

AMCA JOURNAL  
*of* COMMUNITY  
DEVELOPMENT

VOLUME 1 NO 2, JULY 2021

AJ  
CD

ASSOCIATION OF MUSLIM  
COMMUNITY IN ASEAN  
WEB: journal.amca2012.org

ISSN 2774-6178  
  
9 772774 617883



ASSOCIATION OF MUSLIM  
COMMUNITY IN ASEAN  
WEB: journal.amca2012.org

**AMCA Journal of Community Development (AJCD).** is the official international journal published by the Association of Muslim Community in ASEAN (AMCA) which emphasizes on community development. AJCD is issued twice a year (January and July). The journal is published in both printed and online versions, and the online version is free access and download.

**Aims and Scope.** AJCD publishes scholarly work from interdisciplinary in the community development area. The journal aims to provide publication of refereed and high-quality papers in all areas of community development. Contributions are welcome from all fields which have relevant and insightful comments to make about community development. The scope of the area in the field of community developments includes Agricultural, Anthropology, Behavioral Science, Cross-Cultural Studies, Development Studies, Economy Behavior, Education, Family, Human Resources Management, Law, Politics, Psychology, Religion and Philosophy, Social Science, and other related fields.

## EDITORIAL BOARD

### Editors-in-Chief

Dewi Kusumaningsih

*Universitas Veteran Bangun Nusantara Sukoharjo*

### Consultant Editor

Akhsanal In'am

*Universitas Muhammadiyah Malang*

### Senior Managing Editors

Ari Firmanto

*Universitas Muhammadiyah Malang*

Puji Sumarsono

*Universitas Muhammadiyah Malang*

### Associate Editors

Abdul Haris,  
*Universitas Muhammadiyah Malang*

Abdul Hafiz Hiley,  
*Muhammadiyah Assoc. Thailand*

Afiful Ikhwan,  
*Universitas Muhammadiyah Ponorogo*

Latipun,  
*Universitas Muhammadiyah Malang*

Dian Eka Chandra Wardhana,  
*Universitas Bengkulu*

Dwi Bambang Putut Setiyadi,  
*Universitas Widya Dharma Klaten*

Daryono,  
*Univ PGRI Wiranegara Pasuruan*

Zakiyah Zahara,  
*Universitas Tadulako*

Mohammad Yamin,  
*Malaysia*

Lilis Aslihah Rachman,  
*UIN Sultan Maulana Hasanudin Banten*

Muah,  
*ITB Ahmad Dahlan Lamongan*

Nurul Qomariah,  
*Universitas Muhammadiyah Jember*

Farhana,  
*Universitas Islam Jakarta*

Faridatul Fauziah,  
*Universitas Tirtayasa Banten*

Hamdan Azhar Siregar,  
*Universitas Islam Jakarta*

Hanisah Hanafi,  
*Universitas Negeri Gorontalo*

Ishomudin,  
*Universitas Muhammadiyah Malang*

Mochamad Ridwan,  
*Universitas Bengkulu*

Nekmah Batre,  
*An Nekmah Education Singapore*

Netty Nurdyanti,  
*Politeknik Negeri Semarang*

Pieter Sahertian,  
*Universitas Kanjuruhan Malang*

Purwo Haryono,  
*Universitas Widya Dharma Klaten*

Ria Angin,  
*Universitas Muhammadiyah Jember*

Supriatnoko,  
*Politeknik Negeri Jakarta*

Untoro,  
*Universitas Islam Jakarta*

Hunainah,  
*UIN Sultan Maulana Hasanudin Banten*

Vina Salviana DS,  
*Universitas Muhammadiyah Malang*

## Guidelines for Author

AMCA Journal of Community Development (AJCD) publishes both types of articles, articles of original research and reviews on the latest progress made in a given area of research. We are seeking submissions for forthcoming issues. The manuscripts submitted to AJSD should neither be published previously nor be under consideration for publication in another journal.

AJCD follows a double-blind peer-review process, whereby authors do not know reviewers and vice versa. AJCD is willing to select and publish the article with the highest quality research globally. To achieve this goal, the entire peer-review process will be done objectively and fairly.

### Technical guidelines for submission

Manuscript structure includes: abstract and keyword, introduction, methods, results, discussion, conclusions, and references. The paper should be written in professional English. All manuscripts should be prepared in Microsoft Word format employs italics, rather than underlining (except with URL addresses); and all illustrations, figures, and tables are placed within the text at the appropriate points or the end of the text.

The manuscript is written using Times New Roman font, 12 point, double spaced; do not use the automated features of your application (endnotes, headers, footers, especially for references); type a double space at the end of each paragraph; avoid using bold characters to emphasize words or sentences within the text; and number consecutively all pages, including references.

The Manuscript should be more than 3000 words and no longer than 8,000 words for full-length articles (including appendices and references). Each manuscript must have an abstract (not exceeding 200 words) and 5 keywords. Manuscripts that do not adhere to this will not be considered for review. The citation and reference use APA style. The authors are encouraged to include hypermedia links within their articles and ensure these are ready to use.

### Tables and figure

Size a table or a figure to fit in a single column or across two columns. Avoid large tables (i.e. those that fit more than a single page), unless necessary. Every table and figure should be cited in the text in numerical order (i.e. Table 2 cannot be cited before Table 1). Place table footnotes below the table, indicating them with superscripted lowercase letters or asterisks (for significance values and other statistical data).

Every table should have a caption that is concise but clear enough to explain its main components independently from the text. If the table contains previously published material, cite the source at the end of the caption.

Images should be of sufficiently high resolution to be easily viewed when printed (minimum of 300 dpi). Every figure should be cited in the text in numerical order (i.e. Figure 2 cannot be cited before Figure 1). Figures should be referred to as "Figure" not "Fig." Denote figure parts with lowercase letters (e.g. Figure 1a, Figure 1b).

### References and citation

For efficiency and conciseness, an author needs to provide 10-25 references. Use a reference manager such as Mendeley to build your reference list. A reference must be cited for it to appear in the reference list. If you have cited and formatted your reference correctly, it will automatically appear in the reference list.

### Additional information

Authors submit the manuscript to AJCD by online at <http://journal.amca2012.org/index.php/ajcd>. Questions concerning this policy should be directed to the editors at [ajcd@amca2012.org](mailto:ajcd@amca2012.org).

# AMCA JOURNAL OF COMMUNITY DEVELOPMENT

Volume 1 Number 2, July 2021

## Contents

The strength of internal service quality on employee's turnover intention and job satisfaction to organizational commitment, **21 - 26**

*Ika Fuji Rahayu and Latipun*

Curator's legal efforts in executing state-owned enterprise assets in bankruptcy, **27 - 30**

*Rahayu Hartini*

Neo sufism and the concept of seven dignities of Muhammad Nafis al-Banjari, **31 - 34**

*Miftah Arifin*

The effectiveness of online Mathematics learning, **35 - 38**

*Akhsanul In'am and Siti Hajar*

Group cohesiveness and poly-culturalism: The study of student nomads in Malang, **39 - 43**

*Diah Karmiyati, Clara Nidya Corsha, and Muhammad Fath Mashuri*

Brain-based learning model to explore students' procedural fluency ability in learning quadrilateral 2D shapes, **44-47**

*Ahmad*



## The strength of internal service quality on employee's turnover intention and job satisfaction to organizational commitment

Ika Fuji Rahayu<sup>1\*</sup> and Latipun<sup>2</sup>

<sup>1</sup>Tandasaru.com, Kota Ternate, Maluku Utara

<sup>2</sup>University of Muhammadiyah Malang, Indonesia

\*Corresponding author: [ikafujirahayu2013@gmail.com](mailto:ikafujirahayu2013@gmail.com)

### KEYWORDS

Internal service quality  
turnover intention  
job satisfaction  
organizational commitment

**ABSTRACT** The purpose of this research is to examine the direct and indirect effects of internal service quality (ISQ) on turnover intention through job satisfaction and organizational commitment as mediating variables. There were 208 employees of Banks in Ternate, Indonesia, participating as the subjects of this research. In this research, Staying or Leaving Index, Job Descriptive Index, Organizational Commitment Scale and SERVQUAL are used to measure employee's turnover intention, job satisfaction, organizational commitment, and ISQ, respectively. In the data analysis, a Path Process Micro Analysis was employed. The result of data analysis showed that ISQ has a direct effect on job satisfaction, organizational commitment, and turnover intention. Indirectly, ISQ also has an effect on turnover intention through job satisfaction and organizational commitment. Directly, the effect of ISQ on turnover intention is higher than indirect effect through mediating variables. The implication of this research results will be specially presented in the discussion.

