akan memisahkan kelas priyayi dengan kelompok santri (Muslim) (Burhani, 2017: 334).

Mengingat mayoritas elit yang memerintah tidak belajar di lembaga pendidikan tradisional (yang berlandaskan *religious system of knowledge*), mereka tidak bisa melakukan transformasi sistem pendidikan tradisional ke dalam sistem pendidikan modern. Mereka lalu mengembangkan sistem pendidikan nasional tersendiri, yang berbeda dengan sistem pendidikan di pesantren. Memang kemudian ada usaha untuk saling mendekatkan *religious system of knowledge* dengan *modern system of knowledge* dengan cara memberikan pelajaran agama di sekolah umum dan sebaliknya memberikan pelajaran umum di sekolah agama. Apakah kita perlu melebur kedua kementerian itu menjadi satu kementerian saja bila kedua pendekatan itu sudah bisa menyatu? Yang penting bukan peleburan kedua kementerian itu, tetapi kedua kementerian memiliki visi dan misi yang sama untuk menyatukan sistem pengetahuan religius dengan sistem pengetahuan duniawi. Penyatuan kedua kementerian itu bisa melahirkan sikap otoriter karena pejabat yang memerintah menjadi memiliki kekuasaan dan kewenangan yang sangat besar, sehingga hilang prinsip *checks and balances*, sebagai salah satu ciri aspek immaterial kebudayaan modern (Laver and Shepsle, 1994: 294).

Bila aspek immaterial (khususnya agama) sudah selaras dengan aspek material dari kebudayaan modern, kita akan bisa melakukan modernisasi secara cepat. Selama ini Muslim melakukan modernisasi dengan setengah hati karena aktivitas yang dilakukan dalam sektor publik seringkali tidak didasarkan pada keyakinan agamanya. Hal itu terjadi karena pendidikan agama cenderung hanya mengajarkan ajaran-ajaran yang termasuk ibadah khusus (*mahdlah*), belum dikaitkan dengan ajaran-ajaran sosial yang sifatnya umum. Dalam hal ini, Muslim cenderung menjalankan ajaran-ajaran yang tercantum dalam Rukun Iman dan Rukun Islam saja, dan belum ditransformasikan dengan ajaran-ajaran sosial (Rukun Sosial), seperti yang tercantum dalam sila ke-2, ke-3, ke-4, dan ke-5. Akibatnya, mereka mengalami krisis moral dalam kehidupan di sektor publik, yang nampak dalam merebaknya praktek Korupsi, Kolusi, dan Nepotisme (KKN) di negeri Muslim terbesar

di dunia (Noy, 2017: 39-41). Penyakit KKN ini disinyalir terjadi karena kita sedang mengalami *split identity* (kepribadian terbelah) karena aspek immaterial (agama) belum bisa menjelaskan aspek material kehidupan publik, seperti kemanusiaan, nasionalisme, demokrasi dan keadilan.

Berdasarkan uraian di atas, kebudayaan nasional merupakan faktor kunci bagi keberhasilan pembangunan suatu bangsa. Kebudayaan nasional merupakan identitas bangsa yang digali dari khasanah budaya bangsa. Yang menjadi masalah, Indonesia sebagai suatu negara bangsa (*nation state*) adalah suatu yang baru, yang secara legal baru diproklamasikan 17 Agustus 1945. Tidak mudah mewujudkan suatu budaya nasional, hal itu memerlukan proses panjang melalui serangkaian komunikasi timbal balik demi terciptanya solidaritas sosial dan akan menghasilkan kesadaran bersama (*conscience collective*). Kesadaran bersama merupakan moralitas suatu bangsa dan hal itulah yang menjadi pedoman bagi semua komponen bangsa dalam berinteraksi satu dengan lainnya. Bila kesadaran bersama sudah berhasil dirumuskan secara operasional, semua komponen bangsa dapat berpartisipasi secara aktif dalam pembangunan (Bellah, 1973: ix).

Sejalan dengan konsep negara modern yang memisahkan kepemimpinan politik dari kepemimpinan agama, tokoh agama (terutama ulama) berperan sebagai elemen *civil society*, yang bertugas melakukan *checks and balances* terhadap negara. Dalam konteks negara Pancasila, peran *civil society* tidak terbatas pada sektor privat, seperti di Barat yang mengadopsi teori sekularisasi murni. Tokoh agama bisa memainkan peran di sektor publik, namun mereka hanya memperjuangkan nilai-nilai universal seperti yang tercantum dalam sila ke-2, ke-3, ke-4, dan ke-5. Dengan demikian, agama tidak mendesak nilai-nilai agama yang sifatnya khusus.

Tidak mudah mewujudkan peran publik agama karena hal ini berkaitan dengan transformasi aspek immaterial (terutama agama) ke dalam kebudayaan modern, baik aspek material maupun immaterialnya. Bila aspek immaterial (terutama agama) belum memberikan justifikasi aktivitas sektor publik, umat beragama akan mengalami kesulitan dalam mengembangkan dialog di antar umat beragama, baik dari kalangan intern umat maupun antar umat beragama. Dialog hendaknya diarahkan untuk merealisasi-

kan nilai-nilai universal seperti yang tercantum dalam Pancasila. Memang Pancasila memiliki keterbatasan, karena sifatnya sebagai suatu kontrak sosial, sehingga perlu bantuan dari agama maupun budaya lokal dalam mengelaborasikannya secara operasional di masyarakat. Memang agama dan budaya dimaksudkan sebagai sumber nilai! Sedangkan Pancasila sebagai kontrak sosial lebih merupakan suatu kompromi, yang tentunya akan dimaknai sesuai dengan keyakinan masing-masing berdasarkan agama atau budaya yang dianutnya (Abdullah, 2001: 7).

Umat beragama jangan bersaing menguasai alat-alat negara demi mendesak ajaran-ajaran khusus agamanya di sektor publik. Penguasaan alat-alat negara oleh suatu kelompok umat beragama tidak mendukung terciptanya negara modern yang demokratis karena urusan politik masuk dalam birokrasi. Bila suatu unit atau instansi birokrasi dikuasai oleh kelompok tertentu, sistem seleksi dan rekrutmen pegawai seringkali mengabaikan prinsip merit.

Ada kelompok-kelompok intern umat beragama (baik dari kalangan Islam, Kristen, Hindu, Budha, dan lain-lain) yang bersaing mendapatkan kedekatan dengan rezim untuk melindungi kepentingan kelompoknya dan menghalangi kepentingan kelompok lainnya. Seharusnya mereka tidak menganggap praktek keagamaan dari kelompok lain sebagai menyimpang dan menganggap praktek keagamaannya sebagai satu-satunya yang paling benar. Hal itu jelas bertentangan dengan prinsip negara modern yang mengakui kelompok-kelompok umat beragama sebagai suatu denominasi dan karenanya mereka harus mengembangkan prinsip toleransi. Hal ini juga bertentangan dengan semangat agama sebagai *rahmatan lil 'alamin* (rahmat bagi kemanusiaan).

Pemerintah harus membantu pemberdayaan ormas beragama sebagai elemen *civil society*, apalagi negara Pancasila bukanlah negara sekuler (Acac, 2015: 60-61). Berdasarkan teori politik modern, pemerintah tidak hanya mengembangkan sentralisasi kekuasaan, tetapi juga harus menciptakan mekanisme *checks and balances* demi tegaknya demokrasi. Dengan demikian antara umat beragama dengan pemerintah saling mengembangkan legitimasi timbal balik (*a mutual legitimacy*) demi tegaknya prinsip *syuro* (demokrasi) dan terciptanya kesejahteraan dan keadilan (Laver and Shepsle, 1994: 294).

Selama ini pemerintah belum sepenuhnya membantu umat beragama agar berperan aktif sebagai bagian dari *civil society*. Ada dua kemungkinan kenapa hal ini terjadi. Pertama, pemerintah ingin mempertahankan kepentingan politiknya. Untuk itu penguasa bisa memainkan politik *divide et impera* terhadap berbagai kelompok umat beragama. Konsekuensinya, pemerintah yang tidak demokratis bisa tetap bertahan karena adanya kecurigaan sesama umat beragama sehingga kelompok nasionalis maupun non-Muslim cenderung membela penguasa. Kedua, pemerintah khawatir terhadap proses suksesi karena kebudayaan nasional masih belum kokoh. Pemerintah merasakan adanya sebagian umat beragama yang ingin melakukan dominasi dalam kehidupan berbangsa dan bernegara.

Sampai sekarang masih ada kendala bagi semua komponen bangsa berpartisipasi aktif dalam pembangunan karena mereka belum merumuskan landasan filosofis yang operasional. Hal ini berdampak pada kehidupan politik nasional yang labil karena Pancasila ditafsirkan sesuai dengan kepentingan ideologisnya masing-masing. Sebenarnya perbedaan pandangan politik tidak menjadi masalah andaikata semua kelompok sosial politik tidak bersifat ideologis dan bersedia menerapkan prinsip *take and give*. Kebenaran hendaknya dirumuskan bersama oleh semua komponen bangsa dalam bentuk tindakan bersama yang bermanfaat bagi kemanusiaan. Bukankah konsep kebaikan memiliki ciri-ciri obyektif yang bisa diterima dengan akal sehat.

2. *Religious Skills* sebagai dialektika Ilmu Barat (Sekuler) dengan Ilmu Agama

Pada tahun 2017 pemerintah merevisi Kurikulum 2013 dan pemerintah menghilangkan *religious skill* dalam semua mata pelajaran di sekolah, kecuali untuk Pendidikan Agama. Dihapusnya *religious skill* dalam kegiatan belajar mengajar di kelas dapat dipahami bila dalam prakteknya guru hanya mengajak peserta didik berdoa ketika memulai dan mengakhiri pelajaran. Bentuk *religious skill* yang seperti ini jelas tidak memiliki dampak yang fundamental dalam dunia pendidikan. Bukankah dalam KTSP 2006 dan kurikulum-kurikulum sebelumnya guru juga selalu memulai dan mengakhiri pelajaran dengan berdoa. Yang dimaksud dengan *religious skills* adalah kemampuan mengaitkan materi pelajaran dengan nilai-nilai agama yang dianut oleh siswa.

Hal ini mutlak diperlukan karena apa yang dilakukan dalam kehidupan sehari-hari harus memiliki landasan yang kuat menghujam dalam keyakinan agamanya. Implikasinya, siswa akan menjalani kehidupan sehari-hari berdasarkan keyakinan agama, sehingga semua kegiatan yang dilakukannya diharapkan akan membuahkan hasil yang maksimal. Dengan begitu, dihapusnya *religious skills* merupakan indikasi Indonesia belum memiliki paradigma sistem pendidikan yang jelas.

Sejalan dengan kebudayaan nasional, sistem pendidikan Indonesia harus berlandaskan pada Pancasila. Paradigma Pancasila bukan paradigma sekuler yang hanya menekankan pada peranan akal dalam pendidikan. Paradigma Pancasila bersifat *religious skills*, sebagaimana sila ke-1 Pancasila adalah Ketuhanan Yang Maha Esa. Itulah sebabnya Acac (2015) menulis artikel yang berjudul '*Pancasila: a contemporary application of Maqasid al-Syari'ah*' (2015). Bukankah sila pertama itu menjiwai sila-sila yang lain? Hal ini berarti agama merupakan suatu paradigma untuk menjalankan Pancasila dalam kehidupan berbangsa dan bernegara. Hal ini juga berarti kaca mata agama senantiasa dipakai ketika kita mempelajari ilmu duniawi, yang sering diberi label ilmu modern atau ilmu sekuler. Sebagai konsekuensinya, pelaksanaan sila ke-2, ke-3, ke-4, dan ke-5 harus dipandu oleh sila ke-1.

Paradigma Pancasila sejalan dengan paradigma agama (dalam hal ini Islam) yang tidak membedakan ilmu agama dengan ilmu duniawi karena semua ilmu harus diabdikan bagi kepentingan Allah, yang berarti berguna bagi kemanusiaan. Ilmu menyatu dengan amal. Ilmu agama berfungsi untuk mengarahkan ilmu duniawi, yang sangat diperlukan dalam kehidupan di duniawi, agar tidak menjadi bencana bagi kemanusiaan; bukankah membela Allah identik dengan membela kemanusiaan? (Acac, 2015: 70). Dalam hal ini slogan Albert Einstein "ilmu tanpa agama buta dan agama tanpa ilmu lumpuh" menemukan relevansinya. Kemanusiaan merupakan faktor obyektif yang bisa menyatukan ilmu sekuler dengan ilmu religius, dalam artian sebagai peperangan abadi antara kekuatan Tuhan dengan kekuatan setan (Mul Khan, 2001: 20).

Ada kaitan erat antara ilmu (duniawi/sekuler) yang berdasarkan akal dengan ilmu agama yang berdasarkan hati sehingga pendidikan harus bisa mengaitkan keduanya itu.

Ilmu sekuler mengajarkan kita berpikir logis, sistematis, kritis, kritis, analisis, dan evaluatif (Widyastuti, 2018: 183). Pada tahap evaluatif kita bisa mengaitkan ilmu sekuler dengan ilmu agama dalam rangka memberi makna pada pengetahuan. Dengan demikian, penghapusan *religious skills* dalam Kurikulum 2013 Revisi terhadap semua mata pelajaran, kecuali mata pelajaran Pendidikan Agama dan mata pelajaran Pendidikan Pancasila dan Kewarganegaraan, merupakan suatu kesalahan. Memang Kurikulum 2013 tetap mempertahankan ketrampilan religius dan ketrampilan sosial dalam Kompetensi Inti-nya, namun guru tidak mengembangkannya dalam perangkat pembelajaran. Hal itu dilakukan dengan pertimbangan untuk mengurangi beban tugas guru. Hal itu jelas suatu kontradiksi. Sebenarnya, guru tidak harus membuat perangkat pembelajaran yang mendetail dari pembuatan RPP sampai pelaksanaan Evaluasi. Yang paling inti dari proses penanaman nilai-nilai religius dan sosial ada pada materi pembelajaran.

Bila buku pelajaran sudah disusun berdasarkan pertimbangan nilai-nilai religius dan sosial, guru tidak perlu menyusun lagi materi pembelajaran. Dengan demikian, pemerintah perlu memastikan buku pelajaran sudah mengembangkan pengetahuan akal dan hati sekaligus. Pendekatan integratif dalam Kurikulum 2013 pra-Revisi sudah benar, namun hal itu belum dibarengi dengan buku paket dari mata-mata pelajaran yang mampu mengintegrasikan ilmu duniawi dengan ilmu agama.

Adanya kewajiban guru mencantumkan Kompetensi Inti berkaitan dengan ketrampilan religius dan sosial di dalam RPP menunjukkan bahwa guru masih diberi tugas untuk mendidik *religious skills* dan *social skills*. Dalam kegiatan belajar mengajar, guru membuka pelajaran dengan berdoa dan juga mendidik nilai-nilai ketrampilan religius dan sosial lainnya. Guru juga menyampaikan nilai-nilai tersebut ketika melakukan refleksi pada bagian penutup. Sebenarnya apa makna refleksi itu? Mengingat belum jelasnya panduan melakukan refleksi, guru seringkali hanya mengutip kata-kata mutiara yang seringkali tidak ada kaitannya dengan materi pelajaran yang diajarkan. Seharusnya refleksi merupakan suatu usaha untuk mengkaitkan ilmu duniawi itu dengan agama yang menjadi sumber nilai.

Religious skills tidak hanya menjadi beban Pendidikan Agama karena hal itu tidak hanya didapatkan dari pendidikan agama, apalagi pendidikan agama cenderung hanya mengajarkan materi ibadah mahdlah. *Religious skills* tidak bisa dikuasai siswa bila Pendidikan Agama hanya fokus pengajaran Rukun Iman dan Rukun Islam. *Religious skills* hanya akan didapatkan bila materi agama dikaitkan dengan ajaran-ajaran sosial (Rukun Sosial), sehingga siswa bisa menjalani kehidupan sehari-hari secara religius. Bukankah ketrampilan religius tidak hanya ketika mereka melakukan ritual ibadah? Jadi, *religious skills* diperlukan selama 24 jam sehari. Untuk itu pendidikan agama harus diintegrasikan dengan ilmu duniawi. Dengan kata lain, semua materi pelajaran harus dikaitkan dengan keyakinan agama. Untuk itu Pendidikan Agama tidak hanya bersifat normatif, tetapi bersifat kontekstual dengan sistem sosial kemasyarakatan dan ekonomi, termasuk sistem politik. Jadi, guru agama hendaknya mengaitkan ilmu agama dengan ilmu duniawi, yang tercermin dalam Rukun Sosial. Dengan begitu, pendidikan agama mengembangkan pendekatan sosio-kultural, yaitu pendekatan yang mengkaitkan aspek normatif dengan konteks bagi penerapan nilai-nilai agama. Idealnya, baik Kementerian Pendidikan Nasional dan Kementerian Agama berperan dalam mengharmoniskan pengetahuan agama dan pengetahuan duniawi. (Abdullah, 2001: 7).

Memang Al-Qur'an hanya satu, namun pemahaman terhadapnya tidaklah monolitik karena konteks bagi diterapkannya ajaran-ajaran dan nilai-nilai Islam itu berbeda. Perbedaan konteks harus diketahui siapa saja yang hendak menerapkan Islam dalam kehidupan karena hal itu mengindikasikan adanya perbedaan sistem kebudayaan, termasuk sistem sosial maupun sistem politik. Perbedaan konteks memang harus dipahami dan Allah menyuruh Nabi Muhammad SAW melalui ayat pertamanya *iqra* (Bacalah!). Ingat, Nabi Muhammad SAW merupakan seorang Nabi yang *ummi* (tidak dapat membaca). Apa maknanya? Nabi disuruh membaca konteks yang akan digunakan untuk menerapkan ajaran-ajaran Islam. Implikasinya, dalam suatu agama, misalnya Islam, bisa muncul berbagai kelompok yang mengembangkan tradisi keagamaan yang berbeda.

Adanya bermacam-macam tradisi keagamaan menunjukkan adanya berbagai *systems*

of knowledge dan fakta bahwa tidak ada kebenaran tunggal dalam urusan agama. Bahkan, dalam ilmu pengetahuan duniawi juga tidak ada kebenaran tunggal karena adanya berbagai macam paradigma yang mengembangkan pendekatan berbeda-beda terhadap suatu obyek ilmu. Implikasinya, '*knowledge is not identical to the truth, but it has commitment with the truth*' (Saunders, 2004: 164). Mengingat banyak sistem pengetahuan, kita jangan menggunakan pendekatan ideologis dalam kehidupan, yang cenderung melihat kebenaran dari salah satu sudut pandang paradigma (Wahid, 1997: 79-82). Pendekatan ideologis akhirnya melahirkan kebenaran formal berdasarkan sudut pandang tertentu, sehingga kebenaran itu tidak bisa diterima oleh mereka yang mengembangkan paradigma yang berbeda atau pun mereka yang mengembangkan tradisi pemikiran yang berbeda. Bila hal itu dipaksakan, konflik antar-paradigma atau antar-tradisi tidak dapat dihindari. Yang umum terjadi, masing-masing paradigma tidak mau mengembangkan prinsip 'memberi dan menerima' (*give and take*), yang berguna bagi upaya pencarian kebenaran bersama.

Kompromi berdasarkan pendekatan akal tidak mudah dilakukan karena salah satu sifat dari akal adalah tidak mau rugi. Hal itu karena akal menghasilkan kebenaran yang bersifat material. Akibatnya, tidak jarang akal digunakan secara tidak sewajarnya, seperti memanipulasi (*ngakal-ngakali*) kebenaran demi terpenuhinya kebutuhan material tertentu. Untuk keperluan itu, para pendukung pendekatan ideologis berkedok pada aturan-aturan formal sebagai alat untuk meyakinkan pihak lain dan pada saat yang bersamaan, mereka menyembunyikan kebenaran yang hakiki demi. Oleh karena itu, mereka cenderung mengembangkan cara-cara kompromi atau negosiasi untuk mempertahankan keuntungan material yang mungkin didapatkannya (Wahid, 1997: 80-82).