© The Author(s) 2021

## 1. INTRODUCTION

Turnover is one of the main problems many organizational managements. Most firms are able to recruit employees with high potency and motivation, but fail to retain them (Lam, Lo, & Chan, 2002). Employees are the most valuable asset of an organization (Gul, Ahmad, Rehman, Shabir, & Razzaq, 2012). A high level of turnover will influence a firm's performance (Kwon & Rupp, 2013), organizational efficiency (Tariq, Ramzan, & Riaz, 2013), and also financial costs for recruitment, rent, and training for new employees, and also loss of incomes due to the vacancies of certain positions (White & Garner, 2011).

Such a loss will be higher if the turnover happens to those with good potentials and job achievement. A study on 900 employees resigning from their jobs shows that 92% have satisfactory or better performances from their superiors' job appraisals (Robbins & Judge, 2007). On the basis of various research results summarized by Bluedorn (1982), there is a significant positive relationship between a turnover intention and a real turnover behavior. A high turnover intention may also influence employees' performance in serving the firms' clients (Ashill, Rod, & Carruthers, 2008). This shows that a higher turnover intention may inflict on some losses than give some benefits for the firms.

In the past, the firm management merely focused on the quality of external services and customers' satisfaction. At present, this focus is on its internal customers, employees (Chen, Lin, & Ho, 2006). Therefore, many firms

start to apply in internal service quality (ISQ) by providing them with management support, positive organizational cultures, and administrative tools (Back, Lee, & Abbott, 2011). The main idea of this concept is the assumption that employees are the firm internal clients (Back et al., 2011) and the firm is trying to make its internal customers (employees) satisfied (Hult, Hurley, Giunipero, & Nichols, 2000).

ISQ allows employees to evaluate the quality of their works by comparing their sacrifices in terms, for example, of efforts and time and what they obtain such as wages, benefits, and rewards (Back et al., 2011). The employees satisfied with the ISQ they get are expected to have a low level of turnover intentions. (Chen et al., 2006). Reinforcing the employees' satisfaction by recognizing their work results may cause them to identify themselves with the organization and this may improve their service quality and their loyalty to the firm (Chang & Chang, 2008).

Beside ISQ, there are many factors that may influence an individual's decisions to resign from the firm such as competitive job market, but the management possesses some direct controls over many important factors that may encourage some turnovers (Tracey & Hinkin, 2008). Factors resulting in the turnover intention considered to have a strong effect are job satisfaction (e.g. Ghiselli, La Lopa, & Bai, 2001; Sousa-Poza & Henneberger, 2004; Egan, Yang, & Bartlett, 2004; Moynihan & Pandey, 2007; Chen, et al., 2012) and organizational commitment (Chen et al., 2012). According to Maertz and Campion (1998), turnover intentions, job satisfactions, and perception of alternative jobs

are the main predictors and early signs of the real turnover behaviors in the near future.

Firms with good managerial systems will be aware of their obligations to fulfill their employees' needs. The needs include from the most basic to higher ones such as a need for self-actualization. The fulfillment of the needs firms make is one of efforts to prevent any turnover. Unfortunately, most firms merely use an economic approach to retaining their employees. This economic approach is realized by providing them with high wages, bonuses, and incentives. But they often ignore the fact that employees' non material needs such as job satisfaction may improve employees' organizational commitment. Besides, according to Seligman (2002) one's job satisfaction is generally caused by one's conscience. This conscience is a firm commitment to a job for the sake of the job itself. Seligman (2002) suggests that those with conscience see their jobs as the contribution to higher goodness. A job is satisfying because of the job itself, without any consideration of wages or promotions.

Job satisfaction is an important construct in predicting an employee's intention to leave his job (Egan et al., 2004). A number of researches reveal that employees' job satisfaction is negatively correlated with turnover intention (e.g. Sousa-Poza & Henneberger, 2004; Egan et al., 2004; Moynihan & Pandey, 2007; Chen et al., 2012). Even, job satisfaction is considered as the most significant predictor to turnover intention (Piernaar, Sieberhagen, & Mostert, 2007). The more satisfactory an employee with his job, the lower his intention to change his job or profession will be. An employee who is not satisfied with his job tends to have negative opinion to the job he is doing or to the firm he is working for.

According to Robbins and Judge (2007), employees express their dissatisfaction in four ways (1) exit, some behaviors intended to leave an organization, (2) voice, expressing active and constructive aspirations to improve the condition; (3) loyalty, passively staying in the firm but optimistically waiting for the betterment of the condition and (4) neglect, passively letting the condition worse. The four ways still give some bad effects on the firm or on the employees' potency. To avoid any turnover, the firms should make any policies that may attract employees' interest to improve their job satisfaction to make them stay in their present jobs and therefore the firms may use their resources optimally. Especially for voluntary turnover, it seems that job satisfaction may explain most differences of turnover intention (Chen et al., 2012).

Many heads and organizational managements pay attention to some efforts to improve employees' motivation in order to reach the organizational purpose such as profits, productivity, growth, and image effectively and efficiently (Gul et al., 2012). Such efforts may be made by improving the organizational commitment (Gul et al., 2012) so that employees will be willing to work harder for the future of the organization. Morris & Sherman's (1981) research results indicate that an organizational commitment will be able to predict employees' performance and turnover effectively

Previous researches show that employees satisfied with ISQ show a higher level of job satisfaction (e.g. Halowell et al., 1996; Seyyedi, Damirchi, & Rahimi, 2012) and better organizational commitment (Back et al., 2011). The variables will influence one's intention to leave or to stay in the firm. On the contrary, job satisfaction which is unful-

filled reflects their low commitment to the firm, as shown by their low attendance, anxieties, and demands, followed by strikes and at last, turnover.

Dealing with the roles of ISQ in the turnover intention, some conflicts happen. Chen et al (2006) in their research reveal that the components of ISQ may be used to predict turnover intentions directly. But another research finds that ISQ does not become an autonomous variable in influencing employees' turnover intention. Job satisfaction and organizational commitment are presumed to become mediating variables in increasing turnover intention (Back et al., 2011). The objective of this present research is to test direct effects of employee turnover intention through job satisfaction and organizational commitment.

## 2. METHOD

### 2.1 Subject

The subject of this present research is employees in banking industry, consisting of 208 persons from two banks in Ternate City, Indonesia. The bank employees was took as subjects of research with the consideration that they tend to have a relatively turnover intention (Ojedokun, 2008). The subject is permanent employees consisting of 113 males and 95 females with the ranges of ages from 23-49 years ( $M = 27.86$  and  $SD = 4.54$ ) and years of service of 2-24 years ( $M = 5.47$  and  $SD = 4.35$ ).