Pendekatan ideologis ini sangat mengagungkan peranan akal untuk memecahkan berbagai problem kehidupan. Dalam kenyataannya, ilmu dan teknologi modern tidak dapat mengatasi semua problem kehidupan dan tidak sedikit ilmu dan teknologi memiliki dampak negatif pada suatu masyarakat. Untuk itu, peran akal perlu dilengkapi dengan peran hati dalam usahanya mencari kebenaran. Dengan pertimbangan hati, manusia akan mengembangkan kehidupan

yang berprinsip pada konsep harmoni karena dia tidak menonjolkan prinsip menangnya sendiri. Dia akan mempertimbangkan hak dan kewajiban pihak lain dalam kehidupan bersama. Dia pun mau memberikan kompensasi bila pihak lain dirugikan. Bahkan, dia bisa membantu pihak lain melakukan transformasi dalam rangka mewujudkan kehidupan yang lebih baik (Wahid, 1997: 79-82).

Pengikut ideologi yang berbeda-beda seringkali berperang satu dengan yang lainnya karena mereka tidak mengembangkan konsep kebenaran dalam konteks timbal balik (*relationship*). Seperti sudah saya jelaskan di atas bahwa tidak ada kebenaran absolut di dunia ini karena hal ini berkaitan dengan kompleksnya kehidupan yang senantiasa berubah dengan berjalannya waktu dan konteks ruang yang plural. Dalam kenyataannya, kebenaran seringkali tersembunyi dalam fenomena kultural tertentu karena aspek normatif terkait erat dengan peristiwa kultural tertentu. Dengan kata lain, eksistensi kebenaran itu tidak tergantung begitu saja pada pemikiran individu saja, tetapi terkait juga dengan sistem sosial dan budayanya. Implikasinya, konsepsi kebenaran individual harus dinegosiasikan dengan masyarakat sebagai konteksnya (Wahid, 2001: 147-148). Dalam kehidupan, Al-Qur'an melarang kita mengklaim kebenaran sepihak dan memerintahkan kita mengembangkan prinsip koeksistensi antar berbagai kelompok yang berbeda-beda: "Untukmu agamamu dan untukku agamaku (the Qur'an 109:6) (Al-Hillali dan Khan, 2007: 853). Maknanya, masing-masing kelompok dapat meyakini kebenarannya secara absolut karena hakikat kebenaran absolut itu menghendaki sikap introspeksi kedalam dan tidak menuntut pengakuan pihak luar yang tidak meyakinkannya (Mufid, 2010: 73-74).

Kebenaran akal bukan satu-satunya realitas kehidupan, karena ada realitas kehidupan lain yang perlu diperhitungkan, yaitu perasaan ketidakpastian dan kehampaan (*the feeling of uncertainty and of emptiness*). Perasaan tersebut akan mempertajam perasaan kemanusiaan, sehingga dia mau mengalah demi mendapatkan realitas lain yang berada di luar dunia ini. Hal ini akan mengarahkan manusia kepada kesadaran akan Tuhan, satu-satunya yang pasti dan mutlak (*the only certain and absolute entity*). Implikasinya, pendekatan hati dapat meredam konflik antar sesama manusia yang biasanya dipicu oleh

rebutan realitas material di dunia ini (Wahid, 1997: 79-82).

SIMPULAN

Indonesia belum bisa menjadi negara modern, padahal sudah merdeka 71 tahun. Jepang, Jerman, dan Amerika bisa menjadi negara maju dalam waktu yang singkat, karena mereka sudah memiliki budaya nasional. Indonesia memiliki kendala dalam mewujudkan kebudayaan nasional karena kebudayaan nasional dalam bentuk Pancasila tidak sepenuhnya kontinuitas dari kebudayaan asli. Sila ke-2, 3, 4, dan 5 diadopsi dari kebudayaan modern, sehingga kita perlu pendidikan transformatif. Memang tidak mudah mensinergikan kebudayaan asli yang religius dengan kebudayaan Barat yang rasional. Hal itu menuntut kemampuan memahami aspek immaterial kebudayaan asli dan sekaligus kebudayaan modern. Akan tetapi, bila pendidikan transformatif ini berhasil, Indonesia bisa menjadi modern dalam waktu cepat dan sekaligus bisa mengatasi krisis peradaban modern.

Penghapusan *religious skill* dalam Kurikulum Revisi 2013 tidak memiliki landasan filosofis yang kuat karena Pancasila mengamanatkan kepada kita bahwa sila ke-1, Ketuhanan Yang Maha Esa, hendaknya menjiwai sila-sila yang lain. Hal ini berarti bahwa kita hendaknya mengembangkan paradigma yang religius. Mengingat Indonesia tidak menganut model negara sekuler murni, negara harus mendapatkan legitimasi dari agama. Nilai-nilai agama mengarahkan jalannya kehidupan berbangsa dan bernegara. Implikasinya, ilmu sekuler harus dipandang berdasarkan sudut pandang agama yang menekankan pada hati sebagai alat untuk mendapatkan kebenaran. Sejalan dengan itu, materi pendidikan hendaknya bisa menghasilkan *religious skills*. Hal ini sejalan dengan keyakinan Albert Einstein bahwa "ilmu tanpa agama buta, sedangkan agama tanpa ilmu itu lumpuh" (Dawkins, 2003: 61).

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INDONESIAN AUTHORS WRITING THEIR DISCUSSION SECTIONS BOTH IN ENGLISH AND INDONESIAN RESEARCH ARTICLES

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Abstract: The study aims to investigate how Indonesian authors write their English and Indonesian research article (RA) discussion sections. There were 7 Indonesian authors who write 1 English research article and 1 Indonesian research article published in national accredited journals. The study executed rhetorical moves designed by Swales (1990) to be used here as the instrument. In general, the findings show that 7 Indonesian authors operate not too different rhetorical patterns of English and Indonesian RA discussion sections viewed from moves occurrences, completeness, and order of the move structures. Nearly all 7 Indonesian authors show 5 moves in the English RA discussion section consisting of statement of the results-(un)expected outcome-reference to previous research-explanation-deduction and hypothesis. They use 6 moves in the Indonesian RA discussion section consisting of statement of the results-(un)expected outcome-reference to previous research-explanation-exemplification-deduction and hypothesis. However, each author has his/her specific move structure seen from the moves order and moves frequency. The specific uses of move structure are explained with examples in the forms of sentences or phrases. Thus, the authors are in the position of having their rhetorical patterns suited the context and communities.

Keywords: *Indonesian authors, research articles (RA), discussion sections, rhetorical patterns*

PILIHAN POLA RETORIKA PENULIS INDONESIA DALAM MENULIS BAGIAN PEMBAHASAN ARTIKEL PENELITIAN BERBAHASA INGGRIS DAN BERBAHASA INDONESIA

Abstrak: Penelitian ini bertujuan untuk meneliti bagaimana penulis Indonesia menulis bagian pembahasan artikel penelitian berbahasa Inggris dan berbahasa Indonesia. Data diperoleh dari 7 penulis Indonesia yang pernah menulis dan mempublikasi 1 artikel penelitian berbahasa Inggris dan 1 artikel penelitian berbahasa Indonesia di jurnal ilmiah terakreditasi nasional. Penelitian ini menggunakan pola retorika (*moves*) yang dikembangkan oleh Swales (1990) sebagai instrumen untuk menganalisis bagian pembahasan artikel penelitian. Secara umum, hasil penelitian menunjukkan bahwa ketujuh penulis Indonesia memilih pola retorika yang tidak terlalu berbeda pada bagian pembahasan yang berbahasa Inggris dan berbahasa Indonesia, dilihat dari frekuensi kemunculan *moves*, kelengkapan *moves*, dan urutan *moves*-nya. Sebagian besar penulis memilih 5 *moves* pada bagian pembahasan yang berbahasa Inggris, yaitu *statement of the results-(un)expected outcome-reference to previous research-explanation-deduction and hypothesis*. Bagian pembahasan yang berbahasa Indonesia memiliki 6 *moves*, yaitu *statement of the results-(un)expected outcome-reference to previous research-explanation-exemplification-deduction and hypothesis*. Walaupun begitu, setiap penulis memiliki pilihan *moves* tertentu dari segi urutan *moves* dan frekuensi kemunculannya. Dapat disimpulkan bahwa penulis-penulis Indonesia tersebut memilih pola retorikanya disesuaikan dengan konteks dan komunitas pembaca artikel penelitian di jurnal ilmiah yang mereka pilih.

Kata Kunci: *Penulis Indonesia, artikel penelitian (RA), bagian pembahasan, pola retorika*

INTRODUCTION

During last decade, there are many studies to examine the people's writing seen from particular patterns that are popularly called

genre (for example Kaplan, 1966; Swales, 1990; Mirahayuni, 2002; Susilo, 2004; Kuntjara, 2004; Basthomi, 2006; Tseng, 2011; Ozmen, 2016). Accordingly, the present study is investigating

how Indonesian authors write discussion sections, both in English and Indonesian research articles. Both English and Indonesian discussion sections of research articles are written by the same Indonesian authors. Author's choices of rhetorical pattern in their writing can be consciously or unconsciously chosen during the time; their writing might be influenced by their cultural, geographical, and linguistic backgrounds. Further, it continues to explore and dig deeply some information supporting the existing rhetoric. The discussion sections of research articles are mostly taken from accredited journals that are published in Indonesia.

The study of contrastive rhetoric has been aimed at not only finding the rhetorical patterns but also identifying the problems faced by L2 learners. As stated by Connor (1996), the research in L2 acquisition identify problems in the composition encountered by the L2 learners related to the L1's rhetorical strategies. Having seen from its prior study done by Kaplan, 1966 to recent time, the contrastive rhetoric developed significantly, in terms of focusing the subject of the study. Further, the contrastive rhetoric studies, then, are classified in four domains of investigation: (1) contrastive text linguistic studies; (2) studies of writing as cultural and educational activity; (3) classroom-based contrastive studies; (4) genre-specific investigation (Connor, 2002). The studies reviewed in accordance with the above classification are purposefully chosen in terms of recent publication and investigation.

Various studies came up to fill the gaps of contrastive rhetoric area in terms of investigating different product of writing or text types (genre-specific investigation), changing the subject of the study into the professional writers such as article writers of local and international journals, post-graduate students and many more. Firstly, Susilo (1999) reported the Indonesian writers who write their articles in *The Jakarta Post* tend to formulate their thesis statement in four ways: inductive pattern, deductive pattern, mid-position and unclearly stated thesis statement. Again, Susilo (2004) investigated thought patterns as reflected in the linguistic features of either English or Indonesian letters written by Indonesians and he found that rhetorical organization developed and organized in Indonesian and English letters were similar in three ways: completely tripartite-structure-constructions, two-element-tripartite

structure constructions, and one-element-tripartite structure constructions. Whereas, Chakorn (2002) reported that native speakers may also employ distinctive writing patterns in letters revealing diversity in some rhetorical moves, linguistic realizations, rhetorical appeals and politeness strategies. Further, the area of rhetoric studies have gradually shifted from classroom-based investigating the students' academic writing with specific modes of writing, to genre-specific investigating letters and news articles, which are more contextual ones.

Some studies in rhetoric and genre analysis come up in the surface to flourish the variances. In relation to the RA investigation, there are three popular sections studied, namely abstract, introduction, and discussion. RA introduction and discussion are two challenging sections since both of them require writers to organize their thoughts and ideas comparing with others. These two sections of RA however, are considered problematic. Although some journals provide specific requirement of publishing RA, the ones thought patterns cannot be controlled and may be different from one another. Introduction sections are placed in the beginning to deliver researcher's ideas, beliefs, reasons and reviewing the previous studies in the form of background of the study. Thus, most introduction sections start by stating the general information to the specific one.

On the contrary, discussion section usually starts recapitulating the results, which are the specific ones, next organizing into the general information one. Therefore, it is extremely necessary to conduct more detail investigation that it is in the (contrastive) rhetoric field and not many investigations on the rhetoric of discussion sections are conducted. In Indonesian context, Mirahayuni (2002) investigated generic structure of English Research Articles focusing on Introduction and Discussion sections written by English (Native) and Indonesian (Non Native) writers, which may contribute to their acceptance for international publication. Another idea was done by Al-Qathani (2006) that compared the rhetoric patterns of English and Arabian RA Introduction by inserting educational background as another variable. Purposefully, Basthomi (2006) and Safnil (2013) investigated the rhetoric of English RA Introductions taking from accredited Indonesian journals that obviously written by Indonesian writers and

looked for the reasons behind the existing of the rhetoric. In terms of rhetoric analysis, Swales' IMRD structure and CARS model (1990) were still relevant to be utilized by these previous researchers.

In accordance with previous studies, the interesting part comes up that investigating English and Indonesian RA discussion sections written by different authors certainly shows the differences and similarities of rhetorical patterns of RA discussion sections, because of some reasons namely; every author has different backgrounds such as educational and linguistic backgrounds, she/he is from different country; native or non-native, and she/he may use the writing style required by the selected journals. Having investigated deeper on the rhetorical patterns, we investigate how Indonesian authors write their English and Indonesian RA discussion sections in an attempt to describe the differences and similarities of rhetorical patterns of RA discussion sections. The differences and similarities found can be as a result of the way the authors using the language, since they write using different languages and having particular patterns.

METHODS

The study was conducted by utilizing content analysis in the area part of qualitative research, since we investigated the rhetorical patterns of English and Indonesian RA discussion sections written by the same Indonesian authors. The source of data consisted of 7 Indonesian authors who have published 1 English RA and 1 Indonesian RA in Indonesian journals. Some reasonable criteria of selecting research articles published in the Indonesian journals were namely (1) The articles were written in English and Indonesian by the same Indonesian authors individually, not in team; (2) The articles were published in Indonesian journals, accredited by Directorate General of Higher Education (DIKTI), as one of indications of qualified and consistent journals; (3) The articles were published in the field of Language and Language Teaching, in which we earned our formal educations;

The data were collected by documenting English and Indonesian RA discussion sections. We focused on Indonesian authors who wrote both English and Indonesian RAs. After getting the relevant data, we classified RA discussion

sections on whether it was put as an independent section or combined with the result or finding sections. The RA discussion sections that were put as an independent section could directly be analyzed in the parts of rhetorical pattern or move. Meanwhile, the combined RA discussion was identified by the paragraph that began with the expression '*Based on the result above...*'.

We analyzed English and Indonesian RA discussions sections as written texts based on their moves. CARS (Create a Space for Research) model developed by Swales (1990) was executed as the instrument. It consisted of 8 moves: Move I (background information), Move II (statement of the results), Move III ((un)expected outcome), Move IV (reference to previous research), Move V (explanation), Move VI (exemplification), Move VII (deduction and hypothesis), and Move VIII (recommendation). We, then continued to display and interpret the data, for the purpose of describing the data naturally. In an effort to know what moves of the paragraphs belong, both data of English and Indonesian RA discussion sections were analyzed a sentence by a sentence. Each move may occur or be repeated many times. It was also possible that some moves did not occur at all. The arrangement of the moves both in English and Indonesian RA discussion sections was not always put orderly. Thus, we tried to find not only the order position and occurrence of the moves, but also the availability or completeness of the moves.

FINDINGS AND DISCUSSION

Findings

After having analyzed the RA discussion sections written by the same authors, 7 Indonesian authors operate not too different rhetorical patterns of English and Indonesian RA discussion sections viewed from moves occurrences, completeness, and order of the move structures. Nearly all 7 Indonesian authors show 5 moves in the English RA discussion section and 6 moves in the Indonesian RA discussion section. The moves found are Move II (statement of the results)—Move III ((un)expected outcome)—Move IV (reference to previous research)—Move V (explanation)—Move VI (exemplification)—Move VII (deduction and hypothesis). Besides the moves aforementioned before, there is one move existing only in the

Indonesia RA discussion section, namely move VI (exemplification). Move I (background information) and move VIII (recommendation) are considered absent in both English and Indonesian RA discussion sections, since the moves occur at very small number or do not occur at all. Thus, the recapitulation of moves occurrences of both English and Indonesian RA discussion sections written by Indonesian authors is in Table 1.

The recapitulation of move occurrences informs the occurrence or availability of moves in the discussion sections of English and Indonesian RAs. It also provides information about the move structures, the number of occurrences of each move, and the total number of occurrences of each move. The detail explanation of the move structure, move occurrences and the number of move occurrences is elaborated in the following.

The Rhetorical Patterns of English RA Discussion Sections

There are 7 discussion sections of English RAs written by Indonesian authors who experienced in the field of language and language teaching. As shown in table 1 above, the occurrence or the availability of moves in the English discussion sections results from the

move structures. Each occurrence of the move represents the existence sentences inside the discussion sections. When one move occurs repeatedly two or more, it means that there are also two or more sentences identified as the move.

In short, not all moves occur in the discussion sections of English RA written by Indonesian authors. Based on the data reported above, move I (Background information) and move VIII (recommendation) are rarely found in the discussion sections. The totals of occurrences of both move I and move VIII are only 3 times. It means that there are only 3 out of 7 discussion sections of English RAs having those moves.

However, the occurrences are not always found in the same discussion sections. One discussion section can only have move I (background information) or move VIII (recommendation) and it happens also to other moves. The most frequent moves among 7 discussion sections are move V (explanation) and move II (statement of results) occurring at 43 times and 37 times respectively. Further, the totals occurrences of the rest moves: move III ((un) expected outcome), move IV (reference to previous research), move VI (exemplification), and move VII (deduction and hypothesis) are 14, 22, 9, and 19 times respectively, as shown in table 1.

Table 1. The Recapitulation of Moves Occurrences of Both English and Indonesian RA Discussion Sections Written by Indonesian Authors

No.	Authors	Moves Frequency of English Discussion Sections								Remark
		Move I	Move II	Move III	Move IV	Move V	Move VI	Move VII	Move VIII	
1.	A1	-	2	1	4	5	-	2	1	Two moves are absent
2.	A2	-	6	4	1	7	3	2	-	Two moves are absent
3.	A3	1	12	3	4	9	6	1	-	One move is absent
4.	A4	1	1	-	-	2	-	2	-	Four moves are absent
5.	A5	-	5	1	4	11	-	4	1	Two moves are absent
6.	A6	1	7	2	5	5	-	7	1	One move is absent
7.	A7	-	4	2	4	5	-	2	-	Three moves are absent
Total		3	37	14	22	44	9	19	3	

No.	Authors	Moves Frequency of Indonesian Discussion Sections								Remark
		Move I	Move II	Move III	Move IV	Move V	Move VI	Move VII	Move VIII	
1.	A1	-	4	1	2	4	1	2	-	Two moves are absent
2.	A2	-	1	-	1	1	-	-	-	Five moves are absent
3.	A3	-	5	3	10	9	1	8	-	Two moves are absent
4.	A4	-	9	2	6	13	9	5	-	Two moves are absent
5.	A5	-	3	1	-	5	-	5	-	Four moves are absent
6.	A6	1	19	2	12	17	6	4	-	One move is absent
7.	A7	2	8	6	3	12	-	6	-	Two moves are absent
Total		3	49	15	34	61	17	30	-	

Although, move I (background information) is found in a very small number in the English RA discussion sections, there are some authors operating move I to begin their discussion sections. The move is characterized by the wish of the author recapitulating main points, highlighting theoretical information or reminding the reader of technical information. The phrase “the relevant interview transcript were used to” is recognized as reminding the reader of technical information. The phrase “universal metaphors refer to” is shown that the author wish to highlight theoretical information and the phrase “some important points need to” is indicated as recapitulating main points.

Both move II (statement of results) and move VII (deduction and hypothesis) are used by the 7 Indonesian authors to begin the English RA discussion sections at the field of English Language Teaching (ELT). Move II occurs more in the discussion section of English RAs that simply is recognized from the phrase “the study found” showing to begin the statement of results. The move is seen in the phrase “deserved special attention”. It implies that there will be more elaboration of the results in the next sentences or the moves. It is, then, identified as statement of results based on the findings and elaboration in advance. Thus, there are also common words to state the results indeed, such as “found, showed, indicated, and reported”.

Move VII (deduction and hypothesis) is found not only to begin, but also to end the English RA discussion sections. The move urges the author to make a claim about the generalizability of all or some of the reported results. In the discussion section of English RA, it is identified from the phrase “another possible hypothesis”. The claims are also recognized from the phrases “all findings seem to suggest” and “the findings of the study suggest”. The move is then as a reflection of the authors’ made-interpretation based on the results.

The next move occur after move II or move VII is move III ((un)expected outcome). The move contains the author’s personal comment based on the reported results, expressing either in positive or negative way. In the discussion section of English RA, it is identified from the sentence “they sometimes found peer response as...”. The sentence is recognized as the author expecting outcome occurred based on the results.

At glance, indicating move III is somehow about problematic, since the keywords can be similar to other moves. The best way to confirm is through reading the information that comes before or after it.

Move IV (reference to previous research) and move V (explanation) are indicated as two most frequent moves in the English RA discussion sections, although the sequence does not always occur respectively. Move V appears repeatedly following the other moves. The move in the discussion sections shows the explanation or elaboration of the previous sentence or move in the sentence “for them it was more convenient to learn the meaning of English words by...”. Again, the authors seem to strengthen the previous explanation of reported results.

Meanwhile, move IV (reference to previous research) contains reference for purpose of either comparing with present research or supporting the present research. In the English RA discussion sections, the move is found in the purpose for supporting present research, not comparing with the present research, as indicated from the phrases “this study thus supports the findings of previous researches...” and “in line with this...”.

Similar to move I (background information), move VI (exemplification) and move VIII (recommendation) are also considered to be absent in the English RA discussion sections, since move VI is only used by two authors at the small number of move occurrences. Move VI exhibits examples to support an explanation. Some common keywords to represent the move is “for example” or “for instance”. Move VIII is also used very rare and about complicated to be recognized in the 7 Indonesian authors’ English RA discussion sections. The sentence indicated as move VIII is not directly recommending the further research, but the message implies and suggests the ideas for further research. Thus, understanding the move is extremely based not only on the move itself, but also the previous and the coming moves.

The Rhetorical Patterns of Indonesian RA Discussion Sections

Similar to discussion sections of English RAs, there are also 7 discussion sections of Indonesian RAs reported in this part. Based on the total occurrence in table 1, there are

two moves identified absent in the discussion sections of Indonesian RAs written by the same Indonesian authors namely move I (background information) and move VIII (recommendation). The total of moves occurrences mostly occur in move V (explanation) at 61 times. The next total of move occurrences is 49 times in move II (statement of results). Meanwhile, the total of moves occurrences in move IV (reference to previous research) and move VII (deduction and hypothesis) is at 34 and 30 times respectively. The total of moves occurrences of move III ((un) expected outcome) and VI (exemplification) are 15 and 17 times. Thus, the total of occurrences of Move I (background information) is 3 times.

Most Indonesian RA discussion sections shows to begin the section by exhibiting move II (statement of results). The statement of result comes up clearer in the discussion section of Indonesian RA in the sentence: "...*menghasilkan temuan berupa alasan yang mendasari...*". ("...resulted five fundamental reasons..."). The key word showed the sentence representing the move is "*menghasilkan*" (resulted) that certainly relates to the reported results in advance.

The next move shows up following move II (statement of results) in the move structure of Indonesian RA discussion sections is move V (explanation). Move V is the most frequent appearing in the discussion sections at 61 times. The move contains explanation in the form of reasons based on the reported results. The move is recognized from the excerpt "*hal itu dikarenakan tuturan yang...*" ("It happened because speech delivered in..."). It is clearly shows that the author offers a reason related to the reported results and it is indicated as cause-effect relationship.

Move IV (reference to previous research) and move VII (deduction and hypothesis occur many times in the Indonesian RA discussion sections. Move IV is recognized similarly to the findings in the English RA discussion sections that nearly all 7 Indonesian authors provide the move in a purpose to support present study. They are not exhibiting it to compare the present study with the previous one.

Move VII (deduction and hypothesis) is identified as opening move in few Indonesian RA discussion sections. The authors operate beginning phrases "*dengan demikian*" (therefore) and "*bisa dikatakan*" (it could be

said) implied as the emphasis of the reported result. The authors also try to repeat the reported result clearer based on the author's interpretation. In addition, it is the so-called sort of claim about the generalizability of some or all of the reported results.

The rest moves existing in the move structure of Indonesian RA discussion sections are move III ((un) expected outcome and move VI (exemplification). Both moves are at the similar range of occurrences. Move III represents the author-made comment on whether the outcome is expected or not. It is found in the phrases "*cukup bagus*" (good enough) and "*masih mengalami kendala*" (faced some obstacles) that obviously show the author's expectation on the reported results.

Move VI (exemplification) is mostly found in the field of Linguistics, especially Pragmatics. The move exhibits examples to support an explanation. It shows that the author operates the keywords "*misalnya*" (such as), "*sebagai contoh*" (for example), and "*Data*" (as seen in Data). Those phrases above are necessary to support previous explanation in the discussion section of Indonesian RA.

Thus, both move I (background information) and move VIII (recommendation) are recognized absent in the Indonesia RA discussion sections. It is similarly found in the English RA discussion sections. It is, then the move structure of Indonesian RA discussion section consisting of 6 moves.

Discussion

Viewed from 7 authors reported in the findings, most authors operate move II (statement of results) to open and end either in the English and Indonesian RA discussion sections. Move VII (deduction and hypothesis) is mostly seen as an opening sentence in the English RA discussion sections. However, there are few discussion sections identified to open the discussion section with move I (background information) that occurs the least. Thus, the findings imply that nearly all Indonesian authors operated consistent opening moves of their discussion sections of both in English and Indonesian RAs.

The rhetorical patterns of discussion sections of English RAs and those of Indonesian RAs written by Indonesian authors show not too different. The rhetorical patterns of discussion

sections in English RAs contain 5 frequent moves and the rhetorical patterns of discussion sections in Indonesian RAs contain 6 frequent moves. The findings show that although the rhetorical patterns (moves) of discussion sections of both English and Indonesian RAs above occur almost at the same frequencies, they can be found not only in sequence but also in cycle. Both discussion sections of English and Indonesian RAs can be started with different order moves. There were no moves obligatory found in the discussion sections, what did emerge, was clear cyclical patterning in the writer's choice of moves (Hopkins and Dudley-Evans, 1988; Holmes, 1997; Peacock, 2002). Therefore, Indonesian authors in the findings have and operate sequence moves differently based on their choices and beliefs.

Move I (background Information) has very few occurrences that it is considered to be not occurred in the present study. It seems that Indonesian authors prefer not to repeat information stated in the previous sections. They prefer to express directly statement of what the results were about. The least occurrence of Move I (background information) is not only found in the field of Language, Applied Linguistics, Language Teaching, but also other fields such as Environmental Science, Social sciences, etcetera (Peacock, 2002; Holmes, 1997). Move I, therefore, is not considered as a part of rhetorical patterns of discussion sections of both in English and Indonesian RAs written by Indonesian authors.

Furthermore, the rhetorical patterns of discussion sections of both English and Indonesian RAs in the present study mostly start in cycle of Move II (statement of results), Move V (explanation), and Move IV (reference to previous research). They also open orderly with Move VII (deduction and hypothesis), Move II (statement of results), and Move V (explanation). These findings can be called as cyclical moves. These cyclical moves are different from the one suggested by Swales (1990), in which he claimed that the most common moves in the discussion sections of English RAs was a cycle of Move I, Move II, and Move IV, while Arsyad (2013) showed the most common moves consisting of Move I, Move II, and Move V. Thus, Move II can be considered as highly preferred move in the discussion sections of RAs.

Move VII (deduction and hypothesis) is also indicated as an opening move of discussion sections in both English and Indonesian RAs. This way of writing organization follows universal writing patterns, the so-called deductive pattern. In the present study, it was found in the field of Applied Linguistics RAs. On the contrary, Atai & Falah (2010) reported that move VII (generalizability) were not used by Persian Native Speakers who wrote Applied Linguistics RAs. However, Holmes (1997) confirmed that some moves, like Statement of Result, Generalization, and Outlining Subsequent or Parallel Developments are the most prominent. Move VII (deduction & hypothesis) containing generalization considers prominent, hence it is necessarily needed inside the discussion sections.

The next move following Move II (statement of results) and Move VII (deduction and hypothesis) in the present study is Move V (explanation). The move is found in the highest frequency, it implies that the Indonesian authors recognize it as a prominent move in writing both English and Indonesian RAs. The idea of the importance of Move V is also supported by Mirahayuni (2002) that both writer groups had a similar understanding of importance of Move V in RA writing. Later, it extremely shows that the cycle of Move II or Move VII in the present study reasonably happens and by providing Move V, the RA authors actually show their individual point of views as researchers.

Move IV (reference to previous research) is the next move found following Move V (explanation). Although the frequency of move IV is in average, Move IV is considered very important. It is similarly showed by Anwar (2010) that Indonesian authors considered Move IV existence important, although this fact is in contrast with what Mirahayuni (2002) stated that in the non-native English RAs, Move IV occurred only in 10 RAs and it shows that the writers may not consider relating their findings with previous findings. Meanwhile, Peacock (2002) proposed that Move 5 (reference to previous research) occurred in 73% (NS/NNS) and seemed to be important in Language and Linguistics. It is clearly in line with the findings of the present study.

Accordingly, Move III ((un) expected outcome) occurs in both English and Indonesian

RAs, with the least frequency. Move III mostly occurs to follow Move V (explanation) and move II (statement of results). In the findings, nearly all Indonesian authors provide ((un) expected outcome) with different degree. They tend to soften their expressions in Indonesian RAs. This finding is in line with what Mirahayuni (2002) investigated that Move III had high frequency in both the native and non-native English RAs. She added that analysis of Move III in the native and non-native English RAs raised difficulties due to the relation between functions and choices of lexicogrammatical. On the contrary, Arsyad (2013) and Anwar (2010) reported that Move III was considered absent in Indonesian RAs across disciplines, written by Indonesian authors. Thus, Mirahayuni's ideas seem to confirm the present study that Move III is not frequently chosen by the 7 Indonesian authors.

The last two moves considered to be absent are Move VI (exemplification) and Move VIII (recommendation). In the present study, Move VI occurs only in Indonesian RAs. This is similarly found in Mirahayuni (2002) that Move VI was found in about half of the native and non-native RAs. It is also supported by Arsyad (2013) that Move VI was considered to be absent in the discussion sections. Therefore, it shows that Move VI (exemplification) is greatly used depending on the authors' needs. If they operate Move V (explanation) providing sufficient information, they, then, will not use Move VI.

Move VIII (recommendation) is considered to be absent in the present study. Move VIII presents the need for further research or suggested possible lines of future research. This is in line with Arsyad (2013) that Move VIII (recommendation) was absent in Indonesian RAs across disciplines, although some researchers still reported that Move VIII was found in average frequency about 40 to 60 % either the native and non-native RAs (Holmes, 1997; Mirahayuni, 2002; Peacock, 2002). Thus, Move VIII is relatively easy to be recognized in the analysis of RAs, but this is not popular move.

To sum up, all Indonesian authors recognize and understand universal patterns of RA writing; especially the pattern of RA writing is proposed by Swales (1990). The different of similar move occurrences and frequency represent their choices, not their ignorance or unknown situation. They freely operate whatever,

wherever and whenever moves were. Thus, we have limited situation to interview the authors and crosscheck the journals' editors in order to know how far the editors helped them. This will need to be investigated by next researchers.

CONCLUSION

Based on the summary of findings and discussion sections, the rhetorical patterns of discussion sections of English and Indonesian RAs written by the same Indonesian authors are not too different. The rhetorical patterns of discussion sections of both in English and Indonesian RAs are different from Swales (1990) model, in terms of move occurrences and move order. Move I (background of Information), Move VI (exemplification), and Move VIII (recommendation) does not commonly occur in the rhetorical patterns of discussion sections of both in English and Indonesian RAs. The selected Indonesian authors tend to straightly open their discussion section with Move II (statement of results) or Move VII (deduction and hypothesis) and report things related to the results in their discussion section with no purpose of making recommendation (Move VIII). Thus, it seems that the authors learn from the common RA format existing in the Indonesian journal publication. The journal is not urged the RA author to provide recommendation as long as the RA has reported results clearly. In other words, the authors are in the position of having their rhetorical patterns suited the context and communities. We realized that there are some limitations found in the present study namely we did not interview our subjects, 7 Indonesians authors and the journals' reviewers/editors in order to crosscheck whether the RAs are originally based on the authors' ideas or the reviewer's suggestions. We therefore, recommend for others researchers to interview the authors and journals' reviewers/ editors in order to know how far the RAs are revised.

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DOES PROBLEM-BASED LEARNING IMPROVE CRITICAL THINKING SKILLS?

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Abstract: The study aims to understand the implementation of Problem-Based Learning and its impact on critical thinking skills for senior high school students. The study used the lesson study approach that was conducted in four cycles. Each learning activity consisted of identifying topic, presenting the report, and evaluating the Problem-Based Learning. The subject of the study was in a Senior High School in Malang, Indonesia. The level of critical thinking refers to Structure Observed Learning Outcome (SOLO) Taxonomy, consisting of Prestructural, Unistructural, Multistructural, Relational, and Extended Abstract thinking levels. The findings in the learning process show that the students' critical thinking skills has increased. It is revealed by improving the ability to solve problems and making conclusions through critical thinking processes. The implementation of Problem-Based Learning also encourages students to think critically in the form of questioning, discussing problems and making solutions related to the employment issues, national income and economic growth in Indonesia.

Keywords: *Problem-Based Learning, Critical Thinking Skills, Lesson Study*

APAKAH PROBLEM-BASED LEARNING DAPAT MENINGKATKAN KEMAMPUAN BERPIKIR KRITIS?

Abstrak: Penelitian ini bertujuan untuk mengetahui penerapan Problem-Based Learning dan pengaruhnya terhadap kemampuan berpikir kritis pada siswa sekolah menengah atas. Penelitian ini menggunakan pendekatan lesson study yang dilakukan melalui empat siklus. Setiap aktivitas pembelajaran terdiri dari mengidentifikasi permasalahan, mempresentasikan laporan kegiatan, dan mengevaluasi pelaksanaan Problem-Based Learning. Subject penelitian ini dilakukan pada sebuah Sekolah Menengah Atas di Malang, Indonesia. Tingkat kemampuan berpikir kritis siswa dalam penelitian ini mengacu pada taksonomi SOLO (*Structure Observed Learning Outcome*) yang meliputi prastruktural, Unistruktural, Multistruktural, Relasional, and Extended Abstract. Hasil penelitian ini menunjukkan bahwa selama proses pembelajaran, kemampuan siswa dalam berpikir kritis telah meningkat. Hal ini ditunjukkan dari peningkatan kemampuan menyelesaikan masalah dan membuat kesimpulan melalui proses berpikir kritis. Penerapan Problem-Based Learning juga mendorong siswa memiliki kemampuan berpikir kritis dalam berbagai aktivitas seperti mengajukan pertanyaan, mendiskusikan permasalahan, dan membuat solusi terkait permasalahan pengangguran, pendapatan nasional, pertumbuhan ekonomi di Indonesia.

Kata Kunci: *Problem-Based Learning, Kemampuan Berpikir Kritis, Lesson Study*

INTRODUCTION

Most of higher educational institutes face the problem how to transfer knowledge and how to develop and ensure professional and up-to-date practical skills (Tick, 2007). Various efforts in improving the quality and process of learning in the classroom were implemented such as the use of learning models. For instance, Wulandari & Narmaditya (2016) using simulation method to improve students learning. Futhermore, Wulandari & Narmaditya (2017) implemented

reader theater in economics course. The development of learning directed towards the student-centered leads the role of the teacher as a facilitator. Teacher-student contact time is also diminishing, making it even more imperative that students develop independent learning skills to ensure that non-contact hours are utilized effectively (Forsythe, 2002). As a consequence, the learning environment facilitates such instructional methods that require learners to actively gather and apply knowledge, therefore,

takes another shape in which the student's, as well as the teacher's roles and duties, alter (Tick, 2007).

Student-centered approach allows student to participate actively, always challenged to have critical power, be able to analyze and solve their own problems. Critical thinking is in the family of higher order thinking skills, along with creative thinking, problem-solving, and decision-making (Facione, 1990; McBridge, 1991; Tishman & Perkins, 1995). Some points of critical thinking are about teaching students to appropriately use concepts, principles, and procedures, thus they are capable of producing fruitful outcomes and critical judgments (Bailin et al., 1999). Additionally, critical thinking has an important implication for transfer of knowledge and application of problem-solving skills to novel situations (Garcia & Pintrich, 1992). In this capacity, the authors assume that several advantages for students learning might be claimed for Problem-Based Learning to increase critical thinking ability.

An attempt to reach better quality of learning, teacher can utilize Problem-Based Learning (PBL) in their classroom which carried out through lesson study (Ashari et al., 2015). Lesson study is an effective way to improve teaching and learning activities in the classroom for several reasons. First, lesson study is conducted and shared by teacher based on their experiences. Second, lesson study focuses on students' activities including critical thinking skills. Therefore, lesson study can be defined as a model that teachers can do to understand the learning activities collaboratively and continuously based on mutual learning principle in enhancing learning community (Suratno, 2012). In implanting of lesson study, it consists of three main stages namely Plan, Do, and See. In plan stage, it is initiated by proposing a topic to be discussed, providing learning model to be implemented and explaining a problem that need to be solved. (Asyari et al., 2015). Further, in the stage Do, teacher model applies particular learning model based on previous plan, while the other teachers and lecturers play role as observers. During learning process, observers need to capture students' activity in the classroom. The next step in the lesson study is stage See. In this stage, teacher model and observers propose their experience and observation to discuss and

promote an attempt in improving teaching and learning

Problem-Based Learning is teaching and learning model that provide contextual problems to the classroom, by this way the teacher may stimulate students to learn (Sutirman, 2013). Although the problems or tasks, may not always have a solution, Problem-Based Learning nevertheless explains a rich learning environment in which students identify what needs to be studied and learned from examining the problems confronted (Gibbs, 1992; Forsythe, 2002). There are four-five types of problems that can be applied in Problem-Based Learning courses. These are case studies, simulations, role-playings, the use of ill-structured problems that is a problem with uncertain strategies or multiple solutions and task-based or project-based problems. These types can all be solved in group team-work or workgroups (Tick, 2007).

Problem-Based Learning is a teaching and learning model that present many authentic problems and meaningful to the students (Arends, 2015). Teaching and learning process using Problem-Based Learning challenges students to learn, to work in group and to look for the solution in the contextual problem. Teaching and learning process is directed to student in order to develop student's ability in making solutions systematically. The advantages for students learning are claimed for Problem-Based Learning to increase critical thinking ability (Masek & Yamin, 2011).

For an assessment of, particularly when compared with conventional lecture-based teaching; 1) Problem-Based Learning fosters a deeper approach to learning; 2) Problem-Based Learning promotes more versatile studying methods and Problem-Based Learning students are more likely to use the library and library resources to study; 3) Problem-Based Learning develops greater knowledge retention and recall skills; 4) students tend to exhibit stronger knowledge application skills; 5) From a teacher perspective, Problem-Based Learning appears to be a very satisfying method of teaching (Forsythe, 2002). Moreover, Saguni (2013), remarked that Problem-Based Learning method provides higher problem solved ability compared to the jigsaw type cooperative learning method and lecturing method.

In economics course, many studies provided that Problem-Based Learning is an effective method in improving students' achievement and motivation (Supandi, 2016; Ibrahim, Suyuti, & Nadjamuddin, 2017; Sari, 2017; Narmaditya, Winarning, & Wulandari, 2017a). In the other subject, studies investigated the implementation of Problem-Based showed varied results (Morales-Mann & Kaitell, 2001; Galant, Frenay & Raucent, 2012; Harun et al., 2012; Marzuki & Basariah, 2017; Retnowati, Fathoni, & Chen, 2018). Harun, Yusof, Jamaludin & Hasan (2012) applied Problem-Based Learning in the classroom and it affected to students' motivation in teaching and learning. The students also became more involved in learning and become more creative and critical (Morales-Mann & Kaitell, 2001; Galand et al., 2012). Marzuki & Basariah (2017), mentioned that problem based learning significantly affects to student's critical thinking ability and self-discipline in the civic education. In addition, study by Retnowati et al. (2018) proposed that problem based learning is expected more effective for grouping strategies than individual instruction.

Numerous studies mentioned mainly focused on students' motivation, achievement and creative thinking skills but few number of research conducted points on critical thinking skills particularly in the economics course. First, the economics subject highly related to the complex world that make difficult to be understood. Moreover, students can play role as economist both as policy advisor and scientist. Therefore, this study examines the implementation of Problem-Based Learning in economics course to overcome difficult issues in economics. Moreover, it provides the implementation of lesson study in senior high school and how Problem-based learning affects to the students' critical thinking ability.