### 2.2 Instrument

Turnover intention was measured using an instrument of Staying or Leaving Index (SLI) consisting of eight items (Bluedorn, 1982). The first four items measure the possibility of an employee to stay to work in the firm for three months, six months, one year, and two years. The other four items measure the possibility of an employee to leave the firm in three months, six months, one year and two years. (Bluedorn, 1982). From result of the reliability test to the SLI in the employees in Ternate, an internal consistency ( $\alpha = 0.95$ ) is obtained.

Job Descriptive Index (JDI) was used to measure job satisfaction (Smith, Kendall, & Hulin, 1969). JDI consists of an individual feeling's response to wage, promotion, fellow employee, supervision, and job (Smith et al., 1969). In this research, a 1997 revised version of JDI (AJDI) was employed. It is development by Balzer et al. (1997) and consists of 72 items with  $\alpha$  value for each subscale is 0.88 (job), 0.94 (wage), 0.95 (promotion), 0.94 (supervision), and 0.85 (fellow employee).

Organizational commitment was measured using an instrument of Organizational Commitment Scale (OCS) consisting of 24 items (Allen & Meyer, 1990) that measure three aspects afektif (ACS), continuous (CCS), and normative (NCS) (Allen & Meyer, 1990). From the test result of the tryout to the OCS, its internal consistency ( $\alpha$ ) is 0.91.

ISQ was measured using SERVQUAL, an instrument to measure either external or internal customers' perception of service quality given by the organization (Parasuraman et al., 1988). SERVQUAL consists of 22 items and contains 5 ISQ aspects: form, reliability, response, assurance, and empathy with internal consistency ( $\alpha$ ) of 0.90.

**TABLE 1.** Inter-correlation coefficient of variables.

Variables	1	2	3	4
1. Internal Services Quality	1	-.89***	.87***	.87***
2. Turnover intention		1	-.90***	-.87***
3. Job satisfaction			1	.82***
4. Organizational commitment				1

\*\*\*  $p < 0.001$

### 2.3 Data Analysis

In the data analysis, a path analysis was employed to measure direct and indirect effects between the exogenous and endogenous variables and to understand the effects among variables namely exogenous and endogenous variables. The data were analyzed using the PROCESS program (Hayes, 2004).

## 3. RESULTS

### 3.1 Data Description

According to the descriptive analysis, the following ranges of scores are obtained: the ISQ variable with the ranges of score of 41-102 ( $M = 83.05$ ,  $SD = 13.36$ ), the job satisfaction, 129-212 ( $M = 186.04$ ,  $SD = 16.59$ ), the organizational commitment 46-112 ( $M = 85.01$ ,  $SD = 15.27$ ), and the turnover intention, 8-40 ( $M = 18.67$ ,  $SD = 10.17$ ).

The testing results of the Product Moment correlation, it is known that the four variables are significantly correlated. The relation between the ISQ and the two mediating variables show positive and significant correlations, namely the job satisfaction ( $r = .87$ ,  $p = .000$ ) and organizational commitment ( $r = .87$ ,  $p = .000$ ). The independent variable and the mediating variables have negative and significant correlations with turnover intention, namely with ISQ ( $r = -.23$ ,  $p = .000$ ), job satisfaction ( $r = -.47$ ,  $p = .000$ ) and organizational commitment ( $r = -.28$ ,  $p = .000$ ). The inter-variable relations are presented at Table 1.

### 3.2 The Testing of Direct Effects Using a Path Model

In accordance with Kenny's perspective (1988), it is necessary to test of direct effects of the independent variable to potential moderating variable and dependent variable. On the basis of the regression analysis, it is known that ISQ affects the turnover intention by controlling the organizational commitment and job satisfaction, showing that there is some negative and significant effect ( $\beta = -.18$ ,  $SE = .05$ ,  $p < .001$ ). The direct effect is lower than the total effect of ISQ on the turnover intention ( $\beta = -.68$ ,  $SE = .02$ ,  $p < .001$ ). Therefore, the mediating variables play some roles in the relation of the ISQ and the turnover intention.

The testing of the direct effect using the path analysis was also made to the relation between the ISQ and the potential moderating variables namely job satisfaction (M1) and organizational commitment (M2). The results show that there are some significant and positive effects ( $\beta = 1.07$ ,  $SE = .04$ ;  $p < .001$ ;  $\beta = .75$ ,  $SE = .08$ ,  $p < .001$ , respectively).

Direct effects of the potential moderating variables, namely job satisfaction (M1) on the organizational commitment (M2) and the dependent variable (turnover intention) were also tested. The results of the path analysis show that job satisfaction gave some significant and positive effects

**TABLE 2.** Mediation effect of internal service quality on turnover intention through job satisfaction and organizational commitment (n=208).

Path effect	$\beta$	SE	t	p
Service quality to:				
Satisfaction	1.09	0.04	25.88	0.000
Commitment	0.75	0.08	9.57	0.000
Turnover	-0.18	0.05	-3.79	0.000
Satisfaction to:				
Commitment	0.23	0.23	3.65	0.000
Turnover	-0.29	-0.29	-8.82	0.000
Commitment to				
Turnover	-0.19	-0.19	-5.41	0.000
Bootstrapped results for indirect effect				
	Effect	SE	LLCI 95%	UL CI 95%
Ind1	-0.31	0.03	-0.38	-0.24
Ind2	-0.05	0.02	-0.09	-0.02
Ind3	-0.14	0.03	-0.20	-0.09

quality = internal service quality; turnover = intention turnover; satisfaction = job satisfaction; commitment = organizational commitment; LL = lower limit; UL = upper limit; CI = confidence interval; Ind1 = Internal service quality → job satisfaction → turnover intention; Ind2 = Internal service quality → job satisfaction → organizational commitment → turnover intention; Ind3 = Internal service quality → organizational commitment → turnover intention.

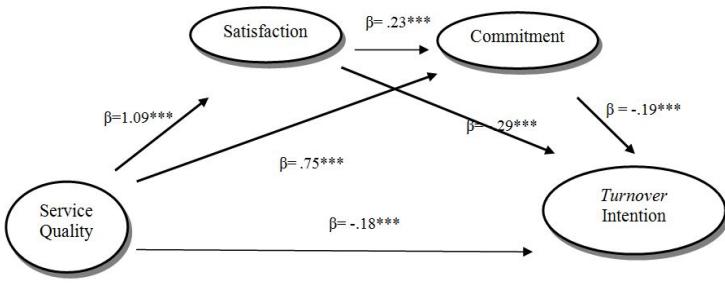
on the organizational commitment ( $\beta = .23$ ,  $SE = .06$ ,  $p < .001$ ) and significant and negative effects on the turnover intention ( $\beta = -.29$ ,  $SE = .03$ ,  $p < .001$ ). At last, the testing result of the direct effect of the organizational commitment (M2) on the turnover intention show that the effect is significant and negative in nature ( $\beta = -.19$ ,  $SE = .04$ ,  $p < .001$ ). The summary of the results of the statistical testing is presented in Fig. 1.

### 3.3 Mediation effect

To understand the extent to which the moderating variable, namely the internal service quality, affect the turnover intention, it can be seen from the Bootstrapping results for the indirect effect. From Table 2, it is known that (1) the relation between the internal service quality and the turnover intention is predicted to give some effects ( $\beta = -.31$ ,  $SE = .03$ ) with the range of CI95% -.38 to -.24; (2) the relation between the internal service quality and the turnover intention through job satisfaction and organizational commitment is also envisaged to give some effect ( $\beta = -.05$ ,  $SE = .02$ ), ranging from CI95% -.09 to -.02; and (3) the relation between the internal service quality and the turnover intention through the organizational commitment is expected to give some effects ( $\beta = -.14$ ,  $SE = .03$ ) with the range of CI95% -.20 to -.09.