METHOD

This study applied qualitative descriptive approach. The research was conducted in four cycles through Lesson Study which consists of three main stage namely Plan, Do and See. In the stage, the researchers employ six experts in the field including Professor in economics education and economics teachers in a Senior High School in Malang, Indonesia. One of the teachers took the role as the teacher model and the others were

the observers. Stage do consists of two main activities namely conducting classroom lesson based on previous proposed lesson plan and observing during learning process by observers. In See stage, reflection on learning outcomes is conducted in accordance with the implementation of lesson study activities and analyzing the overall learning that is done. At this stage jointly implemented by all the components that are present both groups of subject teachers, lecturers and observers, because the results of discussion and analysis can be used as input to improve or revise the next lesson.

A class of students in the participated school was the subject of the research. They were learning about several economics topics covered in the national curriculum used by the school. The topics were unemployment, national income and economic growth, and studied by using Council for Economics Education instrument (CEE, 2009). The data collection tool uses observation sheets, field note sheets, test, questionnaires, and documentation.

The tool that we employed to understand the students' critical thinking is an essay test which consists of their ability to have an argument, to evaluate, to state problems, to deduce, and to induce (Benjamin et al., 2016). The Structure Observed Learning Outcome (SOLO) Taxonomy was applied in order to measure students' ability in solving a problem that contains five phases namely Prestructural, Unistructural, Multistructural, Relational, and Extended Abstract. It was started from the lowest level to the advanced thinking levels (Biggs, 1995). In this research, the data on the learning process was conducted through Lesson Study from the observation sheet (See Figure 1).

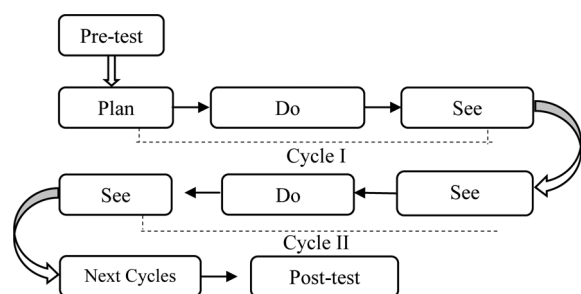


Figure 1. Research Design

For further analysis, the students' critical thinking data that were collected from pre-test and post-test and analyzed using descriptive

method. The data of the learning process were obtained from an observation sheet during the implementation of Lesson Study. In more specifically, students were given problem in a particular topic consisted of five essay questions like providing what factors affecting unemployment in Indonesia, what the most factors affecting unemployment, what the easiest and hardest problem to be solved, and providing solution when the act as policy advisor. All of their answers should be provided by the data and deeply analysis. The problem given to the group after teacher model proposes explanation related to the topic. Furthermore, it was analyzed by comparing the average test result using explained criteria in table 1.

Table 1 shows information about the criteria in understanding students' critical thinking skills. In general, students' ability in thinking critically are divided into five categories which have different score. Specifically, when student answer essay questions by providing more solution, explaining great argument, illustrating in systematic language clearly, they will achieve the highest point. In contrast, when student cannot provide solution for given problem, cannot state the problem and cannot explain in correct answer, they will receive the zero point.

Table 1. Criteria of critical thinking skills

Score	Indicators
4	Students propose a solution, explain an argument, or state problems referring to the particular given issue. Further, students have more relevant answer or idea in acquaintance with received problems and several facts to provide a sufficient explanation and interpret in a comprehensive, coherence and concise language.
3	Students propose a solution, explain an argument, or state problems referring to the particular given issue in the assignment. Students could provide more solution or idea with several relevant examples. Moreover, students also explain their work in clearly language.
2	Students propose a solution, explain an argument, or state problems referring to the particular given issue in the assignment then they are provide in a systematic language.
1	Students propose a solution, explain an argument, or state problems referring to the particular given issue in the assignment but they are cannot to make a connection between received information well and cannot provide their work properly.
0	Students propose a solution, explain an argument, or state problems referring to the particular given issue in the assignment or they provide a wrong answer.

Source: adapted by Asyari et al., (2015)

FINDINGS AND DISCUSSION

Learning Process on Problem-Based Learning

The learning activities through lesson study were applied in four cycles using Problem-Based Learning. The learning stages consisted of identifying topics and Problem, organizing the students to learn in groups, planning the tasks, preparing a report, developing and presenting the report, and also analyzing and evaluating the problem-solving activity. In more detail, the learning action using Problem-Based Learning are illustrated in the following figure (See figure 2).

In the first meeting, students were organized into small groups that work independently from other groups throughout the teaching term. Since we usually designed tasks that comprise different components, we employ groups of six

to eight students. Each group received a topic related to unemployment, national income or economic growth. Moreover, teacher model gave some problems to the students, for example, told them about fourteen causes of unemployment in Indonesia, types of unemployment in Indonesia, policies related to unemployment in Indonesia. Further, teacher model asked students to collect data, made an analysis and decided to agree or disagree to the statement we made previously. Students also need to observe at the unemployment in their areas and compare to the other region investigated by their classmates. Related to the national income, teacher model also provided the students to collect time series data, propose the idea that consumption makes up the biggest part of national income and the government should increase consumption of the people.

The next section was challenging the students to agree or disagree and connect their answer with real data, news and theories. They need to conduct a research through the internet sources related to this topic. Last for the growth rate, the teacher model proposed the main idea that higher economic growth was happened in a more open economy with market economic system. Further, students provided their ideas toward the critical unemployment issues in Indonesia, how to measure unemployment, how to differentiate the unemployment categories and will there ever be a zero rate of unemployment. In the other hand, at the topic of National Income, students were asked to discuss how to distinguished Gross Domestic Products and Gross National Products and what are the components and how to measure national income with three types of methods (production, expenditure and income approach).

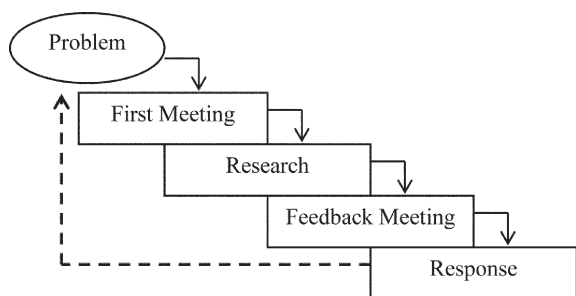


Figure 2: Learning stages using Problem-Based Learning

Source: Forsythe (2002)

Moreover, we continued the discussion of economic growth and students learned a lot about what makes some countries grow more than other countries and what happened in the transition economy countries. Between the first and feedback meetings associated with a particular problem or task, group members undertake the study task allocated to them at the first meeting. Members report back the results of their allocated research activity to the group (after the task recorder has reminded the group of individual responsibilities). Each group discuss by using resources from relevant books and data from the official websites to provide ideas in overcoming problem related unemployment, national income and economic growth in Indonesia. Students found this is very interesting and they can understand about the macro variables very well with this kind of

method. Using all of the information gathered, the group formulates responses to the problems. They did a brainstorming activity and try to find a better example related to all three topics related to macroeconomics.

On the unemployment topics, teacher model also asked the students to give a real example about what really happened in their areas because students come from different areas that have dissimilar problems and local policies. The discussion becomes very interesting since they are talking about their own areas so everybody can learn about other things that not happened in their areas. Related to national income, the students make analysis to the real data in Indonesia for the past ten years. The national income is having differences year by year and students need to know what are the causes of this phenomenon. Before they can decide, they also need to look at the national income data thoroughly so they understand what variables contribute to the increase or decrease of the national income. After that, we compared economics growth of Indonesia and other countries especially countries in transition economy, an economy that is moving towards more open economy or market economy.

Learning Process Through Lesson Study

The implementation of lesson study started from the plan stage of discussing the lesson plan together with observed for advice and feedback. In the plan, prepare for lesson plan material about unemployment, national income and economic growth with a learning sheet, an instrument for Lesson Study. The prepared format includes the observation format and order of implementation Lesson study. This format is structured to document lesson study activities so that accurate reflection can be conducted. In addition, lesson study team members also plan and develop completely learning tools and instruments for the purpose of the implementation phase (plan), namely the preparation of lesson plans, material handouts, Student Activity Sheets, observation sheet of teacher activities and students in Problem-based learning.

In the next stage is implementation (do) lesson plan before. The preliminary in this stage suggest a teacher model giving perception, motivation, and explain the learning model. The implementation of learning is divided into five

activities namely the initial activity core activities consisting of stages of student orientation to the problem, organizing students to learn; guiding individual and group investigation, presenting the work, and also analyzing and evaluate the learning process; and the final activities. This is in accordance with the lesson plan with the problem-based learning model, with the help of three members of the lesson study team will observe activity undertaken by teachers and students in the learning process. At the See stage, reflection on learning outcomes is conducted in accordance with the implementation of lesson study activities and analyzing the overall learning that is done. At this stage jointly implemented by all the components that are present both groups of subject teachers, lecturers and observers, because the results of discussion and analysis can be used as input to improve or revise the next lesson.

The implementation of Problem-Based Learning through lesson study are going quite well, but we also found the students were still less active in group conversations and class discussions. Students are still less familiar with group learning especially with groups that are not in accordance with the wishes of students. Students are still inclined to work individually and ask for immediate difficulties to the teacher instead of being discussed first with group members.

Another issue is misconception about the learning materials. The concepts that are hard to be understood by students are types of unemployment in Indonesia since it has a slightly difference with the definition of unemployment in other country such as The United States of America. Misconception happened because of different definition of unemployment in each countries and dissimilar way to measure unemployment so sometimes the same rate of unemployment will implicate to a different way to solve the problem because of the different component of unemployment definition and types. However, it can be solved in the next cycle by proposing the students to observe at the real data, phenomenon and conducting a small research through the data and news in the internet and discuss the differences in the classroom. By discussing and brainstorming, the source of missconception was easier to be found and solved.

Related to national income, sometimes the students find it hard to distinguished the difference of each methods to measure Gross Domestic Product (GDP) particularly in acquaintance with production methods. The lack of understanding also occurred in economic growth topic. Some of these students realize that it hard to comprehend the stages of growth in many countries. By applying Problem-Based Learning method, these problems can be overcome in the next cycle. In the other hand, the brainstorming was the nicest part for students. This is understandable because they were really engaged in the discussion. The teachers remarked that before the method applied, the students were less critically thinking and not engaging as much as this time. Most of the economics teaching in Senior High School were only passing knowledge from teachers to students and not asking them to really think about the topics.

After the method implemented instead of only transferring knowledge, the teacher proposed questions that makes them think and use their critical thinking skill, and also use their ability to investigate phenomenon in their country and their areas. Students were provided questions such as why in a under develop countries like indonesia which has experienced an upward trend in economic growth still face inequality?. Having questions to be investigated, apparantly changed their ways of learning and challenged them to really be critical of the macroeconomics phenomenon in Indonesia. They also found connections between variables and what happened during every business cycle in Indonesia at every era.

After finished all cycles, studens were also given questionnaires about their perception toward the implementation Problem-Based Learning in their classroom. The findings of this study remarked that students find this method is very interesting because they get to learn about the real economy instead of only talking about theories that were harder to imagine. This method also escalate their presentation and debating skill. Some students find it hard to talk in front of the public because they feel shy to talk in front of many people. However, after participating in this discussion, they learn how to overcome their nervousness in front of the class. In debating, they also find it very interesting to be critical of the findings of other groups. Students become very

active in class and understand more about some topics that previously hard to follow. The data on the learning process through Lesson Study were provided from an observation sheet.

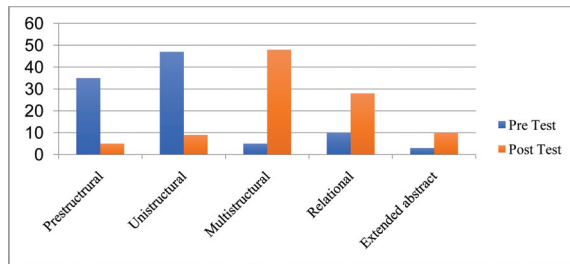


Figure 3. Mean Scores of Critical Thinking Skills in Pre-Test and Post-Test

Figure 3 provides information about the differences critical thinking skills of students by comparing pre-test and post-test. In general, large number of students previously categorized as prestructural and unistructural, whilst only small number was categorized as another three namely multistructural, relational and extended abstract. In more detail, the pre-test result of the students' critical thinking showed about 35 per cent of students was categorized in prestructural stage and 47 per cent of students were in unistructural stage. However, only approximately 5 per cent of students were categorized in multistructural phase, whilst 9.70 percent of them are in relation and none 3 per cent of them in extended abstract thinking stages.

After Problem-Based Learning implemented through lesson study, it showed a dramatically improvement in students' critical thinking skills. Based on figure 3, it explained that as much as 5 per cent of students are in prestructural stage, while 9 per cent of them are in unistructural stage. Another result showed that almost a half of students categorized in multistructural phase, 28 per cent in relational stage and 10 per cent in extended abstract, respectively.

DISCUSSION

Impact Problem-Based Learning on Critical Thinking Skills

To understand the effect of Problem-Based Learning and Critical Thinking skills, this study applied to Structure Observed Learning Outcome Taxonomy or SOLO Taxonomy which consisting of five stages of critical thinking skills namely Prestructural, Unistructural, Multistructural,

Relational, and Extended Abstract thinking levels (Biggs, 1995). It is revealed that by applying Problem-Based Learning in the classroom improves the teaching and learning remarkably. This statement is also supported by numerous prior studies such as Hsu (2014), Narmaditya et al. (2017a) and Nafisah & Suyanto (2014). Problem is the main focus of teaching and learning that will happen through problem-solving activities. Declarative knowledge and skills that are gained through critical thinking skills will be applied to solve a problem (Zabit, 2010).

In the research, teacher proposed problems related to unemployment, national income and economic growth respectively. The topics were chosen to be applied in Problem-Based Learning because these topics were categorized as difficult concepts in economics. Based on findings, some students feel that unemployment was the crucial issue to be understood. Previously, students feel hard to distinguish three different types of unemployment namely structural, frictional and cyclical that make them categorized in prestructural and multistructural. Pre-structural thinking stage is the lowest stage of thinking, in which a student cannot understand properly toward the problem given and tends to not provided their answers. Further, they are not be able to manage well an information, misunderstood concept, and the task given is not suitable to the assignment done. pre-structural level students do not yet understand the knowledge they are supposed to learn, probably because they have not been taught it yet. The condition at this level, students do not understand how to gather information about the ideas, how to organize it in relation to other ideas, and do not get the point of the idea at all (Goff et al., 2015).

Another topic given in the other meeting was national income. For this topic, students experienced a challenge in providing what is the circular flow in national income and how it impacts to the economic welfare. This study found that almost a half percentages of students were categorized at unistructural stage. Most students answered the questions related to unemployment and national income only referring to books without proposing greater argument.

Unistructural thinking stage is marked by students' ability in managing only less than a half from whole information and tasks received. Moreover, students' ability showed by solving

Table 3. Dimension of SOLO Taxonomy

Prestructural	SURFACE LEARNING		DEEP LEARNING	
	Unistructural	Multistructural	Relational	Extended Abstract
	Concrete Facts-----			Abstract Ideas
	Few Organizing dimensions-----		Many Organizing Dimensions	
	Minimal Consistency-----		Maximal Consistency	
	No use of organizing principles---		Complex use of organizing principles	
	Low cognitive capacity-----		High cognitive capacity	
	No Relationship-----		Multiple relationship	
	High need for closure-----		low need for closure	

Source: Goff et al. (2015)

simple problem proposed during teaching and learning. Based on findings, it showed that only small percentages students were categorized as multistructural stage. This phase is evidenced by adapting more than one information but they cannot provide the relationship each information. On the other word, in this stage, students could use better information to solve particular problem even though they cannot propose a conclusion by using all information.

Meanwhile, Relational thinking illustrates better critical thinking ability. It revealed by better abilities in several learning activities such as understanding the topic, analyzing given information, making a relationship between received information, explaining argument, providing so much better conclusion. For the case of unemployment, students proposed better list from the lowest to highest factors affecting unemployment rate in Indonesia. They used several data from the internet and books to propose their ideas in solving the problem. Furthermore, students already provide greater explanation in proposing argument related unemployment problem in Indonesia. Students who are categorized relational thinking rose almost doubled compared to pre-test.

Even though only small percentages students that having extended abstract thinking stage, it rose dramatically compared to previous test. In the other word, students prepared well their argument related to the topic and proposing great idea to solve the unemployment problem in Indonesia. For topic related to national income, they not only can understand the circular flow national income, but they also tried to combine some situation and it effects to the national income. In the Students who are categorized at the extended abstract thinking skills have deductive and inductive capability to make

a connection between received information. Further, they also could explain properly about the given topic and provide well explanation by using several perspectives (Ashari et al., 2012). Knowledge at multistructural level is more complex than knowledge at a unistructural level, and knowledge at a relational level is more complex than knowledge at a multistructural level.

Therefore, it can be concluded that Problem-Based learning can improve the ability of critical thinking in students. The result of the study in the learning process, students' critical thinking skills increase showed by ability to solve problems and make conclusions through critical thinking processes. By giving particular problem, students will critically propose an idea to solve the problem by collecting some materials from books and the data from the internet, analyzing the collected information and proposing a way to solve the problem. Implementation of Problem-Based Learning also encourages students to think critically in the form of questioning, discussing problems and making solution related topic in the economics course (Sendaq & Odabas, 2009; El-Shaer & Gaber, 2014; Birgili, 2015; Narmaditya et al., 2017a).

The implementation of Problem-Based Learning in this study is concluded that it can improve critical thinking skills since it was observed that students become more active and able to use their thinking ability, students are not just passive in receiving explanations submitted by teachers. It is agreed that in Problem Based Learning, students are required to actively develop their thinking skills to formulate problems and find solutions in solving problems, so as to develop their critical thinking skills capability.

CONCLUSION

The implementation of Problem-Based Learning that was implemented in four cycles (Plan, Do, See) showed that it was facilitating critical thinking. The growth of critical thinking skill of student regarding to SOLO taxonomy appeared to increase in each level: Prestructural, Unistructural, Multistructural, Relational, and Extended Abstract. The findings of the study revealed an increased of ability to solve problems and make conclusions through critical thinking processes. of the practice of Problem-Based Learning that specifically encourages students to think critically were when the teacher provided activities during questioning, discussing problems, and making solution related to the topic in the course. Revision and reflection process that were given at the end of the learning assisted students to understand deeper and avoid misconception.

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HOW LEARNING DISABILITIES TEACHERS IN THE KINGDOM OF SAUDI ARABIA DEFINE STUDENTS WITH GIFTEDNESS AND LEARNING DISABILITIES

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Abstract: This study set out to examine how learning disabilities teachers define Students with Gifted and Learning Difficulties (SGLD). One rationale for interviewing learning disabilities teachers is that they work with students with learning disabilities and may be more aware than others of some of the characteristics of SGLD. The other rationale is that the education system in the Kingdom of Saudi Arabia does not focus on giftedness very much, and therefore, only a small number of teachers of giftedness were available for this study. The qualitative data garnered from the interviews were analysed using content analysis. Nine learning disabilities teachers participated in this study. Findings from the study suggested that the learning disabilities teachers' definitions of SGLD are limited, indicating a lack of understanding of the characteristics of SGLD. The results of this study may assist teachers and educational personnel in seeking the optimal methods to identify and assist SGLD.

Keywords: *giftedness and learning disabilities, learning disabilities teachers*

BAGAIMANA GURU DARI SISWA DENGAN KESULITAN BELAJAR DI ARAB SAUDI MENDEFINISIKAN SISWA BERBAKAT DAN KESULITAN BELAJAR

Abstrak: Penelitian ini bertujuan untuk menggali bagaimana guru siswa berbakat dan kesulitan belajar (SGLD) mendefinisikan arti berbakat serta kesulitan belajar yang dialami oleh siswa mereka. Salah satu alasan utamanya adalah karena mereka merupakan orang yang seharusnya sangat dekat dengan siswa-siswa tersebut, sehingga mereka selayaknya lebih paham serta mengetahui karakteristik dari siswa berbakat tersebut. Alasan lainnya adalah karena sistem pendidikan di Arab Saudi belum banyak memberikan perhatian pada pendidikan bagi anak berbakat serta mengalami kesulitan belajar, yang salah satunya tercermin dari sedikitnya jumlah guru anak berbakat ini. Data kualitatif yang diperoleh dari interview dianalisis dengan analisis konten. Sembilan orang guru terlibat dalam penelitian ini. Hasil penelitian menunjukkan bahwa definisi guru SGLD sangatlah terbatas atau kurang, yang ditunjukkan dari kurangnya pengertian mereka tentang pengertian SGLD itu sendiri. Hasil penelitian ini dapat digunakan untuk membantu guru serta pihak terkait dalam menyediakan metode terbaik untuk mengidentifikasi serta membantu siswa berbakat serta kesulitan belajar.

Kata kunci: *kebutuhan khusus dan kesulitan belajar, guru anak dengan kesulitan belajar*

INTRODUCTION

In 1975, the Education for All Handicapped Children Act recognized the rights of all handicapped students, but it was not until 2004 with the reauthorization of the Individuals with Disabilities Education Act (IDEA) that the twice-exceptional student was actually mentioned (IDEA, 2004; Leggett, Shea, & Wilson, 2010). However, Students with Giftedness and Learning Disability (SGLD) are usually not identified as requiring additional support, and if they are, the focus is usually on remediation, on addressing their learning disability rather than

their giftedness (Maddocks, 2018; Wormald, 2011). In Saudi Arabia, SGLD is not yet widely acknowledged or understood (Alsamiri, 2018).

Teachers everywhere seem to have great difficulties in defining GSLD, so they are not often able to satisfy these students' educational needs in the setting of the mainstream classroom (Lovett & Sparks, 2011; Pepanyan, Fisher, & Wallican-Green, 2018). It is argued that teachers tend to focus mainly on the specific learning difficulties, so they rarely estimate and nominate high abilities (Alsamiri, 2018; Brody & Mills, 1997; Lo & Yuen, 2014; Maddocks, 2018). This

is despite the fact that, according to Bracamonte (2010), between 2% and 5% of learning disabled students are gifted, and between 2% and 5% of gifted students are learning disabled. In the United States, just over 39% of 300 school psychologists surveyed indicated moderate to considerable familiarity with SGLD, while just over 60% reported having little to no familiarity at all (Francis et al., 2010).

Internationally, and in particular in KSA, there is no clearly defined process for reporting the number of SGLD either (Alsamiri, 2018; Pepanyan et al., 2018). Thus, it is difficult to know just how many SGLD there are. For instance, studies in the United States suggest that there may be more than 300,000 students who are twice-exceptional who are not receiving appropriate support or programmes (Foley-Nicpon, Allmon, Sieck, & Stinson, 2011; Wood & Estrada-Hernandez, 2009; Zhanova & Rule, 2018). However, because there are no standard methods to identify twice-exceptionality in the United States, it is difficult to know how many such students there are. This problem is compounded by a lack of accountability requirements at the federal level. A similar situation exists in Australia, where SGLD are not readily recognised (Wormald & Clark, 2018; Wormald, Vialle, & Rogers, 2014).

There is no clear-cut definition of SGLD because the characteristics that define such students are so broad (Foley-Nicpon et al., 2011; Ronksley-Pavia, 2015). For many years, the term twice-exceptional or gifted learning disabled has been considered something of a paradox. How could a student have a learning disability while simultaneously have giftedness? Much of the research defines SGLD as learners who are gifted in one or more areas but have a learning disability that causes them difficulty in other areas (Alsamiri, 2018; Foley-Nicpon et al.). However, it seems incomprehensible to some educators that a learner can have both giftedness and learning disabilities, and this then poses difficulties in terms not only of identifying such students, but also of providing appropriate intervention strategies to support them (Berman, Schultz, & Weber, 2012; Brody & Mills, 1997; Crepeau-Hobson & Bianco, 2011; Willard-Holt, Weber, Morrison, & Horgan, 2013).

The National Twice Exceptional Community of Practice in the United States

(Baldwin, Omdal, & Pereles, 2015) has provided a basic framework for assisting twice exceptional students, including specialised methods of identification, appropriate educational opportunities and support, accommodations and interventions, and of particular importance is the necessity for appropriately trained academic professionals and ongoing professional development in twice exceptionality. While this framework, which is the most comprehensive to date, is useful, it also demonstrates why it can be difficult to identify SGLD and to provide the necessary support for these students. The fact that SGLD's giftedness and disability can each mask the other or both can be masked together makes it extremely challenging to identify and support SGLD (Alamer, 2017; Baldwin, Baum et al., 2015). According to Baldwin et al. (2015), while an agreed upon definition of SGLD is important, it is also necessary for this definition to be accepted by teachers as well as researchers. The problems that remain once SGLD is defined are concerned with identification, that is, recognising and understanding the many and varied characteristics of such students (Alamer, 2017; Bianco & Leech, 2010; Foley-Nicpon, 2013; Krochak & Ryan, 2007; Pereles, Omdal, & Baldwin, 2009).

For instance, one study demonstrates that while teachers may not be familiar with the concept of SGLD, many do recognise its existence but have difficulties recognising these students at school (Al-Hroub, 2011). An obstacle cited is large classrooms, which make individual needs more difficult to identify. According to the research (Trail, 2011), the characteristics of these students fall into four categories: academic, cognitive, interpersonal, and intrapersonal. The characteristics are common character traits that are apparent in most SGLD. Students will exhibit traits from both sides strengths and weaknesses.

Learning disability in its simplest form involves difficulty learning numeracy or literacy skills. This is usually associated with problems in information processing (Wormald, 2009). Some students with learning disabilities experience problems learning to read. They may have dyslexia and experience spatial and visual processing difficulties (Berninger & Abbott, 2013; Wormald, Rogers, & Vialle, 2015), such as problems perceiving numbers and letters (Besnoy, 2006; Trail, 2011). They

may also exhibit short or long-term memory problems (Berninger & Abbott, 2013; Gari et al., 2015), difficulty forming letters and spacing (dysgraphia) or difficulty with mathematical concepts (dyscalculia) (Dare & Nowicki, 2015; Vaughn, Wanzek, Murray, & Roberts, 2012). Storing and processing visual and auditory information is also problematic for such students (Gari et al., 2015; Wormald, 2009; Wong, 2013). These difficulties inhibit SGLD achievement (Bull, Espy, & Wiebe, 2008; Geary, 2011). This is because many academic assessments, such as standardised testing, require memorisation of facts in a given timeframe. Activities with time restrictions do not always enable SGLD to do as well as other students. They also have difficulty learning things by heart, their handwriting on written assessments is often incomprehensible and poor reading performance may prevent them from understanding what is required (Gari et al., 2015).

The gifted learner has been characterised as having high ability, usually in a specific academic domain such as literacy or numeracy (Chamberlin, Buchanan, & Vercimak, 2007; Carter, 2013; Wormald, 2009). Other features of giftedness, aside from skill in a particular domain, include strong powers of observation, a well-developed vocabulary, wide reading, ability to quickly absorb information, good recall of information, intellectual curiosity, concern about justice and injustice, unusual imagination and interest in existential questions, such as the nature of the universe and human suffering, as well as environmental issues. It is crucial, however, for these students to be supported in order for their giftedness to blossom (Berninger & Abbott, 2013; Foley-Nicpon, 2013; Mayes, Harris, & Hines, 2016).

Research also indicates that the characteristics of SGLD are not straightforward. SGLD have a variety of strengths and weaknesses based on the areas of their gifts and disabilities (Gari, Mylonas, & Portešová, 2015; Song & Porath, 2011). These characteristics are a unique combination of both giftedness and learning disabilities (Barnard-Brak, Johnsen, Pond Hannig, & Wei, 2015). Some common strengths of SGLD are creative thinking and abstract reasoning. They tend to be imaginative and good problem solvers. SGLD can also be strong visual learners, have a large vocabulary

and good mathematical reasoning, and are often spatial learners (Jarwan & Al-Abbadi, 2014). Weaknesses can range from being emotional and easily frustrated, short-term memory problems, and poor computation skills to issues with communication skills, such as listening, written tasks, decoding, handwriting, and spelling (Alsamiri, 2018; Song & Porath).

Paradoxically, the school system's processes often identify SGLD as having LD but regularly overlook their giftedness (Yssel, Adams, Clarke, & Jones, 2014). Interventional approaches therefore tend to focus on students' LD-related issues to the detriment of any distinctive gifts students may have (Ruban, 2005). Johnsen and Kendrick (2005) observed that gifted students (SG) are disadvantaged if opportunities to reach their full potential are absent (Purwanta, E; Hermanto, H., Harahap, F. 2016; Wellisch & Brown, 2012). According to Dai and Chen (2013), teachers and administrators tend to place SG in a generic category.

Based on the gaps identified in this section, this study set out to investigate: 1) How familiar are learning disability teachers with the term *Students with Giftedness and Learning Disabilities* or *twice-exceptionality*?; 2) Is there a particular method to identify SGLD?; and 3) What do learning disability teachers need to know about SGLD?

METHOD

Research Design

In the current research, the authors employed a qualitative research design in order to gain an in-depth understanding of LD teachers' understanding of the term *Students with Giftedness and Learning Disabilities*. The author developed one semi-structured interview procedure for teachers, based on a critical review of literature focused on defining SGLD through their working experience.

Procedure

The Ministry of Education granted the authors approval to conduct this study. The author contacted 12 teachers, and a total of 9 agreed to be interviewed. The teachers were contacted to organise a time to meet for the interviews, and teachers agreed to meet at their schools at a time convenient for them. Signed consent was obtained from teachers who agreed

to participate. The interviews were conducted face to face, and all the interviews were recorded with an MP3 recorder with only the teacher and the author present in the interview room.

Participants

The average age of participating learning disability teachers was 27 years, ranging from 23 to 35. The participating teachers had an average of eight years of teaching experience. The majority held a bachelor's degree (eight), followed by a postgraduate diploma (one). None had received any training or professional development in SGLD.

Data Analysis

An inductive content analysis (Elo & Kyngäs, 2008) was undertaken in this study and involved several steps. Inductive content analysis relies on a coding unit consisting of words, sentences, or paragraphs that contain elements 'related to each other through their content and context' (Graneheim & Lundman, 2004, p. 10). The first author listened to all audio-recorded interviews, reviewed the interviews, transcribed them in Arabic to confirm the accuracy of the transcripts, and corrected a few inconsistencies. Following the data analysis, the interviews were translated into English.

To ensure validity, the author forwarded two interview transcripts for independent data coding to the co-coder. The author independently coded one interview, and the co-coder coded the same interview transcript. The author and the co-coder compared the results of their coding and discussed any differences. Once an agreement was reached, the author conducted an open coding of the remaining interviews, reading them line by line and identifying initial codes.

The author then checked the results of the open coding for accuracy, carefully reading the results. The author then read the open coding several times, and as many headings as necessary were written in the margins to describe all aspects of the content (Burnard, 1996; Graneheim & Lundman, 2004; Hsieh & Shannon, 2005). The author then refined and clustered the emerging codes and categories into themes (Hodgetts, Nicholas, & Zwaigenbaum, 2013). The evidence of an established theme was arrived at by triangulation of codes, frequency of occurrences, and interview quotes

(Hodgetts et al.). The author reviewed all themes for reliability; these were then reassessed and confirmed by the co-coder and author (Patel & Rose, 2014). The involvement of author and co-coder in each stage of the data analysis enabled triangulation and peer checking (Patel & Rose).

Results

The results of the interviews about the definition of SGLD were divided into two themes. The first theme was the characteristics relating to strengths and weaknesses of SGLD, and the second theme was the difficulty of defining SGLD.

Theme 1: Characteristics Relating to Strengths and Weaknesses of SGLD

The strengths and weaknesses that were cited by teachers as characteristics of SGLD were usually in academic areas such as mathematics, reading, and writing. For instance, the majority of the teachers claimed that SGLD can be characterised by a disparity between performance and ability, with inconsistency in performance across a number of subjects. For instance, verbal ability may be strong and mathematical performance poor (or vice versa). A recurring theme in the teachers' responses was of SGLD demonstrating learning disability or difficulties in one area and exceptional performance in another. For example:

"I am a learning disability teacher. SGLD can be defined as a student who is gifted in one or more areas but has difficulty in other areas. For example, a student who may be very good at math but whose performance in reading and writing is very poor (T 2).

Characteristics of SGLD can help teachers to understand the term of SGLD. So if the students are performing very well in mathematics, they may struggle considerably with reading. They may have difficulties with reading but have very good math abilities and high creativity (T 4).

I am aware of SGLD characteristics such as low performance levels in one subject (e.g., difficulty with writing and reading) but very high abilities in mathematics. It is possible to define SGLD from these types of characteristics" (T 7).

Several teachers cited exceptional performance coupled with poor memory as a characteristic strength and weakness to define SGLD. For example:

“If students perform exceptionally in math and reading but possess poor memory, this may indicate to the teacher that the student has a learning disability and giftedness “ (T 1).

“Characteristics such as abstract thinking and poor memory can make SGLD very easy to identify “ (T 8).

Most of the teachers participating cited creativity as a characteristic of giftedness by which to define SGLD and linked this with a learning disability in the strengths and weaknesses characteristics.

“A student was experiencing problems with reading but was very creative and highly skilled in painting. SGLD are gifted in painting and drawing, but they can often have some problems with reading and writing” (T 5).

“Characteristics that define SGLD include difficulties with reading and writing, but these students often have good memories and are very creative” (T 3).

Theme 2: Difficulty in Defining SGLD

Difficulty in defining SGLD was cited by teachers as a difficulty in identifying its characteristics. A likely reason teachers found SGLD difficult to define is that their area of specialisation is learning disabilities, and therefore, they are not overly familiar with giftedness and even less familiar with characteristics of SGLD. For example, teachers noted that:

“I am a learning disability teacher. My experience is only with learning disability students. It is difficult to define SGLD. There are no appropriate programmes or support for these students either” (T 9).

“It is not very easy to define SGLD or twice-exceptional students in primary school. This is because there are only services for learning disabilities available. There are no services for gifted learners or twice-exceptional learners” (T 6).

A factor contributing to learning disability teachers finding it difficult to define characteristics of SGLD is that the only students referred to them by classroom teachers are those who are believed to have a learning disability. None of the learning disability teachers has ever been advised that the student may have giftedness or be twice-exceptional. Because of this, classroom teachers focus on deficits, and the learning disability is the only characteristic addressed by the learning disability teacher. For example,

“A student was referred to me because the classroom teacher believed he had a learning disability with reading and writing. However, when I spoke with his mathematics teacher, he was surprised. He said, “How is that possible that he has a learning disability when he excels in mathematics?” (T 1).

“One of my students is a good public speaker at school, popular and active in school activities. However, he was referred to me because he was experiencing difficulties with writing. It is difficult to define the characteristics of these students because they are so different” (T 7).

DISCUSSION

The purpose of this study was to investigate how learning disabilities teachers in KSA primary schools define SGLD. As demonstrated in the results, teachers define the characteristics of SGLD in terms of strengths in one area and weaknesses in another. The results also indicate that a large number of teachers find SGLD difficult to define.

SGLD are clearly present in primary schools across KSA, but learning disability teachers are not aware of these students, cannot readily define who they are, and therefore, cannot meet their complex requirements. Among the respondents, most reported to be able to define SGLD according to the more obvious characteristics in areas of academic study such as reading, writing, and mathematics. Others also cited creativity as a characteristic of giftedness, while others claimed that the term SGLD was too difficult to define. These findings correspond with the literature, which shows that a clear-cut definition of SGLD is difficult because these students' characteristics are very broad (Foley-

Nicpon et al., 2011; Maddocks, 2018; Ronksley-Pavia, 2015).

The characteristics cited by teachers to define SGLD are rather limited. For instance, a few teachers cited creativity as a characteristic, but very few cited abstract reasoning as a characteristic. Teachers' narrow definition of SGLD is evident in the literature also (Alsamiri, 2018; Brody & Mills, 1997; Gari et al., 2015). The focus on learning disabilities is also mirrored in the literature, with teachers usually overlooking giftedness and referring students who demonstrate weakness in one area to learning disabilities teachers (Brody & Mills, 1997; Song & Porath, 2011; Wormald & Clark, 2018).

An important aspect of these findings is that many teachers claimed that there are few to no resources at their schools to address giftedness and none at all for SGLD. This suggests that the KSA education system is based on the deficit model, whereby the disability is addressed but rarely the giftedness. In the case of SGLD, as indicated by the responses in this study, it becomes even more complex because of the wide variety of gifts and learning disabilities that SGLD present.

Overall, KSA teachers are no less likely to be able to define SGLD than their colleagues internationally. Moreover, if they were able to define the characteristics of SGLD, there would be no programmes to address these students' giftedness, much less the complex needs of SGLD. The lack of appropriate programmes and support for SGLD mirrors that in the literature, which indicates similar lack of support and programmes for these students internationally (Foley-Nicpon et al., 2011; Wood & Estrada-Hernandez, 2009).

STRENGTHS AND LIMITATIONS

This study has a number of strengths. The first is that its qualitative nature provided teachers with the opportunity to discuss a category of student with which they were not overly familiar. This yields an important finding for the Saudi education system, which needs to acknowledge this category of student. The second strength is that this is the first such study undertaken in KSA.

One limitation of the study is that the interviews were conducted in only one city in KSA, Almadinah. The second limitation is that

all the teachers interviewed were male. This is due to KSA's cultural policies, which prohibit males from interviewing females. However, this lays the groundwork for possible future studies in which female teachers' definitions of SGLD may be compared with those in this study. The third limitation is that while a qualitative approach facilitates insights of the participants, a quantitative approach would allow for broader generalisation of findings.

CONCLUSION

In the field of learning disabilities in KSA, the needs of SGLD continue to be underserved. This can be attributed to a generally limited understanding of the characteristics of SGLD and to an education model that provides very few resources or programmes for giftedness. This study demonstrates the necessity of ongoing research in this area and professional development opportunities for learning disability teachers to become familiar with the concept of SGLD. Only when they are aware of the variety of ways in which a student can present as SGLD will learning disability teachers be able to address their needs more fully. There is therefore, an urgent need for the Ministry of Education in KSA first to acknowledge this category of student and then to provide the appropriate resources for SGLD and more resources for giftedness. This is important because otherwise, many students will fail to reach their true potential.

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CHARACTER-BASED ECONOMIC LEARNING IMPLEMENTATION AND TEACHER'S REINFORCEMENT ON STUDENT'S AFFECTIVE COMPETENCE IN MINIMIZING HOAX

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Abstract: Minimizing hoaxes that occur in students is closely related to learning outcomes in the affective domain. Therefore, the purpose of this research is to find out and analyze implementation of character-based economic learning and teacher's reinforcement influence on student's affective competence. Type of this research is descriptive and associative analysis. The populations of this research were 10th class of senior high school student in East Jakarta amounting to 1793 students. The sample in this research amounted to 95 students. The sampling method was done by using proportionate random sampling. Data collection is done by filling questionnaires. Analysis of the data used is descriptive statistic and multiple regression. The results showed that there were simultaneously positive and significant effects between implementation of character-based economic learning and teacher's reinforcement on students' affective competencies in minimizing hoax news on online social media. However, partially teacher's reinforcement has a positive but not significant effect on students' affective competencies. Overall, the magnitude of the effect is known to be 43.50%. This gives a considerable meaning, because almost half of its contribution. Even though there are still many other factors that contribute to affective competence, namely the remaining 56.50% as other factors not examined in this study

Key Words: *affective competence, hoax information, implementation of character-based economic learning, reinforcement*

IMPLEMENTASI PEMBELAJARAN EKONOMI BERBASIS KARAKTER DAN REINFORCEMENT GURU PENGARUHNYA TERHADAP KOMPETENSI AFEKTIF SISWA DALAM MEMINIMALISIR HOAX

Abstrak: Meminimalisir hoax yang terjadi pada siswa, erat kaitannya dengan hasil belajar pada ranah afektif. Oleh karena itu, tujuan penelitian ini adalah untuk mengetahui dan menganalisis pengaruh implementasi pembelajaran ekonomi berbasis karakter dan *reinforcement* guru terhadap kompetensi afektif siswa. Penelitian ini menggunakan analisis deskriptif dan asosiatif. Populasi penelitian adalah siswa kelas X ilmu sosial di Jakarta Timur yang berjumlah 1.793 siswa dan sampel penelitian sebanyak 95 siswa. Teknik pengambilan sampel dilakukan dengan menggunakan proporsional random sampling. Pengumpulan data dilakukan dengan kuesioner. Analisis data yang digunakan adalah deskriptif dan regresi berganda. Hasil penelitian menunjukkan bahwa secara simultan terdapat pengaruh positif dan signifikan implementasi pembelajaran ekonomi berbasis karakter dan *reinforcement* guru terhadap kompetensi afektif siswa dalam meminimalkan berita *hoax* di media sosial *online*. Namun, *reinforcement* guru memiliki pengaruh positif tetapi tidak signifikan terhadap kompetensi afektif siswa. Secara keseluruhan, besarnya pengaruh diketahui 43,50%. Hal ini memberi makna cukup besar, sebab mencakup hampir separuh kontribusinya. Padahal masih banyak faktor lain yang berkontribusi terhadap kompetensi afektif yaitu 56,50% sisanya sebagai faktor lain yang tidak diteliti dalam penelitian ini.