## 4. DISCUSSION

Based on the direct path analysis, ISQ gives some significant effect on the turnover intention. The negative coefficient of the direct effect shows that the effect of ISQ on the turnover intention is negative in direction, meaning that the higher an employee perceives the ISQ, the lower the employee turnover will be. On the contrary, the lower the



**FIGURE 1.** Path diagram of the testing result of the Path model of the effect of ISQ on job satisfaction, organizational commitment, turnover intention, the effect of job satisfaction on turnover intention, and the effect of organizational commitment on the turnover intention.

Note: \*\*\* $p < .001$

employee perceives on the ISQ, the higher the employee turnover intention will be.

It is in line with the previous research by Chang & Chang (2008), showing that the availability of good ISQ provided by the firm will minimize the employee intention to leave his job, since due to the ISQ the employee feels to be respected and be paid attention the management. On the contrary, minimum ISQ may give some effects on the employee satisfaction, and employees' inability to identify himself with the organization (Chang & Chang, 2008) may make him not stand to stay in an organization. The empirical evidence shows that ISQ plays a vital role in lowering the level of the employee turnover intention.

A firm that pays some attention to its employees' needs will improve employee satisfaction, and employee service quality to the customers (Chen et al., 2006). The employees who are satisfactory with and who feel to be respected by the firm will have some moral responsibility to do the same to the firm customers. When the customers give some positive feedbacks to the employee services, this will give more benefits to the firm (Deshpande, Farely, & Webster, 1993).

Employees who want to stay in their jobs at present have certain considerations. The considerations may become factors that will influence one's decision to stay or to leave the firm. The factors may be anything dealing with the firm itself in the future, or may be from the concerned individual. ISQ is one of the factors from the policies the firm management makes that influences employee's decision to stay in the firm. The firm applying policies that take sides to the employees, may support employees in doing their jobs, respect and treat them just, and tend to be more capable of retaining its employees. In the era of this fierce competition among firms, it is necessary for a firm to retain its employees since they are the main asset.

Other factors that may influence employee intention to stay in a firm from individuals are among others job satisfaction and organizational commitment. The two factors are not free from the ISQ available (Seyyedi et al., 2012; Ahmad & Al-Borie, 2012). It is in line with the research results, showing that ISQ gives significant effects on job satisfaction and organizational commitment. The more effective the ISQ a firm provides, the higher the job satisfaction and the organizational commitment among the employees will be.

Something important in this present research is the direct effect of ISQ on the turnover intention turns out possessing a higher path coefficient than the indirect effect through job satisfaction and organizational commitment. The lower path coefficient of job satisfaction and organizational commitment on the turnover intention shows

that less reinforcement may increase or decrease employee turnover intention from the testing results, it is known that the function of job satisfaction and organizational commitment as the reinforcing or weakening variables is less significant than that of ISO as the autonomous variable. Although job satisfaction and organizational commitment are important factor that influence the turnover intention, ISQ may also become an autonomous variable in influencing the turnover intention. Therefore it can be stated that employees should not feel satisfactory and have commitment to be able to say at their jobs.

These research results show the importance of the ISQ availability in a firm. The effects of the ISQ aspects on job satisfaction, organizational commitment, or turnover intention explain the necessity of a firm to treat its employees as the internal customers. The firms' support and attention, appropriate work hours, fellow workers and comfortable work environment may encourage employees to be individuals satisfying with their jobs and their work places. So, firms should give more attention to anything dealing with their employees' needs in applying the ISQ (Ahmad & Al-Borie, 2012). The employees who are satisfied with their jobs have fewer reasons to leave their jobs. In line with this research result, Back et al (2011) states that high job satisfaction among the employees lead to high organizational commitment and lower turnover intentions, whereas, low job satisfaction will lead to from absence, coming late to job place, doing something without any seriousness, to resignation.

The effects of ISQ on organizational commitment in this research show that employees that may enjoy direct benefits from the ISQ will have higher commitment to the firm they work for. The negative effects of organizational commitment on turnover intention revealed in this research show that the higher organizational commitment among employees, the lower the employees intend to leave their jobs. It is in line with Mowday, Steers, & Porter's (1979) finding that employees with commitment to the organization tend to have a minimum intention to leave their organization than those with no commitment. It is caused by the fact that the feelings of belongingness and love to the firm in which they work for motivate them to view their firm as a place for earning their living but as the second "family" or "home".

Therefore, the results of this research show that the indirect effect of the ISQ on the turnover intention through job satisfaction and organizational commitment is significant. The better the employee perception of the ISQ the firms provides with, the higher the job satisfaction and the organizational commitment will be, and this will reduce the

turnover intention. Whereas, the lower the employee perception of the ISQ, the lower the job satisfaction and the organization commitment will be, and this results in higher turnover intention. As a result, it is important for a firm to provide their employees with high-quality and effective ISQ since this will improve their job satisfaction and organizational commitment so that employees have high intention to stay in the firm.

## 5. CONCLUSION

The testing result in this present research supports the hypothesis that the service quality variable directly becomes the predicting variable, the turnover intention. Job satisfaction and organizational commitment play a significant role as the mediating variable in the relationship between the internal service quality and the turnover intention. The research results imply that it is necessary for a firm to improve its employee job satisfaction and to make efforts to improve the organizational commitment to reduce any turnover intention among employees.

## REFERENCES

Ahmad, A. M. K., & Al-Borie, H. M. (2012). Impact of internal marketing on job satisfaction and organizational commitment: A study of teaching hospitals in Saudi Arabia. *Business and Management Research*, 1(3), 82-94.

Allen, N. J., & Meyer, J. P. (1990). The measurement and antecedents of affective, continuance and normative commitment to the organization. *Journal of Occupational Psychology*, 63, 1-18.

Ashill, N. J., Rod, M., & Carruthers, J. 2008. The effect of management commitment to service quality on front-line employees' job attitudes, turnover intentions, and service recovery performance in a new public management context. *Journal of Strategic Marketing*, 16(5), 437-462. DOI: 10.1080/09652540802480944.

Back, K., Lee, C., & Abbott, J. (2011). Internal relationship marketing: Korean casino employees' job satisfaction and organizational commitment. *Cornell Hospitality Quarterly*, 52(2), 111-124. DOI: 10.1177/1938965510370742.

Balzer, W. K., Kihm, J. A., Smith, P. C., Irwin, J. L., Bachiochi, P. D., Robie, C., Sinar, E. F., & Parra, L. F. (1997). *User's manual for the job descriptive index (JDI; 1997 Revision) and the job in general (JIG) Scales*. OH, Bowling Green: Bowling Green State University.

Bluedorn, A. C. (1982). A unified model of turnover from organizations. *Human Relations*, 35(2), 135-153.

Bluedorn, A. C. (1982). The theories of turnover: Causes, effects, and meaning. *Research in the Sociology of Organizations*, 1, 75-128.

Chang, C. P., & Chang, W. C. (2008). Internal marketing practices and employees' turnover intentions in tourism and leisure hotels. *The Journal of Human Resource and Adult Learning*, 4(2), 161-172.

Chen, H., Ford Jr., D. L., Kalyanaram, G., & Bhagat, R. S. (2012). Boundary conditions for turnover intentions: Exploratory evidence from China, Jordan, Turkey, and the United States. *The International Journal of Human Resource Management*, 23(4), 846-866. DOI: 10.1080/09585192.2011.610968.

Chen, C. K., Lin, Y. H., & Ho, C. S. (2006). Research on the relationship between internal marketing and medical personnel's turnover intention in the situation of a dangerous outbreak of illness like SARS: A regional hospital for example. *Cheng Ching Medical Journal*, 2(4), 28-36.