Kata kunci: *kompetensi afektif, berita hoax, implementasi pembelajaran ekonomi berbasis karakter, reinforcement*

INTRODUCTION

The rise of fake news (hoaxes) in the midst of the life of the national press has recently been assessed as an important issue so that it will be discussed in the World Press Freedom Day (WPDF) 2017 or World Press Freedom Day held on 2-4 May 2017 in Jakarta. "Hoax has become a global issue not only in Indonesia because it will be a discussion in the WPDF," said Minister of Communication and Information, Rudiantara, while attending the 69th National Press Day event.

The current phenomenon, online social media e.g. Facebook, Line, BBM, WhatsApp, GoogleApp, and a number of other online social media applications for students is a place to strengthen friendships, make new friends, share/vent, self-actualization, and is often used as an arena to promote goods and services. In other words, learning to become a small businessman based online or e-commerce. This is not a problem as long as the corridor of ethics is right. This means that the presence of online social media has a positive role for students. The fact that is happening nowadays, some student-status communities often say or write messages that are less feasible, not polite, dishonest, less tolerant, irresponsible, illegitimate, and so forth which actually cause problems or conflicts. This problem certainly indicates that students' affective competencies are relatively lacking.

The existence of a comprehensive law regulating behavior in cyberspace is very urgent, considering that currently the state is considered helpless to overcome the rampant hoaxes. The Criminal Code and the ITE Law have not been able to target producers and disseminate false news. Therefore, the author wants to contribute, trying to find one of the problem solving, namely from the aspect of education. Because starting from education and learning, this nation becomes civilized. Education is able to overcome moral decadence. Education can improve the dignity of a nation.

Based on the results of a temporary observation that the author conducted in a pre-survey in several Senior High Schools (SHS) in Pasar Rebo Sub-district, East Jakarta, there were still students whose competence was not optimal, on average only 78.67% of students

were competent in attitude, the remaining 21.33% students need special attention. Students who need special attention indicate that students have not shown a good attitude, have not shown honesty, there are still students who often make harsh words, lack of tolerance between students, indifferent and so on. If there is no meaningful follow-up, the implication is that there will be a decrease in affective competence in students. Affective competence is an ability that is related to a person's behavior and attitude. Affective includes attitudes, values, interests, appreciation and adjustment of social feelings (Uno, 2010:70). Mean while, Arifin (2009:22), the affective is the internalization of attitudes that show one's inner growth so that they are aware of the values that are accepted and shown by better behavior.

In simple terms, affective competence has four main dimensions, namely in the form of responses and competencies to build relationships with oneself, responses and competencies to foster relationships with others, response and competence to build relationships with an ever-changing environment, and response and competence to build relationships with God as The Creator and the purpose of life's journey (Chatib, 2012).

Each student affective competency problem appears, an important factor that contributes is a learning process. On this occasion, what will be studied is from the learning process factor which is the implementation of economic learning based character. As in the Grand Design of Character Education (Kemdiknas, 2010:4) states that the implementation of character education, development is carried out through learning experiences and learning processes which lead to the formation of character in students. This process is carried out through empowerment and civilization of students to have noble values and character behavior. According to Majid (2008) the implementation of learning is directed at empowering all potential students to master the expected competencies. The implementation of learning develops the ability to know, understand, do something, live in togetherness and actualize themselves, thus the implementation of learning needs to be: (1) centered on students; (2) develop students' creativity; (3) creating pleasant and challenging conditions; (4) content, value, ethics,

aesthetics, logic, and kinesthetic, and (5) provide a diverse learning experience. Furthermore, according to the Director General of Higher Education, character education can be interpreted as value education, character education, and moral education, character education, which aims to develop the ability of students to make good decisions, maintain what is good, realize and spread goodness in their daily lives. Day with all my heart (Barnawi & Arifin, 2011).

In the implementation of character-based economic learning, there are activities characteristic, namely preliminary activities, core activities, and closing. Learning activities from the stages of preliminary, core and closing activities are selected and implemented so that students practice targeted character values. States that preliminary activities contain learning prerequisite activities in which students work on and summarize material, students receive and understand shared worksheets, students form groups with a certain amount, interaction between teacher's greetings and students, teacher's apperception about the material taught, the teacher reminds the material that has been conveyed before, the teacher submits the feed questions to students and the teacher conveys the scope of the material and activities to be carried out (Marzuki, 2012).

Furthermore, core activities are a learning process to achieve basic competency. Learning activities are carried out interactively, inspiring, fun, challenging, motivating students to actively participate, as well as providing adequate space for initiative, creativity, and independence in accordance with the talents, interests, and physical and psychological development of students.

The last activity in the implementation of character-based learning is the closing activity. The closing activity is an activity carried out to end learning activities that can be done in the form of a summary or conclusion, assessment and reflection, feedback, and follow-up (Marzuki, 2012). The closing activity contains; 1) the teacher and students verbally express the results of the discussion, 2) quiz, 3) assignment, for upcoming meetings, 4) say final greetings. Character i.e. developed Creative, communicative, responsible, hard work.

Further factors that influence student affective are teacher reinforcement. Wibowo (2015: 17) reinforcement or reinforcement is one of the motivational theories which aims to make repetition of behavior given reinforcement. The form of reinforcement given by the teacher to the positive behavior shown by students can be in the form of giving rewards in the form of objects (gifts), verbal (such as praise), and also in the form of warm, permissive, and full acceptance behavior. Whereas negative (punishment) reinforcement is something that if eliminated will increase the response.

The affective competency problem of students is so actual to be discussed, and how appropriate steps are taken to overcome the problem. Many researchers have done it. However, so far the research has not shown the expected solution. The tendency of previous research is limited to general problems, namely learning outcomes. Agus (2017); Surahma et. al. (2016); and Novita et. al. (2017). Therefore, the author tries to purify the learning outcomes in the affective domain on the basis of the problem of student attitudes that tend to do hoax news.

The purpose of this study was to describe and analyze the implementation of character-based economic learning which had an effect on improving affective competency of students of class X social science of SHS in East Jakarta in minimizing hoax.

METHOD

Based on the problems to be studied, this research is classified as descriptive and associative research with quantitative approach. This descriptive research is one form of research that aims to describe the event or the occurrence of variables in the study. The population of this study were all students of class X Social Sciences in Public and Private High Schools in East Jakarta. The population in this study was 1,793 students. Given the size of the population, the sampling is done by proportional random sampling, where the sample will be taken randomly and proportionally (Sugiono, 2012). To determine the number of samples of each class in this study used Slovin formula cited by Umar (2009) as follow:

$$n = \frac{N}{1 + N \cdot e^{-2}}$$

By using the formula above, it can be determined the sum of samples as follows:

$$n = \frac{1793}{1 + 1793(0,01)}$$

Then get the result $n = 94.72$ students. Rounded to 95 students. Based on the calculation of the sum of samples above, then the sum of research samples of each section is like Table 1.

Data collection by giving or distributing a list of statements (questionnaires) about the implementation of character-based economic learning and student affective competence to the respondent with the expectation of respondents to respond to the list of statements. The list of statements is prepared using a Likert scale. Each question has five alternative answers, among others; Strongly Agree, Agree, Mediocre Only, Less Agree, and Disagree. While teachers' reinforcement among others; always, frequently, sometimes, rarely, and never.

Prior to using the research instrument, trials should first be done to obtain valid and reliable statement items, then tested the validity and reliability test. Test the validity of the statement using the *Correlation Product Moment (Pearson)*. As for the reliability test by using *Cronbach Alpha*. The test validity and reliability test carried out minimal to 30 respondents. For $n = 30$, $\alpha = 0.05$. then, $r_{tabel} = 0.361$ with criteria: if $r_{count} > r_{tab}$: the instrument is said to be valid and reliable

if $r_{count} < r_{tab}$: the instrument is said to be invalid and not reliable.

Data analysis techniques used descriptive analysis and and multiple regression

Questionnaires that have been collected and then scored manually to produce accuracy. Furthermore, in the inferential analysis, first tested the classical assumption or prerequisite test such as normality test, homogeneity test. After the prerequisite test is completed, then the hypothesis test is continued. The analysis used is by multiple regression.

FINDINGS AND DISCUSSION

Finding

Distribution of Student's Affective Competence

The results of statistical calculations, the student's affective competence with indicators the response and competence to build relationships with one self can be said that students' affective competency on the response indicator and competence in building relationships with themselves is in a good category. This means that SHS students in East Jakarta have good self-confidence, responsibility, and honesty.

Then the response indicator and competency to build relationships with others that students have the answers and competencies to build relationships with other people, namely a sense of caring, respect for others is said to be good. Whereas on the response indicator and competence to build relationships with the environment, means that the response and

Table 1. Sum of Samples each School

No.	School	Population	Sample
1	SHSS 58	174	(174:1793)x95 = 9
2	SHSS 105	144	(144:1793)x95 = 8
3	SHSS 51	182	(182:1793)x95 = 10
4	SHSS 62	180	(180:1793)x95 = 10
5	SHSS 104	178	(178:1793)x95 = 9
6	SHSS 93	142	(142:1793)x95 = 8
7	SHSS 39	190	(190:1793)x95 = 10
8	SHSS 48	187	(187:1793)x95 = 10
9	SHSP Pangudi Rahayu	58	(58:1793)x95 = 3
10	SHSP Wijaya Kusuma	64	(64:1793)x95 = 3
11	SHSP Teladan 1	62	(62:1793)x95 = 3
12	SHSP Trampil 2	70	(70:1793)x95 = 4
13	SHSP Global Islamic School	96	(96:1793)x95 = 5
14	SHSP Adi Luhur	66	(66:1793)x95 = 3
Total		1.793	95

competency to build relationships with the environment that is owned by students in this case students in adapting to the environment, obeying the rules / norms can be said to be good. Then in the response and competency indicators to build relationships with God, this means that on average students have faith and devotion to God Almighty in good categories. Affective competence of SHS students in East Jakarta is categorized as good.

Frequency Distribution of the Implementation of Character-Based Economic Learning

Based on the results of data processing, it is known that the variable implementation of character-based economic learning with the indicator preliminary activities based character can be interpreted that in the implementation of preliminary activities by teachers against students categorized as quite good. Furthermore,

on the character-based core activity indicators, that SHS teachers in East Jakarta City are able to apply core character-based activities well. Then in the closing activity indicator based on character that the teacher has implemented the core character-based activities well.

The implementation of character-based economic learning can be the implementation of character-based economic learning carried out by the teacher can be said to be good.

Distribution of Teacher's Reinforcement

The results of statistical calculations, the teacher's reinforcement with indicators positive reinforcement can be meaning that the reinforcement of the teacher in the indicator is categorized as still mediocre or it can be said that the teacher still does not provide enough positive reinforcement such as giving a gift, praise for appreciation to students.

Table 1. Frequency Distribution of Student's Affective Competence in Minimizing Hoax

No.	Indicator	Strongly Agree		Agree		Mediocre Only		Less Agree		Disagree		Average (mean)	LRA (%)	Answer Category
		<i>Fi</i>	%	<i>Fi</i>	%	<i>Fi</i>	%	<i>Fi</i>	%	<i>Fi</i>	%			
1	Responses and competencies build relationships with yourself	19	20.00	38	40.00	34	35.79	4	4.21	0	0.00	3.76	75.16	Good
2	Repons and competencies to build relationships with others	29	30.53	48	50.53	16	16.84	2	2.11	0	0.00	3.99	79.79	Good
3	The response and the potential to build relationships with the environment	33	34.74	31	32.63	26	27.37	4	4.21	1	1.05	3.96	79.16	Good
4	Responses and competencies build relationships with God Almighty	38	40.00	42	44.21	14	14.74	1	1.05	0	0.00	4.23	84.63	Good
Variable Rate		29	30.53	40	42.11	23	24.21	3	3.16	0	0.00	4.00	80.00	Good

Table 2. Frequency Distribution of The Implementation of Character-Based Economic Learning

No.	Indicator	Strongly Agree		Agree		Mediocre Only		Less Agree		Disagree		Average (mean)	LRA (%)	Answer Category
		<i>Fi</i>	%	<i>Fi</i>	%	<i>Fi</i>	%	<i>Fi</i>	%	<i>Fi</i>	%			
1	Preliminary activities based character	28	29.47	41	43.16	22	23.16	3	3.16	1	1.05	3.97	79.37	Good
2	Preliminary activities based character	22	23.16	48	50.53	21	22.11	3	3.16	1	1.05	3.89	77.71	Good
3	Closing activities based character	26	27.37	44	46.32	21	22.11	3	3.16	1	1.05	3.96	79.16	Good
Variable Rate		25	26.32	44	46.32	22	23.16	3	3.16	1	1.05	3.94	78.74	Good

While the reinforcement of the teacher on the indicator of negative reinforcement, the teacher still does not provide negative reinforcement such as giving punishment or punishment or sanction to students who make problems in teaching and learning activities. Still mediocre. It should be improved. That the SHS teacher reinforcement in the city of East Jakarta is in the Moderate category.

Multiple linear regression analysis is used to determine how the influence of independent variables on the dependent variable is the implementation of character-based economic learning (X_1) and teachers' reinforcement (X_2) on student affective competence (Y). The following can be seen the estimated value of multiple linear regression:

Based on the table above can be written the multiple linear regression equation obtained as follows:

$$Y_i = a + b_1X_1 + b_2X_2 + e_i \quad (1)$$

$$v_i = 21,074 + 0,511 X_1 + 0,078 X_2 \quad (2)$$

The equation above can be seen that the constant is 21,074. This means that if the implementation of economic learning is character-based, and the teacher's reinforcement is fixed, the student's affective competency value is 21,074 units. Then the regression estimation value of the implementation variable of

character-based economic learning (X_1) is 0.511 units, this means that if the implementation of character-based economic learning is increased by 1, then the affective competence of students (Y) will increase by 0.511 units. This means that the increasing implementation of character-based economic learning will also increase students' affective competencies. Partial contribution to the implementation of character-based economic learning (X_1) on student affective competence (Y) is 0.603 assuming other variables remain.

Furthermore, on the variable teachers' reinforcement (X_2) the estimated regression value is 0.078. Can be interpreted if the teachers reinforcement (X_2) is increased by 1 unit, then the affective competence of students (Y) will increase by 0.078 units. Partial contribution of teacher's reinforcement (X_2) to student affective competence (Y) is 0.141 assuming other variables remain.

While the determinant coefficient (R^2) obtained $(0.659)^2$ is 0.435. This shows that the implementation of character-based economic learning and the teacher's reinforcement together contribute to the student's Affective competence by 43.5%, while the remaining 56.5% is contributed by other factors not identified in this study. In addition, the level of influence on the implementation of character-based economic learning factors, and the reinforcement of teachers on student affective competence is 65.9%.

Table 3. Frequency Distribution of Teacher's Reinforcement

No.	Indicator	Always		Frequently		Sometimes		Rarely		Never		Average (mean)	LRA (%)	Answer Category
		Fi	%	Fi	%	Fi	%	Fi	%	Fi	%			
1	Giving positive reinforcement	18	18.95	27	28.42	27	28.42	14	14.74	9	9.47	3.33	66.53	Medicore
2	Giving negative reinforcement	10	10.53	24	25.26	21	22.11	19	20.00	21	22.11	3.04	60.82	Medicore
	Variable Rate	14	26.32	26	27.37	24	25.26	16	16.84	15	15.79	2.93	61.68	Medicore

Table 4. Multiple Linear Regression Estimates

Model	Unstandardized Coefficients		Standardized Coefficients	Partial	t	Sig.	Information
	B	Std.Error	Beta				
1	(Constant)	21.074	3.218		6.549	0.000	
	X_1	0.511	0.070	0.609	0.603	7.258	0.000
	X_2	0.078	0.057	0.115	0.141	1.365	0.175
a.	Dependent Variable: Y, $R^2 = (0,659)^2$						

The first hypothesis can be seen that t_{count} value for the implementation variable of character-based economic learning (X_1) is 7.258 while the t_{tab} is 1.986. Because $t_{\text{count}} > t_{\text{tab}}$, the alternative hypothesis (H_a) is accepted and the null hypothesis (H_0) is rejected. This means that there is a significant influence on the implementation of character-based economic learning on students' affective competencies. So it can be concluded that partially the implementation of character-based economic learning has a positive and significant effect on students' affective competencies.

Furthermore, for the second hypothesis, it is known that the t_{count} value for the teachers' reinforcement variable is 1.365 while the t_{tab} is 1.986. This means $t_{\text{count}} < t_{\text{tab}}$ then the alternative hypothesis (H_a) is rejected and the null hypothesis (H_0) is accepted. This means that there is no significant influence of teachers' reinforcement on students' affective competencies. So it can be concluded that partially the teachers' reinforcement has a positive but not significant effect on students' affective competencies.

Obtained $F_{\text{count}} > F_{\text{tab}}$ which is 35,361 > 3,095 with significant level $0,00 < 0,05$. This means that the null hypothesis (H_0) is rejected and the alternative hypothesis (H_a) is accepted. This means that together there is a significant influence on the implementation of character-based economic learning, and the teachers' reinforcement on students' affective competencies.

Discussion

The Effect Implementation of Character Based Economic Learning on the Affective Competence of Class X Social Science SHS Students in East Jakarta City

Based on the results of hypothesis testing it can be seen that the implementation of character-based economic learning has a positive and significant effect on students' affective competencies. It can be interpreted that if the teacher in the school implements or implements consistent character-based economic learning activities, it will have a tremendous impact on improving students' affective competencies. In broad terms according to the topic of this research, that students will reduce unethical behavior,

reduce behavior that violates norms such as; the habit of saying inappropriate words, hate speech, posting hoax news on social media, and so on. Conversely, if the implementation of character-based economic learning is lacking or not even well implemented, carelessly, then the affective / student attitudes experience decadence, learning outcomes in the affective domain will worsen.

The results of this research support previous research by (Katilmis, et al. 2011; Chau-kiu Cheung & Tak-yan Lee, 2010; and Pipin, Umi, 2016) which states that character education influences knowledge, skills, and behavior in a positive direction toward students' scientific value.

The Effect of Teacher's Reinforcement on the Affective Competence of Class X Social Science SHS Students in East Jakarta City

Based on the results of hypothesis testing it can be seen that the reinforcement of the teacher does not have a significant influence on the affective competence of the students of class X Social Science SHS in East Jakarta. However, the direction is positive. This means that the teacher's reinforcement is not enough to give meaning or change in improving the affective competence of X Social Science SHS students in East Jakarta. Based on the results of the descriptive analysis, the level of achievement of respondents for teacher reinforcement variables was only 61.68%. While the level of achievement of respondents for student affective competence variables is 80.00%. This means that even though the teacher's reinforcement is still lacking by SHS teachers in East Jakarta, it does not cause a decline in affective competence or student attitudes. However, please note that the form of influence shows a positive direction. This can be interpreted that the more often the teacher's reinforcement is carried out, the more likely the student's competence will be even better.

Although the results of this study are not in line with some expert opinions or theories / assumptions / postulates that are still valid today, it is natural. Researchers measured samples in the megapolitan city in this case the city of East Jakarta. Characteristics of students in big cities will not be the same as the characteristics of students in other regions. It is possible that

students in East Jakarta do not really want the reinforcement of teachers to improve their attitudes, affective competencies. However, they are much more demanding of more dominant factors such as the implementation of character-based economic learning, learning independence, parental attention, a more conducive learning environment, and others. This is evident, the implementation of character-based economic learning is able to boost the affective competency of SHS students in East Jakarta

The Effect of the Implementation Character Based Economic Learning and Teacher's Reinforcement on the Affective Competence of Class X Social Science SHS Students in East Jakarta City

Based on the results of hypothesis testing it can be seen that the implementation of character-based economic learning has a significant effect on affective competency of students of class X Social Science SHS in the city of East Jakarta. While the reinforcement of the teacher did not have a significant effect on the affective competence of the students of class X Social Science SHS in the city of East Jakarta.