Deshpande, R., Farley, J., & Webster, F. (1993). Corporate culture, customer orientation, and innovativeness in Japanese firms: A quadrad analysis. *Journal of Marketing*, 57(1), 23-37.

Egan, T. M., Yang, B., & Bartlett, K. R. (2004). The effects of organizational learning culture and job satisfaction on motivation to transfer learning and turnover intention. *Human Resource Development Quarterly*, 15(3), 279-301.

Ghiselli, R. F., La Lopa, J. M., & Bai, B. (2001). Job satisfaction, life satisfaction, and turnover intent: Among food-service managers. *Cornell Hotel and Restaurant Administration Quarterly*, 42, 28-37. DOI: 10.1177/0010880401422002.

Gul, S., Ahmad, B., Rehman, S. U., Shabir, N., & Razzaq, N. (2012). Leadership styles, turnover intentions and the mediating role of organizational commitment. *Information and Knowledge Management*, 2(7), 44-51.

Hallowell, R., Schlesinger, L. A., & Zornitsky, J. (1996). Internal service quality, customer and job satisfaction: Linkages and implications for management. *Human Resource Planning*, 19(2), 64-73.

Hult, G. T. M., Hurley, R. F., Giunipero, L. C., & Nichols, Jr, E. L. (2000). Organizational learning in global purchasing: A model and test of internal users and corporate buyers. *Decision Science*, 31(2), 293-325.

Kwon, K., & Rupp, D. E. (2013). High-performer turnover and firm performance: The moderating role of human capital investment and firm reputation. *Journal of Organizational Behavior*, 34, 129-150. DOI: 10.1002/job.1804.

Lam, T., Lo, A., & Chan, J. (2002). New employees' turnover intentions and organizational commitment in the Hong Kong hotel industry. *Journal of Hospitality & Tourism Research*, 26(3), 217-234. DOI: 10.1177/1096348002026003002.

Maertz, C. P., & Campion, M. A. A. (1998). 25 years of voluntary turnover research: A review and critique. In C. L. Cooper & I. T. Robertson (Eds), *International Review of Industrial and Organizational Psychology*, 13, 49-81

Morris, J. H., & Sherman, J. D. (1981). Generaliability of an organizational commitment model. *Academy of Management Journal*, 24, 512-526.

Mowday, R. T., Steers, R. M., & Porter, L. W. (1979). The measurement of organizational commitment. *Journal of Vocational Behavior*, 14, 224-247.

Moynihan, D. P., & Pandey, S. K. (2007). The ties that bind: Social networks, person-organization value fit, and turnover intention. *Journal of Public Administration Research and Theory*, 18, 205-227. DOI: 10.1093/jopart/mum013.

Ojedokun, A. O. (2008). Perceived job insecurity, job satisfaction and intention to quit among employees of selected bank in Nigeria. *African Journal for the Psychological Study of Social Issues*, 11(1), 204-219.

Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. *Journal of Retailing*, 64(1), 12-40.

Pienaar, J., Sieberhagen, C. F., & Mostert, K. (2007). Investigating turnover intentions by role overload, job satisfaction, and social support moderation. *SA Journal of Industrial Psychology*, 33(2), 62-67.

Robbins, S. P., & Judge, T. A. (2007). *Organizational behavior* (12th edition). Pearson Education Inc.

Seligman, M. E. P. (2002). *Authentic happiness: Using the new positive psychology to realize your potential for lasting fulfillment*. Free Press.

Seyyedi, M. H., Damirchi, Q. V., & Rahimi, G. (2012). Internal costumer service quality in Iranian tourism industry. *Journal of Applied Sciences Research*, 8(2), 1136-1147.

Smith, P. C., Kendall, L., & Hulin, C. L. (1969). *The measurement of satisfaction in work and retirement*. Rand McNally.

Sousa-Poza, A., & Henneberger, F. (2004). Analyzing job mobility with job turnover intentions: An international comparative study. *Journal of Economic Issues*, 38(1), 113-137.

Tracey, J. B., & Hinkin, T. R. (2008). Contextual factors and cost profiles associated with employee turnover. *Cornell Hospitality Quarterly*, 49, 12-27. DOI: 10.1177/0010880407310191.

White, W. L., & Garner, B. R. (2011). Staff turnover in addiction treatment: Toward science-based answers to critical questions. *Counselor*, 12(3), 56-62.

## Curator's legal efforts in executing state-owned enterprise assets in bankruptcy

Rahayu Hartini<sup>1\*</sup>

<sup>1</sup>Universitas Muhammadiyah Malang

\*Corresponding author: [hartini@umm.ac.id](mailto:hartini@umm.ac.id)

### KEYWORDS

Curator  
legal effort  
executing  
SOES assets  
bankruptcy

**ABSTRACT** The task of the Curator in Bankruptcy is to administer and settle the bankruptcy estate. It is also the curator who must carry out the execution of the bankrupt assets. In practice, it is not easy, and there are several obstacles faced, especially when the debtor in bankruptcy is a Limited Liability Company in the form of a State-Owned Enterprise Persero. Until now, there are no assets of BUMN PT Persero (in bankruptcy) that can be executed. The purpose of this study is to find out how the execution of assets of P.T. Kertas Leces Persero (in bankruptcy) and what the curator's efforts are about it. The research is juridical empirical. The results of the study show: There are two stages of asset execution—management and settlement of bankrupt assets. However, there are still obstacles, both internal and external, with considerable government intervention. The curator's efforts to deal with these obstacles are by sending letters to all relevant agencies, taking an inventory of the assets and legal documents belonging to P.T. Kertas Leces Persero, which are needed in the process of executing the bankruptcy assets.

© The Author(s) 2021

## 1. INTRODUCTION

The role of the state through state-owned enterprises (hereinafter referred to as BUMN) becomes very important when it is formulated in a provision as formulated in Article 33 paragraph (2) of the 1945 Constitution of the Republic of Indonesia (hereinafter referred to as the 1945 Constitution of the Republic of Indonesia), in which branches Production which is important for the state and which affects the livelihood of the people must be controlled by the state (Ruslina, 2012). This shows the state's authority to participate in economic activities through the operation of production branches which can be categorized as important for the state and considered vital and strategic for the interests of the state (Ilmar, 2012).

BUMN in the form of a Persero cannot be separated from the problems of ups and downs in the financial situation. Awareness of the ups and downs of the financial situation is proven by the existence of several lawsuits and petitions for bankruptcy statements against BUMN Persero, which occurred including P.T. Dirgantara Indonesia (Persero) in 2007 (Hartini, 2016) (Hartini, 2016), PT. Djakarta Lloyd (Persero) in 2011 (Hartini, 2016), and PT. Iglass (Persero) in 2009 (Mahkamah Agung, 2011). Of the several bankruptcy cases of BUMN Persero, in the end, none of them could be declared bankrupt, even the implementation of how the execution of the assets of BUMN Persero was very questionable because it was not clear how it was implemented. In reality, if it can be declared bankrupt at the Commercial Court, it will be cancelled at the cassation level, or if it is granted at the cassation level, it will be cancelled at the Judicial Review level.

P.T. Kertas Leces Persero, as a BUMN, has been bankrupt and at this time (2019) has reached the stage of implementing the execution of assets in the realm of the auction by the Asset Management Company (PPA). Therefore, the authors are interested in studying it further, considering that no one has ever succeeded in executing the assets of state-owned companies in bankruptcy in Indonesia. So, if later at the end of P.T. Kertas Leces (Persero) can carry out the execution of assets, so it will be the history of the only BUMN Persero that can execute assets so that it can pay debts to all its creditors. P.T. Paper Leces (Persero) itself has been homologated through decision 05/PKPU/2014/P.N.Niaga.Sby on May 18, 2015. Although the road to bankruptcy Leces may be somewhat different from the predecessor BUMN Persero, namely PT. Dirgantara Indonesia (Persero), PT. Djakarta Lloyd (Persero) and finally P.T. Iglass (Persero).