However, both showed positive influence. This means that the more applied economic learning is based on the character of the reinforcement of the teacher in learning activities, the more affective competence of the students of class X Social Science SHS will be in the city of East Jakarta. Conversely, if character-based economic learning is not consistent in its application, and the reinforcement of the teacher is never carried out in learning activities, then the affective competence will worsen the students of class X Social Science SHS in East Jakarta.

The results of this research support previous research by (Derlina sabani, Satria, 2015; Ghufon et. al., 2017; Nurvalah et. al., 2016; Wuryandani et. al. 2016; and Pipin & Chotimah, 2016).

The author is aware of the limitations of the results of this study. This is due to the extent to which the author's knowledge, where there are not many or even not yet specifically, that other researchers previously discussed studies related to "minimizing hoax". This is where our novelty is trying to try to find a problem solving

about "minimizing hoax" in terms of educational aspects. The author believes that "minimizing hoax" is a part or indicator of learning outcomes in the affective domain. Even though the results of this study are far from what was expected by the readers.

CONCLUSION

Based on the research that the author did, it can be concluded:

1. Partially the implementation of character-based economic learning has a positive and significant effect on affective competency of students of class X Social Science SHS in East Jakarta. This means that the more consistent the implementation of character-based economic learning, the better the attitude / moral or affective competence of students. Conversely, if the implementation of character-based economic learning is not carried out consistently, then the attitude / moral or affective competence of students will be worse.
2. Partially the teachers' reinforcement does not have a significant effect on the affective competence of the students of class X Social Science SHS in East Jakarta. This means that the high and low teachers' reinforcement does not significantly affect the improvement of students' affective competencies.
3. Simultaneously there is a positive and significant influence between the implementation of character-based economic learning and the teachers' reinforcement on affective competencies of class X Social Science SHS students in East Jakarta. This means that the more improved, continuous, consistent the implementation of character-based economic learning, and the teachers' reinforcement, it is likely to give a better moral change or affective competence.

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APPLICATION OF E-MARKETING IN ENTREPRENEURSHIP LEARNING FOR STUDENT WITH INTELLECTUAL DISABILITY

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Abstract: Entrepreneurship learning is a process that equips students in developing their soul, attitude, and carefulness in seeing opportunities and organizing the sustainability of a business. This study set out to investigate the effect of e-marketing towards the understanding of marketing in entrepreneurship learning of senior high school students with mild intellectual disability through e-marketing. A quantitative approach with one group pretest-posttest design was used in this study. A total of 24 students with mild intellectual disability from three schools in Magelang and Temanggung Regency participated in this study. A purposive sampling was applied in selecting these senior high school students. The data in this study were collected through a test. Anon-parametric statistical analysis technique, i.e. Wilcoxon sign rank test, was used to analyze the data. Based on data analysis performed, the calculated Z value is -4.115 with Asymp. Sig (2-tailed) 0.000 at significant (α) 0.05 level. The results indicated that the students mean score after the treatment was significantly higher than their average score before the treatment. It is then concluded that the application of e-marketing has an effect in improving the understanding of marketing in entrepreneurship learning of senior high school students of with mild mental disability.

Keyword: *e-marketing, entrepreneurship learning, intellectual disability*

PENERAPAN *E-MARKETING* DALAM PEMBELAJARAN KEWIRAUSAHAAN SISWA TUNAGRAHITA RINGAN TINGKAT SMA

Abstrak: Pembelajaran kewirausahaan merupakan pembelajaran yang membekali siswa dalam mengembangkan jiwa, sikap, kejelian dalam melihat peluang dan pengorganisasian dalam keberlangsungan suatu usaha. Penelitian ini bertujuan untuk mengetahui pengaruh *e-marketing* terhadap pemahaman pemasaran dalam pembelajaran kewirausahaan siswa tunagrahita ringan tingkat SMA melalui *e-marketing*. Penelitian menggunakan pendekatan kuantitatif dengan desain *one group pretest-posttest*. Subjek penelitian berjumlah 24 siswa tunagrahita ringan dari tiga sekolah di tiga kota yang berbeda yakni Magelang, and Temanggung. Sampel diambil secara purposif, yaitu siswa yang berada di tingkat SMA. Teknik pengumpulan data menggunakan tes. Analisis data menggunakan teknik analisis *statistic nonparametric Wilcoxon sign rank test*. Berdasarkan analisis data yang dilakukan, diperoleh nilai Z adalah -4,115 dengan *Asymp. Sig (2-tailed)* 0,000 pada taraf signifikan (α) 0,05. Hasil dari penelitian menyatakan bahwa nilai rata-rata sesudah diberikan perlakuan lebih tinggi secara signifikan daripada hasil nilai rata-rata sebelum diberikan perlakuan. Hal itu dapat disimpulkan bahwa penerapan *e-marketing* berpengaruh meningkatkan pemahaman pemasaran dalam pembelajaran kewirausahaan siswa tunagrahita ringan tingkat SMA.

Kata kunci: *e-marketing, pembelajaran kewirausahaan, tunagrahita*

PENDAHULUAN

Tunagrahita merupakan sindrom yang ditandai dengan gangguan klinis yang signifikan dalam kognisi, regulasi, emosi atau perilaku individu yang mencerminkan disfungsi dalam proses psikologi, biologi atau perkembangan yang mendasari fungsi mental (*American Psychiatric*

Association, 2013:20). Para penyandang tunagrahita memiliki kecerdasan di bawah rata-rata manusia pada umumnya. Dalam beberapa kasus hal ini dapat menyebabkan beberapa permasalahan atau hambatan pada masa perkembangan hidupnya (Gallagher, 1986).

Secara lebih spesifik tunagrahita dapat diklasifikasikan menjadi 4 tingkat, yaitu ringan, sedang, berat dan sangat berat (Dunlap, 2009:165). Keempat tingkat tunagrahita tersebut memerlukan penanganan yang berbeda. Tuna grahita dengan klasifikasi ringan tidak memiliki perbedaan yang mencolok dengan individu normal lainnya pada masa sekolah dasar. Tunagrahita pada tingkat ini tidak memiliki kelainan fisik neurologis yang tampak. Mereka mampu hidup mandiri dengan berbagai dukungan yang sesuai, memiliki kemampuan bekerja dan menyesuaikan diri dengan lingkungannya dan berkomunikasi meski dalam tingkat yang rendah (Matson, 2007:31-32; Hallahan, Kauffman, & Pullen, 2009:178). Meskipun tunagrahita ringan tidak mengalami hambatan yang serius, mereka kesulitan untuk mengenali potensinya, sulit melihat peluang kerja, tidak memiliki kemampuan daya saing dan tidak peka terhadap suatu pekerjaan (Mumpuniarti, 1998:15; Mumpuniarti, 2006:17).

Permasalahan yang masih berlangsung saat ini adalah memenuhi kebutuhan khusus penyandang tuna grahita agar mampu mandiri dalam kehidupan bermasyarakat (Mumpuniarti, 2012:493). Layanan pendidikan yang diberikan perlu menekankan determinasi diri, seperti kemampuan untuk membuat keputusan pribadi, mengatur kehidupannya sendiri dan mendukung dirinya sendiri (Wehmeyer & Schwartz, 2015). Untuk dapat mencapai determinasi diri tersebut diperlukan instruksi secara sistematis. Instruksi yang lebih efektif bagi penyandang tuna grahita ialah dalam situasi kehidupan nyata dan dengan materi yang ada dalam kehidupannya serta diperlukan pengukuran tingkah laku fungsional dan dukungan terhadap tingkah laku positif (Hallahan et al, 2009:149-158).

Layanan pendidikan bagi siswa tunagrahita ringan dimaksudkan untuk mengembangkan potensi siswa sesuai dengan minat dan bakatnya sehingga dapat menjadi pribadi yang mandiri. Kemandirian pada pandangan masyarakat umumnya berkaitan dengan kemampuannya dalam menghasilkan penghasilan demi memenuhi kebutuhan hidupnya sendiri. Sebenarnya, fokus bekerja bukan hanya pada masalah ekonomi, tetapi juga menyangkut eksistensi dan bentuk aktualisasi diri. Berdasarkan data yang diperoleh dalam penelitian Rokhim & Handoyo (2015:5) makna karir dan bekerja bagi para pekerja pe-

nyandang disabilitas, yang termasuk di dalamnya penyandang tunagrahita, adalah sebagai: (1) eksistensi diri, (2) usaha mengumpulkan modal, (3) usaha untuk beradaptasi dengan lingkungan sosial, (4) penghasil tambahan, dan (5) sumber penghasilan utama.

Begitu pentingnya sebuah pekerjaan bagi masyarakat, tidak terkecuali penyandang disabilitas, mendorong pemerintah untuk menyusun peraturan khusus tentang hak penyandang disabilitas atas pekerjaan dan kewirausahaan yang tertuang dalam Undang-Undang Republik Indonesia No. 8 Pasal 11 dan pasal 53 Tahun 2016. Pada pasal 53 disebutkan peluang pekerjaan bagi penyandang disabilitas pada perusahaan Negara sebanyak 2% dan 1% bagi perusahaan swasta. Meski telah disebutkan pada undang-undang, fakta yang ada menunjukkan bahwa aturan tersebut belum dapat terlaksana. Hasil survey ICF di 14 provinsi menunjukkan bahwa 74,4% penyandang disabilitas tidak memiliki pekerjaan (Irwanto, Eva, Fransiska, Lusli, & Siradj, 2010). Persentase tertinggi jumlah penyandang disabilitas yang tidak memiliki pekerjaan tersebut diduduki oleh para tunagrahita.

Sulitnya mendapatkan pekerjaan menjadi salah satu faktor meningkatnya minat masyarakat dalam berwirausaha. Berwirausaha mampu memberikan manfaat antara lain memberi peluang dan kebebasan untuk menciptakan tujuan sendiri dan mengendalikan nasib sendiri; memberi peluang berkontribusi untuk Negara dalam mengurangi angka pengangguran; memberi peluang untuk mencapai potensi diri sepenuhnya; memiliki peluang untuk memperbaiki ekonomi dengan mendapatkan penghasilan yang tak terbatas; membangun pribadi dengan karakter dan kepribadian yang baik; dan dapat melakukan sesuatu sesuai minat (Saiman, 2014; Mumpuniarti, 2004).

Keuntungan yang lebih spesifik dalam berwirausaha bagi tunagrahita yaitu tingkat fleksibilitas yang tinggi terhadap waktu dan tuntutan dalam bekerja. Sesuai dengan pernyataan ODEP (2013:3) yang menyatakan bahwa wirausaha memungkinkan seorang individu menyesuaikan pengalaman kerja mereka secara khusus dengan kebutuhan mereka dan merancang lingkungan kerja yang mengoptimalkan fleksibilitas dan akomodasi yang diperlukan dalam pekerjaan mereka. Berwirausaha merupakan proses mencari serta mengevaluasi peluang dan resiko,

mengembangkan dan melaksanakan rencana untuk menerjemahkan peluang tersebut ke dalam swasembada keuangan (*National Collaborative on Workforce and Disability/NCWD*, 2017). Dengan kata lain, dalam berwirausaha membutuhkan sikap yang berani, bertanggungjawab, jeli terhadap peluang yang tersedia, kreatif dan inovatif.

Untuk mampu mencapai kebutuhan dalam berwirausaha, siswa tunagrahita memerlukan dukungan dari lingkungan sekitar (Hallahan et al, 2009:158; Smith & Tyler, 2010:271). Pemberian dukungan terbukti dapat memberikan kesempatan bagi siswa tunagrahita untuk berinteraksi sosial, membangun karir serta mengembangkan keterampilannya sehingga mereka lebih produktif dan dihargai masyarakat (Kelley & Westling, 2013; Beyer, Brown, Akandi, & Rapley, 2010). Salah satu dukungan yang dapat diberikan yaitu pembelajaran kewirausahaan (Purwanta, Hermanto, Sukinah, & Harahap, 2016: 339-348).

Menurut penelitian Rosana, Suwarna, & Tiarani (2012: 86), keterampilan kewirausahaan dapat ditingkatkan melalui pembelajaran kewirausahaan yang melibatkan lima strategi yang dilaksanakan secara terpadu, yaitu (1) *creative critical constructive imagination*, yaitu meningkatkan kemampuan berpikir kritis, imajinatif dan kreatif; (2) *entrepreneurial real life experience*, yaitu memberikan pengalaman belajar melalui pengalaman nyata seperti praktik atau simulasi; (3) *educative disequilibrium conditioning, coaching and mentoring with collaboration and competition*, yaitu merancang pembelajaran melalui simulasi dalam kondisi disequilibrium agar dapat memberikan pengalaman untuk menghadapi situasi gagal dan menemukan solusinya, serta mengembangkan strategi kerjasama dan kompetisi agar siswa dapat berkolaborasi dan meningkatkan keunggulan mereka; dan (4) *community and market impact and involvement*, yaitu melibatkan siswa dalam kehidupan kewirausahaan secara nyata melalui pendampingan.

Omede (2016:127-128) menyatakan bahwa pembelajaran kewirausahaan mencakup program pengembangan keterampilan kreatif, pengembangan produk dan pemasaran, negosiasi, pelatihan kepemimpinan dan penciptaan kekayaan. Beberapa penelitian yang sudah ada terkait dengan penerapan pembelajaran kewirausahaan lebih banyak berfokus pada penciptaan

produk dan pengembangan karakter kewirausahaan. Seperti halnya penelitian yang dilakukan oleh Samsudi (2014) untuk memproduksi barang maupun jasa sebagai upaya untuk pengembangan karakter kewirausahaan pada siswa dan penelitian Sukardi, Ismail, & Suryanti (2014) yang membuat model pembelajaran kewirausahaan untuk membuat kerajinan dari keunggulan lokal.

Demikian juga dengan fakta di lapangan. Peneliti melakukan studi pendahuluan (pengamatan kegiatan pembelajaran dan wawancara kepada guru) di tiga sekolah khusus (Sekolah Luar Biasa) yang menunjukkan bahwa pembelajaran kewirausahaan yang dilakukan pada umumnya masih terfokus pada pengembangan produk. Pengembangan keterampilan pemasaran belum begitu difokuskan. Menurut studi pendahuluan ini, ada beberapa faktor yang menjadi hambatan dalam pengembangan keterampilan pemasaran dalam pembelajaran untuk tunagrahita antara lain: (1) minimnya anggaran, waktu dan tempat yang dimiliki sekolah untuk mengadakan program pengembangan pemasaran, (2) stigma negatif masyarakat terhadap produk hasil karya siswa tunagrahita, (3) kemampuan berkomunikasi siswa tunagrahita yang tergolong masih rendah, dan (4) tingkat percaya diri siswa tunagrahita yang rendah.

Pengembangan pemasaran yang tidak dilaksanakan di sekolah menyebabkan siswa tidak memiliki pengetahuan dalam bidang pemasaran. Mereka menjadi sangat bergantung pada guru dalam proses pemasaran produk. Keterampilan produksi yang dimiliki siswa menjadi sia-sia ketika mereka telah selesai masa pendidikannya / pasca sekolah. Siswa tunagrahita pasca sekolah tidak mampu memanfaatkan keterampilan produksi yang dimilikinya untuk mengembangkan sampai tahap menciptakan usaha. Mereka mampu memproduksi tetapi tidak mampu menjual produknya sehingga berdampak pada tidak terciptanya perputaran ekonomi yang seimbang dan menguntungkan.

Permasalahan yang terjadi dalam pengembangan pemasaran di sekolah bagi siswa tunagrahita diduga dapat diatasi dengan pemanfaatan teknologi. Perkembangan teknologi saat ini berdampak pada pergeseran yang terjadi pada bidang usaha. Pemasaran melalui media internet (media sosial, misalnya *facebook* atau *instagram*) atau *e-marketing* berkembang begitu cepat. Internet

terus tumbuh dengan cepat dan sudah digunakan oleh lebih dari satu miliar pengguna (Chaffey & Smith, 2013). Internet memberikan kemudahan bagi penggunanya untuk mengakses informasi, berkomunikasi dengan orang di seluruh dunia dan berbagi berbagai hal seperti artikel, video, foto dan media lainnya (Stokes, 2011; Chaffey & Smith, 2013). Selama dua dekade terakhir, para pemasar mulai membangun usaha dengan memanfaatkan kekuatan internet tersebut (Stokes, 2011). Proses pemasaran yang sebelumnya dilakukan secara tradisional telah mulai beralih ke pemasaran melalui internet, yang dikenal sebagai *e-marketing* Chaffey & Smith, 2013).

Perkembangan tersebut dipengaruhi oleh berbagai kemudahan yang ditawarkan *e-marketing*, diantaranya yaitu karena tidak terbatas waktu, lokasi, subjek dan biaya dalam pelaksanaannya serta mudahnya terhubung dengan pelanggan atau penjual tanpa bertemu secara langsung (Peter & Olson, 2013:278-279; Kuratko & Hotgetts, 2007: 299-301). Pelaksanaan pengembangan pemasaran melalui *e-marketing* belum banyak dilaksanakan di sekolah luar biasa, sehingga belum banyak diketahui pengaruhnya. Oleh karena itu, penelitian ini dilakukan guna mengetahui apakah *e-marketing* dalam pembelajaran dapat berpengaruh terhadap pemahaman pemasaran dalam pembelajaran kewirausahaan siswa tunagrahita ringan.

METODE

Penelitian ini adalah penelitian eksperimen dengan menggunakan desain *one group pretest-posttest design*. Hipotesis yang diuji adalah bahwa “*e-marketing* berpengaruh meningkatkan pemahaman pemasaran siswa tunagrahita ringan tingkat Sekolah Menengah Atas”. Penelitian dilakukan di tingkat SMA (rentang usia 15–18 tahun), yaitu berlokasi di Sekolah Luar Biasa C (SLB-C) Negeri di Kota Temanggung, SLB-C Swasta di Kota Magelang dan SLB-C Swasta di Kota Secang. Ketiga sekolah tersebut berpartisipasi secara sukarela dalam penelitian ini. Total terdapat 24 siswa tunagrahita ringan tingkat SMA dengan teknik pengambilan *purposive random sampling*. Siswa tunagrahita kategori ringan yang berada pada ketiga sekolah tersebut mengikuti pembelajaran dalam penelitian ini. Pemilihan pada tingkat SMA karena pada tingkatan tersebut siswa sudah semakin dekat

dengan waktu selesainya masa pendidikan dan akan memasuki lingkungan masyarakat yang lebih luas. Di samping itu, pada tingkat tersebut siswa sudah memasuki masa dewasa yang mana kebutuhan hidup dan tuntutan masyarakat akan dirinya semakin meningkat.

Dalam penelitian ini, siswa di kelas-kelas reguler yang menjadi subjek penelitian diberikan perlakuan (*treatment*) berupa pembelajaran menggunakan *e-marketing* dalam jangka waktu dua bulan (dua kali pertemuan dalam satu minggu, setiap pertemuan berdurasi 2 x 45 menit). Siswa mempelajari dasar-dasar pemasaran dan berwirausaha sampai dengan menggunakan *e-marketing* dengan pendekatan berpusat pada siswa, yaitu siswa berinteraksi aktif dengan pengajar untuk memahami materi yang disajikan. Strategi yang digunakan bervariasi, yaitu diskusi dengan guru, diskusi antar siswa, dan praktik *e-marketing* menggunakan media sosial yang sudah dikenal siswa yaitu *facebook* dan *instagram*.

Pengukuran dilakukan sebelum dan sesudah diberikan perlakuan untuk mengetahui pengaruh hasil dari pengukuran awal (*pretest*) dan pengukuran akhir (*posttest*) yang merupakan hasil dari perlakuan yang diberikan. Metode pengumpulan data tes tertulis dalam dua bagian soal yang terdiri dari 10 soal pada bagian pertama dan 5 soal pada bagian kedua. Tes tertulis ini digunakan untuk mengetahui tingkat kemampuan dan pemahaman siswa terkait pemasaran dalam berwirausaha. Siswa diminta menyelesaikan tes ini tanpa membuka sumber referensi atau bertanya kepada orang lain. Tes dilaksanakan setelah pembelajaran selesai dilaksanakan. Teknik analisis data pada penelitian ini menggunakan teknik analisis *statistic non prametrik Wilcoxon sign rank test*.