Based on the description in the background above, there are also provisions that are ambiguous and contradict the laws and regulations related to the mindset about the concept of bankruptcy which has been misinterpreted by various parties; this causes judges to always be giddy in adjudicating bankruptcy cases of BUMN, especially BUMN in the form of Persero. The implementation of the execution of the assets of a state-owned company Persero that has been declared bankrupt, will experience obstacles in the implementation process if the conflict and wrong mindset is not immediately straightened out.

P.T. Kertas Leces Persero paper was chosen as the object of the research study because, until 2019 yesterday, it had reached the execution stage of the execution of assets

in the realm of the auction by the Asset Management Company (PPA). This is very interesting to study because it is quite a long process. So, according to the author, it is urgent to explore how the execution of the assets of P.T. Kertas Leces (Persero) to the team of curators who handle it. Looking at the problem, if then P.T. Kertas Leces (Persero) is finally able to carry out the execution of assets, so it will be the history of the only BUMN Persero that can execute assets so that it can pay debts to all its creditors. P.T. Kertas Leces (Persero) has been homologated through decision 05/PKPU/2014/P.N.Niaga.Sby on May 18 2015 (Surabaya Commercial Court).

There have been several previous studies regarding bankruptcy and also Delaying Debt Payment Obligations, but the authors still have not found similar research related to the efforts made by the curator in carrying out the execution of State-Owned Enterprises assets. There are several previous studies related to bankruptcy, for example: by (Nilasari, 2013) entitled: Position of Securities in the Case of Sellers Declared Bankrupt in Short-Selling Transactions in the Capital Market, (Primadhan, 2014) concerning Legal Protection Against Consumers of Graha Dewata Housing As a result of the bankruptcy of P.T. Dewata Abdi Nusa, Astiti (2014) (Astuti, 2014) regarding: Confiscation of Collateral in bankruptcy, then on Cross-Border Bankruptcy from the Perspective of International Law and Its Comparison with National Instruments in Several Countries by Hadjaloka (2015), UUK and PKPU No. 37 of 2004 Overriding the Applicability of Principles Pacta Sunt Servanda in Bankruptcy Dispute Resolution by (Hartini, 2015), Legal Status of Bank Guarantee on Behalf of Third Parties In Bankruptcy Perspective, by (Hartini, 2017). Next is the research from (Johan, 2021). It is entitled Separatist Creditors Problems on Postponement of Debt Payment Obligations Based on the Supreme Court's Decree Number 30/KMA/SK/I/2020.

While research in the field of SOES Persero, for example, by (Sumawati, 2019) Restructuring State-Owned Enterprises (SOEs) as a Strategy to Face Demonopolization Policies, (Cahyani & Djatmiati, 2020): Demarcation of BUMN: Between Private Laws and Public Laws (2020), more from (Sitepu, 2020) : State-Owned Enterprises Finance from the Perspective of State Funds.

Based on the description in the background, this is the basis for the author to raise this research with a legal issue: 1). How is the execution of the assets of P.T. Kertas Leces Persero? 2) What is the role of the curator in overcoming obstacles in the execution of the assets of State-Owned Enterprises (BUMN) in bankruptcy?

## 2. METHOD

The problems that have been formulated above will be answered or solved using an empirical juridical approach. The juridical approach (law is seen as a norm or das sollen), because in discussing the problem, this research uses legal materials, both primary legal materials and secondary legal materials (written law and unwritten law). Empirical approach (law as a social, cultural or das sein reality), because this research uses primary legal materials obtained from the field. So, the empirical juridical approach in this study means that analyzing the problem and is done by combining secondary materials (for example, the homologation decision on P.T. Kertas Leces (Persero) and primary legal ma-

terials obtained in the field, namely about the implementation of the execution of assets in bankruptcy by the curator.

## 3. RESULTS AND DISCUSSION

### 3.1 Execution of Asset Assets of P.T. Kertas Leces (Persero) in Bankruptcy by Curator

Execution of Asset Execution at P.T. Kertas Leces (Persero) can be based on the provisions of Article 15 paragraph (4) jo. Article 86 paragraph (3) jo. Article 115 paragraph (1) of the law. Number 37 of 2004 concerning Bankruptcy and PKPU through a Court Decision at the Surabaya District Court No. 01/Pdt.Sus. Peace Cancellation/2018/P.N. Niaga.Sby jo No. 05/PKPU/2014 /P.N.Niaga.Sby dated May 18, 2015, which was pronounced at a trial which was open to the public through the Panel of Judges on September 25, 2018 (the "Decision") regarding the Application for Cancellation of Agreement submitted by: (1) Harris Irwanto, et al. (15 former employees) as Petitioners for the cancellation of Peace I; and (2). Lathe Alex Supraptono, as Petitioner for Cancellation of Peace II. In this case, represented by Eko Novriansyah S.H. et al., whose office is at the ENP Law Office having its address at the Fatmawati Mars Complex, South Jakarta.

The applicants filed a lawsuit for the cancellation of the agreement against P.T. Paper Leces (Persero), which is domiciled on Jalan Raya Leces, Probolinggo Regency, East Java. Where in the execution of the execution designates and appoints: (1) Anggi Gitaharani, S.H., M.H., (2) Rayi Baskara, S.H., M.H., and (3) Febry Arisandi, S.H., M.H.

As the Curator Team of P.T. Kertas Leces (Persero) (in bankruptcy) will carry out the management and settlement in the bankruptcy process in this case. Where the appointment appointed Sarwedi S.H., M.H., Commercial Judge at the Surabaya District Court as Supervisory Judge.

There are two stages in the execution of bankruptcy assets (boedel bankrupt), namely the management phase and clearing stage.

**Bankrupt Asset Management Stage.** Announce the existence of bankruptcy spread in 2 (two) Newspapers and the State Gazette of the Republic of Indonesia, which are determined by the Supervisory Judge at the same time containing notification of the time and place of the first creditor meeting, the deadline for submitting creditor/tax claims to the curator at the time and place of the verification meeting (Article 15 paragraph 4 in conjunction with Article 14 UUK and PKPU); This can be proven by the publications in 2 newspapers, namely: Bisnis Indonesia Newspaper, dated October 1, 2018, and Jawa Pos Newspapers They were dated October 1 2018.

Carry out all efforts to secure bankrupt assets and keep all documents, money, jewellery and other securities by providing a receipt (Article 98 of the UUK and PKPU) as well as making a record of bankruptcy assets or an asset inventory (Article 100 paragraph (1) of the UUK and PKPU); In an effort at this point because P.T. Kertas Leces (Persero) (In bankruptcy) is a Limited

Liability Company in the form of a long-established State-Owned Enterprise so that it takes time to secure the bankruptcy assets. As for the asset inventory, one of which is known to be PT. Paper Leces (Persero) (In bankruptcy) has assets of a plot of land covering an area of 623 m<sup>2</sup> and the building thereon in accordance with the Certificate of Building Use Rights No. 277/ Kramat Pela registered under

the name of P.T. Paper Leces (Persero) (In Bankrupt), with a limit of Rp. 11.49 billion.

Calling creditors/taxes to get their invoices to the Curator (Article 90 paragraph (4) UUK and PKPU); Bankruptcy Curator Febry Arisandi SH (Arisandi, 2020), told the author that in this regard, there are 32 concurrent creditors (without collateral), five separatist creditors (with collateral). Meanwhile, the separatist creditors come from the Tax Office, while on the other hand, there are more than 2000 registrants for employees of P.T. Kertas Leces (Persero) (in bankruptcy).

Make a list stating the nature, number of receivables and debts of bankrupt assets, name and residence of creditors, along with the number of receivables of each creditor (Article 102); In the peace proposal regarding the details of the debt restructuring of P.T. Paper Leces (Persero) (In bankruptcy), a total of 2.12 trillion from 431 creditors. The total receivables of each creditor are as follows:1). Preferred Creditors are totalling Rp. 747.86 billion, 2). Separatist Creditors are totalling Rp. 1.154 trillion, 3). Concurrent Creditors are totalling Rp. 222.735 billion.

Collecting bankrupt debtors' receivables, holding creditor meetings, receiving and submitting reconciliation plans from the Bankrupt Debtors; The creditors meeting was held on October 11, 2018, to verify the receivables of P.T. Kertas Leces (Persero) (in bankruptcy). The curator, Febry Arisandi, S.H., emphasized that the creditors' meeting related to the verification was not only to match the invoice value but also to ensure its classification (Arisandi, 2020).

**Bankrupt asset settlement stage.** At the stage of settlement of the bankruptcy estate of P.T. Kertas Leces (Persero) (in bankruptcy) has just stepped into the implementation of the settlement and selling all bankrupt assets either by public auction or privately, with the price first being estimated by the appraisal team in accordance with Article 184 of the Bankruptcy Law and Suspension of Debt Payment Obligations. In this case, the Asset Management Company (PPA) as a separatist creditor announces the collateral assets of a plot of land with an area of 623 m<sup>2</sup> along with the building on it in accordance with the Certificate of Hak Guna Bangunan No. 277/ Kramat Pela registered under the name of P.T. Kertas Leces (Persero) (in bankrupt), with a limit of Rp. 11.49 billion and offer a guarantee of Rp. 3.44 billion in the Auction Offer dated December 11, 2018, at KPKNL V, Jakarta. For this guarantee, if within two months the insolvency expires, by law, it becomes the authority of the curator to execute (Arisandi, 2020).

### 3.2 The Curator's Efforts in Facing Obstacles in the Implementation of P.T. Kertas Leces Persero in Bankruptcy

As previously described in point 1, that "execution" can be fulfilled if it has fulfilled two stages, namely the Bankrupt Asset Management Stage and the Bankrupt Asset Settlement Stage. P.T. Paper Leces (Persero) (In bankruptcy) has reached the Bankruptcy Assets Settlement Stage, namely selling all bankrupt assets by auction through the Central Jakarta KPKNL V, which has obtained an appropriate price estimate from the appraisal team.

On the other hand, in the course of this execution, it can be said that there were several obstacles, both internal and external constraints. Internal Constraints: 1) Differences in Interpretation of Assets Owned by State-Owned Enterprises, 2) Disharmonization of Legislation, 3) Data Col-

lection on P.T. Paper Leces (Persero), which takes a long time. External Constraints, namely: (1) Estimates from Appraisal (Assessment Team) Take a Long Time, (2) Low Market Share Conditions, (3) Approval from the Office of State Assets and Auction Services (KPKNL).

In connection with the existence of both internal and external constraints, there are several efforts that have been made by the curator in the execution of the assets of P.T. Paper Leces (Persero), namely:

1. Write to several agencies related to P.T. Paper Leces (Persero) (In bankruptcy). Efforts to send this official letter were sent to several institutions related to P.T. Paper Leces (Persero), such as PT. Asset Management Company (PPA), in accordance with the authority of the curator so that the proceeds from the sale of assets guaranteed by PPA can be used as bankrupt accounts or are in the account of the curator. In addition, the Ministry of Finance, the Tax Office, and the KPKNL (Office of State Assets and Auction Services).
2. inventory of assets belonging to P.T. Paper Leces (Persero) (In bankruptcy). it is intended that the assets belonging to PT. The Leces paper is clearly recorded for later price matching by the appraisal/assessment team. After obtaining the appropriate price estimate for the assets of P.T. Paper Leces (Persero) is then used as the object of an auction announced at the KPKNL (Office of the State Assets and Auction Service).
3. inventory of legal documents required by the curator in the process of implementing P.T. Paper Leces (Persero) (In bankruptcy)

Efforts to inventory these documents include: (1) A copy/photocopy of the bankruptcy decision from the Commercial Court; (2) A copy/photocopy of the bankrupt register; (3) A statement from the Balai Harta Peninggalan / Curator as the party who will be responsible in the event of a civil lawsuit and criminal prosecution; (4) Original and/or photocopy of proof of transfer of rights or other evidence/documents stating that the assets belong to the bankruptcy in the case of written assets belonging to third parties; (5) Determination/description from the Supervisory Judge regarding the commencement of the state of insolvency; 6) Original and/or photocopy of proof of ownership/rights if based on statutory regulations it is necessary that ownership/rights are not controlled, there must be a statement/certificate from the sale that the goods are not accompanied by proof of ownership/rights by stating the reasons and; 7) Letter of approval from the Supervisory Judge that the bankruptcy estate is sold through auction in the event that an appeal or review is filed against the bankruptcy decision (Arisandi, 2020).

### 4. CONCLUSION

In the execution of the bankruptcy assets of P.T. Kertas Leces Persero (in bankruptcy), the curator must go through two stages, namely the Bankruptcy Asset Management Stage and the Bankrupt Asset Settlement Stage, which have been carried out properly. However, there are still obstacles, namely: Differences in Interpretation of Asset Ownership of State-Owned Enterprises (Persero), there is disharmony of laws and regulations, the duration of asset data collection as well as in the appraisal, the length of data collection on assets owned (since establishment-bankruptcy), low interest in auction buyers, and difficulty in obtaining

approval Auction from the State Assets and Auction Service Office (KPKNL).

The curator's efforts in dealing with obstacles in the implementation of the assets of P.T. Kertas Leces Persero in Bankruptcy, both for internal and external obstacles carried out by the curator are sending letters to all agencies related to P.T. Kertas Leces (Persero) (In bankruptcy), conduct an inventory of owned assets and legal documents required by the curator in the process of implementing P.T. Kertas Leces (Persero) (in bankruptcy)

## REFERENCES

Astiti, S. S. H. (2014). Sita Jaminan dalam Kepailitan. *Yuridika*, 29(1), 61–82.

Cahyani, I., & Djatmiati, T. S. (2020). Demarcation BUMN: Between Private Laws and Public Laws. *Yuridika*, 35(2), 303–320.

Hartini, R. (2015). UUK dan PKPU No. 37 Tahun 2004 Mengesampingkan Berlakunya Asas Pacta Sunt Servanda Dalam Penyelesaian Sengketa Kepailitan. *Yustisia*, 4(2), 292–309.

Hartini, R. (2016). *BUMN Persero, Konsep Keuangan Negara dan Hukum Kepailitan di Indonesia*. Intrans Publishing.

Hartini, R. (2017). Legal Status of Bank Guarantee on Behalf of Third Parties in Bankruptcy Perspective. *Yustisia*, 6(1), 190–198.

Ilmar, A. (2012). *Hak Menguasai Negara Dalam Privatisasi BUMN*. Kencana Prenada Media Group.

Johan, S. (2021). Separatist Creditors Problems on Postponement of Debt Payment Obligations Based on the Supreme Court's Decree Number 30/KMA/SK/I/2020. *Fiat Justicia*, 15(3), 207–220.

Nilasari, R. P. (2013). Kedudukan Efek Dalam Hal Penjualan Dinyatakan Pailit Pada Transaksi Short-Selling Di Pasar Modal. *Yuridika*, 28(1).