HASIL PENELITIAN DAN PEMBAHASAN

Hasil

Pengujian persyaratan analisis dilakukan dengan membandingkan *Asymp.sig (2-tailed)* dengan taraf signifikan (α) 5% untuk mengetahui keputusan hipotesis diterima atau ditolak. Hasil analisis hasil penelitian penerapan *e-marketing* dalam pembelajaran kewirausahaan peserta didik tunagrahita ringan tingkat SMA, disajikan pada Tabel 1.

Tabel 1. Deskripsi Hasil Analisis

Nilai rata-rata	Hasil uji-Z
Pretest = 6,2471	Z = -4.115
Posttest = 8,6912	p = 0.000

Hipotesis “*e-marketing* berpengaruh meningkatkan pemahaman pemasaran siswa tunagrahita ringan tingkat SMA” diterima kebenarannya. Hasil analisis yang menunjukkan terdapat perbedaan signifikan nilai rata-rata antara *pretest* dan *posttest*. Dapat dikatakan bahwa peningkatan nilai rata-rata *pretest* dan *posttest* tersebut dipengaruhi oleh adanya penerapane-*marketing* dalam pembelajaran kewirausahaan.

Pembahasan

E-marketing merupakan strategi pemasaran yang menggunakan media teknologi perangkat dalam bentuk telepon pintar (*smartphone*) atau komputer yang terhubung dengan jaringan internet (Kaur, Pathak, & Kaur, 2015). *E-marketing* juga dapat didefinisikan sebagai proses membangun dan mempertahankan hubungan dengan pembeli melalui aktivitas secara *online* untuk memfasilitasi pertukaran ide, produk dan pelayanan sehingga dapat memenuhi tujuan penjual maupun pembeli. *E-marketing* meliputi aktifitas periklanan, promosi dan publikasi yang menentukan tampilan dan rasa dari suatu produk, bagaimana produk akan dijual dan dikirim kepada pembeli dan lain sebagainya (Kaur et al, 2015).

Penggunaan internet dalam pemasaran memiliki beberapa keunggulan. Internet memfasilitasi berbagai informasi yang *up-to-date* sehingga mampu memacu motivasi penggunaanya (Oetomo, 2002:5). Begitu juga dengan siswa tunagrahita yang terpacu untuk belajar tentang pemasaran melalui media internet. Aplikasi berbasis internet yang digunakan dalam *e-marketing* pada pembelajaran kewirausahaan siswa tunagrahita ringan tingkat SMA dalam penelitian ini adalah *facebook* dan *instagram*.

Facebook dan *instagram* sebagai media sosial menyediakan saluran komunikasi dua arah yang efektif dan saluran siaran *real time* (Stokes, 2011). Komunikasi dua arah inilah yang membuat media tersebut menarik dan menantang. Para konsumen dapat berkomunikasi satu sama lain dan mengirim pesan ke penjual sehingga penjual dapat menggunakan media ini untuk berkomunikasi dengan konsumen dan

menjangkau public secara luas. Dengan adanya komunikasi dua arah ini, konsumen jugadapat berpartisipasi, berdialog, mengungkapkan minat, meminta produk dan layanan, menyarankan perbaikan, dan memberikan umpan balik sehingga penjual pun dapat memahami minat konsumen (Chaffey & Smith, 2013). Berbagai kemudahan yang ditawarkan oleh media sosial ini membuat media sosial ini semakin menjadi alternatif alat komunikasi publik yang efektif dalam pemasaran (Stokes et al, 2011).

Pemilihan *facebook* dan *instagram* dalam penelitian ini didasarkan atas data bahwa kedua aplikasi tersebut merupakan aplikasi yang sudah dikenal oleh siswa dan guru. *Facebook* dan *instagram* menduduki peringkat teratas akan banyaknya pengguna jejaring sosial saat ini. Berdasarkan hasil survey yang dilakukan oleh Tim Polling Indonesia, APJII (Asosiasi Penyelenggara Jasa Internet Indonesia) tahun 2016, mayoritas pengguna internet adalah masyarakat usia 25-34 tahun, kemudian disusul pengguna usia 10-24 tahun, dan usia seterusnya. Konten media sosial yang sering dikunjungi yaitu *facebook* pada peringkat pertama pengguna terbanyak, kemudian *instagram* dan kemudian media sosial lainnya.

Di samping itu, *facebook* dan *instagram* banyak digunakan oleh anak seusia siswa tunagrahita sehingga siswa tertarik untuk terlibat secara langsung dalam pembelajaran yang menggunakan kedua media sosial tersebut. Keterlibatan siswa secara aktif mampu memudahkan siswa dalam memahami materi yang disampaikan oleh guru. Keterlibatan siswa dalam pembelajaran yang dimulai dari mencari informasi, sampai membuat keputusan dapat meningkatkan pemahaman yang lebih tinggi dibandingkan dengan siswa yang tidak terlibat dalam hal apapun (Shively, 2015; Wijaya, 2015:87-98; Suparno, 2001:122; Sumarsih, 2009:55-62).

Berdasarkan observasi, penggunaan dan pemanfaatan *facebook* dan *instagram* yang diketahui oleh kebanyakan siswa baru sebatas untuk hiburan dan berkomunikasi. Mereka belum mengetahui fungsi lainnya dari *facebook* dan *instagram*. Padahal *facebook* dan *instagram* dapat difungsikan sebagai media dalam bidang ekonomi seperti media promosi. Dalam penggunaannya, siswa perlu diarahkan agar lebih mampu memilah dan memfungsikan kedua media tersebut untuk hal yang positif dan menguntungkan. Terlebih bagi siswa tunagrahita ringan tingkat SMA.

Selama ini, siswa tunagrahita memiliki pengetahuan pemasaran melalui interaksi antara penjual dan pembeli secara langsung. Pengetahuan mereka terkait pemasaran hanya terbatas pada makna bahwa pemasaran merupakan kegiatan jual beli. Padahal, pemasaran memiliki makna yang tidak hanya terbatas pada kegiatan jual beli. Pemasaran adalah tentang identifikasi dan memenuhi kebutuhan manusia dan sosial (Kotler & Keller, 2016). Secara lebih teknis, pemasaran dapat didefinisikan sebagai proses yang utuh sebagai upaya pemenuhan kebutuhan konsumen yang meliputi perencanaan, penetapan, atau penciptaan produk, penetapan harga yang sesuai, perencanaan dan pelaksanaan proses tukar menukar di lokasi yang tepat, pada waktu yang tepat dan dengan cara yang tepat (Saiman, 2014:217).

Pemasaran melalui internet memiliki definisi yang tidak jauh berbeda dengan pemasaran langsung. Hal yang menjadi pembeda yaitu media yang digunakan dalam promosi dan komunikasi. Kaur et al (2015) menyebutkan bahwa pemasaran merupakan proses manajemen yang bertanggung jawab untuk mengidentifikasi, mengantisipasi, dan memuaskan pelanggan. Proses identifikasi tersebut berarti menggunakan internet untuk riset pemasaran untuk mencari tahu kebutuhan dan keinginan pelanggan. Proses antisipasi berarti internet menyediakan saluran tambahan sehingga pembeli dapat mengakses informasi dan melakukan pembelian. Pemahaman tentang permintaan pembeli ini merupakan kunci untuk mengatur alokasi sumber daya *e-marketing*. Sementara kunci keberhasilan dalam *e-marketing* adalah mencapai kepuasan pelanggan melalui saluran elektronik. Hal ini kemudian memberikan tantangan bagi penjual untuk dapat merancang media pemasaran melalui internet yang mudah digunakan.

Keterampilan pemasaran yang dimiliki siswa terbatas pada melayani penjualan kepada konsumen. Bila keterampilan siswa terbatas pada tahap melayani konsumen, maka keterampilan yang dimiliki belum termasuk dalam kategori keterampilan pemasaran. Dalam pemasaran harus mencakup 4 komponen. Keempat komponen yang dimaksudkan yaitu produk, harga, distribusi dan promosi (Hermawan, 2012:33). Keempat komponen tersebut dapat diuraikan dengan makna pemasaran harus mampu menyediakan produk, menetapkan harga, menentukan jenis

saluran distribusi yang digunakan, dan mampu secara kreatif dan inovatif dalam mempromosikan produk.

Kemampuan dalam menyediakan produk dapat dilakukan dengan memproduksi produk itu sendiri atau dengan cara membeli dari pihak lain kemudian dijual kembali. Produk dapat berupa jasa atau barang. Dalam kegiatan penyediaan produk, siswa melakukan dengan memproduksi produk sendiri. Siswa belum memiliki inisiatif untuk menyediakan produk dengan membeli dari pihak lain atau yang biasa disebut dengan istilah kulakan.

Penetapan harga yang dipelajari siswa dengan berbagai metode, yaitu (1) dengan metode *mark-up* yaitu, dengan menambahkan jumlah modal dengan laba yang diinginkan; (2) penetapan harga dengan menentukan tingkat pengembalian atas investasi sarannya, cara ini sering ditemui dengan istilah *cash back*; (3) penetapan nilai anggapan, yaitu dengan cara menentukan nilai berdasarkan citra pembeli akan produk. Semakin baik citra yang dimiliki produk, maka harga dapat semakin tinggi; (4) penetapan harga dengan mengenakan nilai yang cukup rendah dengan penawaran kualitas tinggi yang sering dikenal dengan istilah *promo*; (5) penetapan harga *on going*, yaitu menetapkan harga dengan memperhatikan harga pesaingnya dengan nilai di bawah, di atas atau sama dengan harga pesaingnya (Keller & Kotler, 2009: 83-90). Kemampuan penetapan harga yang dimiliki siswa terbatas pada metode *mark-up* harga, dan hal tersebut dilakukan dengan berdiskusi dengan guru.

Penentuan saluran distribusi dapat dilakukan dengan mengenali karakteristik produk dan tujuan pemasarannya. Dalam pemasaran, terdapat 4 macam saluran distribusi, yaitu (1) produsen–konsumen, (2) produsen – pengecer - konsumen, (3) produsen–pedagang grosir – pengecer–konsumen, (4) produsen–pedagang grosir–pedagang besar – pengecer–konsumen (Keller & Kotler, 2009: 113). Penentuan saluran distribusi yang dilakukan siswa dalam kegiatan pemasaran terbatas pada pemasaran saluran jangka pendek yaitu produsen–konsumen. Artinya, siswa sebagai produsen yang menjualnya langsung kepada konsumen. Namun demikian, praktik ini memberi pengalaman belajar yang bermakna bagi siswa.

Promosi penjualan dilakukan dengan berbagai alat untuk menarik respon pembeli yang lebih kuat dan lebih cepat termasuk efek jangka panjang seperti menjelaskan penawaran produk dan mendorong penjualan yang menurun (Keller & Kotler, 2009:190). Pada kegiatan promosi ini siswa tunagrahita kurang begitu kuat kemampuannya. Hal ini berkaitan dengan karakteristik dasar siswa yaitu pemalu, minder dan memiliki motivasi yang rendah (Sudrajat & Rosida, 2013: 23). Ketika kegiatan promosi yang dilakukan siswa ditolak, maka perasaan minder atau perasaan tidak percaya diri yang dimiliki siswa semakin tinggi. Akibatnya, siswa tidak mau melakukan kegiatan promosi kembali. Hal ini dapat diminimalisir melalui *e-marketing*, karena siswa mendapat kesempatan untuk belajar menawarkan produk atau jasa tanpa bertemu secara langsung kepada kosumen.

Pengembangan pemasaran dalam pembelajaran kewirausahaan melalui *e-marketing* yang dilakukan pada siswa tunagrahita ringan tingkat SMA mencakup kegiatan penyediaan produk, menentukan harga, menetapkan saluran distribusi dan melakukan inovasi terhadap promosi. Pada setiap kegiatan tersebut siswa diberikan bimbingan dan motivasi oleh guru. Sebagaimana yang diungkapkan oleh Purwanto et al (2016) bahwa siswa tunagrahita sangat membutuhkan berbagai bantuan untuk meningkatkan motivasi dan minat berwirausaha.

Penyediaan produk pada pembelajaran pemasaran ini masih melalui produk yang dihasilkan siswa sendiri. Penentuan harga dilakukan dengan menghitung jumlah modal yang dibutuhkan untuk tersedianya produk kemudian melakukan perbandingan harga dengan produk pesaingnya melalui *facebook* dan *instagram*. Pada barang yang sama (contohnya batik), siswa sudah mampu meninjau harga pada pihak pesaingnya. Tinjauan itu dilakukan melalui menghubungi pesaingnya dan menanyakan harga dari produk pesaingnya. Setelah mengetahui jumlah modal dan harga pesaingnya, siswa melakukan perkiraan harga untuk produknya.

Kegiatan penetapan saluran distribusi dilakukan dengan mengenali produknya terlebih dahulu. Pengenalan ini didasarkan pada daya tahan produk apakah produk merupakan barang yang cepat rusak, atau cepat basi. Identifikasi karakter produk itu digunakan sebagai dasar untuk menentukan saluran distribusi yang digu-

nakan. Penentuan saluran distribusi juga dilakukan dengan melihat wilayah persebaran produk dan perbandingan harga produk dengan biaya pengiriman. Dalam penelitian ini, siswa didorong untuk mengembangkan keterampilan untuk mampu melakukan beberapa langkah kegiatan tersebut. Hal ini mengingat bahwa meskipun keterampilan siswa dapat terbentuk secara alami, beberapa keterampilan siswa tunagrahita memerlukan strategi yang dirancang oleh guru (Chadsey & Beyer, 2001), dalam penelitian ini adalah dengan praktik langsung.

Kegiatan pengembangan keterampilan promosi pada *e-marketing* dilakukan dengan pengembangan keterampilan membuat konten yang menarik. Beberapa inovasi pembuatan konten yang sudah dilatihkan diantaranya dalam bentuk mengambil gambar atau foto dengan teknik khusus yang menghasilkan gambar produk secara jelas namun terlihat menarik. Siswa juga dikembangkan keterampilannya dalam melakukan perubahan atau *editing* pada foto yang dihasilkan. Konten lain yang diajarkan untuk dapat dibuat oleh siswa yaitu membuat sebuah video yang membahas tentang produk. Pembuatan paragraf deskripsi dan persuasi juga dikembangkan keterampilannya. Hal ini bertujuan untuk mendorong pembeli agar dapat melihat bahwa produk yang dipromosikan oleh siswa lebih unggul dari produk yang lainnya dan menghasilkan kepercayaan pada konsumen (Stokes, 2015; Chaffey & Smith, 2013). Langkah ini sangat penting, terlebih karena ketika awal membuat promosi tidak mudah untuk mendapatkan daya tarik pembeli. Oleh karena itu, siswa perlu diberikan pemahaman tentang minat dan karakteristik pembeli yang akan dituju (Stokes, 2011). Selain itu, konten yang dibuat harus selalu disesuaikan dengan perkembangan minat pembeli (Chaffey & Smith 2013). Hal ini dipelajari siswa dalam penelitian ini sebagai bagian dalam praktik *e-marketing*.

Pelatihan bagi siswa untuk mampu mengoperasikan kedua aplikasi, yaitu *facebook* dan *instagram* jugatelah dilakukan. Kedua media sosial ini sudah sangat umum dipakai oleh siswa. Siswa diajarkan untuk mengenali kedua aplikasi tersebut beserta fitur-fitur yang ada di dalam aplikasi khusus untuk tujuan *e-marketing*. Siswa diajarkan bagaimana cara memilih fitur yang akan digunakan untuk kegiatan promosi. Selain itu, guru juga memberikan informasi terkait pemilih-

an waktu yang tepat untuk membagikan konten promosi melalui *facebook* dan *instagram*.

Guru juga melatih beberapa strategi dalam melakukan komunikasi dengan pelanggan dengan bahasa yang baik, menarik dan tetap sopan. Hal ini sesuai dengan pendapat Ohtake & Chadsey (1999) bahwa mereka dapat dibantu untuk meningkatkan jangkauan dan kualitas hubungan sosial dengan cara dilatihkan untuk meningkatkan cara berkomunikasi. Kemampuan ini sangat penting dalam melakukan pemasaran. Sebagaimana yang diungkapkan oleh Stokes (2011) bahwa media sosial merupakan saluran yang bergerak cepat dan penggunaan media sosial yang efektif ditentukan oleh pengetahuan bahwa media sosial adalah saluran dua arah. Artinya, siswa tidak hanya cukup membuat pesan keluar tetapi juga menangani pesan yang masuk. Dengan demikian dapat tercapai kualitas pelayanan yang baik. Kualitas pelayanan terhadap pelanggan ini merupakan salah satu kekuatan yang menentukan keberhasilan *e-marketing* (Kaur et al, 2015).

Pada pemasaran langsung, semua keterampilan tersebut memerlukan banyak biaya, waktu dan usaha (Kaur et al, 2015). Berbeda dengan adanya *e-marketing* yang mana semua kegiatan tersebut dapat dilakukan tanpa perlu meluangkan waktu, mengeluarkan uang dan melakukan usaha yang lebih untuk sampai pada lokasi yang dituju agar dapat berkomunikasi dengan penjualnya. Cara pemasaran ini juga memiliki tingkat resiko yang rendah, tanggapan dari penjual dan pembeli menjadi lebih cepat, meningkatkan interaktivitas antara penjual dan pembeli, dan peningkatan pemaparan produk dan layanan (Kaur et al, 2015).

Akses *e-marketing* juga bersifat tak terbatas, yaitu dapat dilakukan di mana saja dan kapan saja dengan melakukan kegiatan lainnya (Kaur et al 2015; Setyaningrum, Budaya, & Efendi, 2015:373; Peter & Olson, 2013:278). Dengan begitu, pengembangan keterampilan pemasaran bagi siswa tunagrahita ringan dapat diberikan secara konsisten dan terus-menerus sebagai upaya untuk mengatasi hambatanya dalam mengingat. Seperti beberapa karakteristik umum tunagrahita yang disebutkan oleh Mcleskey, Rosenberg, & Westling (2013:85); Sudrajat & Rosida (2013:23) yaitu lamban dalam mempelajari hal baru, daya ingatan jangka pendek, perhatiannya mudah teralihkan, dan lain-lain. Karakteristik

tersebut menuntut guru untuk menyampaikan hal baru pada siswa tunagrahita secara terus menerus, konsisten dan dalam bentuk pembelajaran yang konkrit (Mumpuniarti, 2004:22). Selain keterampilan-keterampilan tersebut, bimbingan yang sangat diperlukan oleh siswa tunagrahita adalah untuk dapat menentukan keputusan sendiri dalam melakukan pemasaran. Hal ini sesuai dengan pendapat Wehman (2011); Wehmeyer & Schwartz (2015) bahwa kemampuan penentuan keputusan menjadi faktor penting bagi kemandirian siswa tunagrahita.

SIMPULAN

Hasil penelitian ini menyimpulkan bahwa *e-marketing* berpengaruh meningkatkan pemahaman pemasaran dalam pembelajaran kewirausahaan siswa tunagrahita ringan tingkat SMA. Hal ini disebabkan karena *e-marketing* merupakan pemasaran bermediakan internet yang mana siswa memiliki ketertarikan lebih pada internet dan aplikasi jejaring sosial seperti *facebook* dan *instagram*. Ketertarikan ini meningkatkan keterlibatan siswa secara aktif sehingga pembelajaran yang dilakukan dapat optimal. Dengan demikian, pembelajaran *e-marketing* ini dapat diterapkan dalam pembelajaran kewirausahaan untuk memberikan keterampilan pemasaran pada siswa, terutama siswa penyandang tunagrahita.

Namun demikian, mengingat keterbatasan siswa tunagrahita, guru perlu memberikan bimbingan dan motivasi dalam pelaksanaan pembelajaran. Bimbingan yang diberikan meliputi kegiatan dalam penyediaan produk, penentuan harga, penentuan cara distribusi dan promosi produk. Selain itu, guru perlu mempertimbangkan beberapa keterbatasan penggunaan *e-marketing*. Diantaranya adalah ketergantungan pada teknologi, masalah privasi, tuntutan untuk pemeliharaan konten akibat penyesuaian lingkungan yang terus berubah, transparansi harga yang lebih tinggi dan meningkatnya persaingan harga, serta persaingan global melalui globalisasi. Untuk mengembangkan hasil penelitian ini, perlu dilakukan penelitian lebih lanjut tentang pelaksanaan *e-marketing* dalam pembelajaran melalui media yang lainnya dan dengan penilaian yang lebih komprehensif.

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