Primadhang, E. F. (2014). Perlindungan Hukum Terhadap Konsumen Perumahan Graha Dewata Akibat Dipailitkannya PT. Dewata Abdi Nusa. *Arena Hukum*, 7(2), 172–194.

Ruslina, E. (2012). Makna Pasal 33 Undang-Undang Dasar 1945 dalam Pembangunan Hukum Ekonomi Indonesia. *Jurnal Konstitusi*, 9.

Sitepu, S. (2020). State-Owned Enterprises Finance from the Perspective of State Funds. *Yuridika*, 35(2), 363–387.

Sumawati, P. (2019). Restructuring State-Owned Enterprises (SOEs) as a Strategy to Face Demonopolization Policies. *Media Hukum*, 26(1), 11–22.

Mahkamah Agung. (2011). Putusan Kepailitan Perusahaan Badan Usaha Milik Negara PT. Djakarta Lloyd (Persero) Putusan Nomor 369 PK/Pdt/2011 Mahkamah Agung.

Surabaya Commercial Court. (2015). Decision of the Surabaya Commercial Court, Decision Number: 5/PKPU/2014/P.N. Niaga.Sby on May 18 2015.

The results of interviews with the Curator Team of P.T. Paper Leces (Persero), represented by Febry Arisandi, S.H., on March 1, 2020

## Neo sufism and the concept of seven dignities of Muhammad Nafis al-Banjari

Miftah Arifin<sup>1\*</sup>

<sup>1</sup>Institut Agama Islam Negeri Jember, Indonesia

\*Corresponding author: [miftaharifin@iain-jember.ac.id](mailto:miftaharifin@iain-jember.ac.id)

### KEYWORDS

Muhammad Nafis al-Banjari  
seven dignities  
durr al-Nafis.

**ABSTRACT** This study aims to describe how Muhammad Nafis al-Banjari's position in transmitting the doctrine of wahdat al-wujud in Indonesia. The research used a descriptive form with a qualitative approach and historical method. This study through four stages, namely heuristics, source criticism, interpretation and presentation. Nafis al-Banjari has played a vital role in transmitting wahdat al-wujud thought in Indonesia. Firstly, the thought of wahdat al-wujud tends to be difficult to be understood, but the next time, it can be explained more easily through the concept of the seven dignities. Nafis al-Banjari then explained the concept of The Book of Tuhfah al-Mursalah, written by al-Burhanpuri in his primary book, namely Durr al-Nafis.

© The Author(s) 2021

## 1. INTRODUCTION

The Kalimantan region is known as one of the areas that received Islam later compared to other areas in Indonesia. According to Hikayat Banjar, Islam reached the momentum in Kalimantan when Demak troops of Java arrived in Banjarmasin to help Prince Samudra. After his victory, Prince Samudera converted to Islam and changed to be Sultan Surian Syah as the first sultan. For a long time, Islam in Kalimantan only gained a few followers and was always a minority because Islam was only followed by the Malays, who were immigrants. Meanwhile, Islam was only able to enter slowly into the Dayak tribe, the original ethnic groups of Kalimantan.

There was no adequate information about how spreads Islam di Kalimantan was under the control of the sultan. There were no clear and systematic efforts to promote Islam in South Kalimantan. However, they used Arabic script to correspond with other rulers in the archipelago. Until then, the spread of Islam reached its momentum with establishing several religious institutions in South Kalimantan at the initiative of Muhammad Arsyad al-Banjari (1710 - 1812 AD). Arsyad al-Banjari was involved in a polemic with adherents of the wahdat al-wujud doctrine known as Abd al-Hamid in his area. In the next turn, the sultan decided to sentence Haji Abd al-Hamid to death.

These conflicts and tensions between Sufis and non-Sufis happened continuously. However, since the arrival of scholars such as Muhammad Arsyad al-Banjari and Muhammad Nafis al-Banjari, these conflicts could be managed and resolved. Sufism that is considered heretical can be returned in a form that is in harmony with the shari'ah, especially that carried out by Muhammad Nafis al-Banjari. Since then, tensions and conflicts have decreased, especially in the area of Kalimantan.

He wrote a very famous book entitled Durr al-Nafis. This book explains the doctrines of Sufism, especially about stages in Sufism in a new model and explains the doctrine of the seven dignities. This book became public reading among the people of South Kalimantan in the middle of the twentieth century, although there was controversy over this book. Some scholars state that this book is not following Sunni Sufism, but some others received it. Muhammad Nafis's Sufism teaches not only Sunni Sufism and not only philosophical tasawut. But it bridged the gap between the two types of Sufism, and then he combined the two. Through this book, the Sufi teachings can be well received in this area. The development of Sufism in South Kalimantan reached the golden age in Muhammad al-Nafis Banjari period (Ahmadi, 1996).

This theme becomes important to review that the central theme of neo-Sufism in the 17th century AD was the harmony between the shari'a aspects (legal aspects) and Islamic spirituality (Sufism). In almost the entire Islamic world, including in Indonesia, there is tension between Sufis and non-Sufis. After what happened in Aceh in the 17th century AD, and spread to other areas, later scholars such as Abdurrauf al-Singkili and Abd Samad al-Palimbani tried to reconcile Sufism and Shari'ah as was done by previous scholars as has been done by Imam al-Ghazali. If in Sumatra there are scholars such as al-Singkili and al-Palimbani, then in Kalimantan, the scholar who does the same thing well is Muhammad Nafis al-Banjari. This shows that the renewal of Sufism was carried out by Indonesian scholars continuously and is still ongoing today (Howell, 2012).

## 2. METHOD

The research used a descriptive form with a qualitative approach and historical method. The historical method is carried out by comparing several historical works and reliable

sources based on the historical method. Intertextual studies are needed to reveal ideas or polemics that occurred because the texts and writings produced by Indonesian figures cannot be separated from the situations and conditions when the text was written. The written text could be in response to any questions around in society or written at the ruler's request. Therefore the ideas and thoughts of people written at that time in any form such as manuscripts or other people's ideas became very important. In addition, the writings produced by scholars about ideas and figures become an important material to enrich this study.

This study through four stages, namely heuristics, source criticism, interpretation and presentation. Heuristics is an activity to collect traces or signs of the past. After that, a critical review is carried out to investigate whether the traces are true based on historical methods. From the collected data, interpretation is carried out to determine the interconnected meanings of the facts obtained. Meanwhile, the final step is to convey a synthesis of the data obtained (Hegelian Analysis).

### 3. RESULTS AND DISCUSSION

#### 3.1 His Life and Works

He was well known as a Sufi through his primary work entitled *Darr al-Nafis fi Bayan al-Wahdat al-Afal wa al-Asma' wa al-Shifat*, which spread widely in Indonesia. He was born in Martapura in 1735 AD in the Duke family, so Nafis al-Banjari lived in the more recent period compared with Arsyad al-Banjari. After that, al-Nafis Banjari went to Mecca to study, but it is not found who his friends were in Haramayn. The actual year of birth of al-Nafis Banjari can not be determined with certainty. In 1735, it was generated from the calculations that in his book *al-Durr al-Nafis* stated that the book was completed in the year 1200 AH / 1785 if it is assumed he finished the book at the age of 50 years, the estimated year of birth is about 1735 AD.

In Makkah, al-Banjari wrote a book of mysticism in Malay entitled *al-Darr al-Nafis fi Bayan wahdat al-Afal wa al-Asma' wa al-sifat wa al-<sup>a</sup>at al-Taqdis* (the Beautiful Pearl of Explaining the Unity of Deed, Name, Nature, and the Purified Substance) completed in 1785 AD. In the book, it mentioned some references, among others; *Syarh Dala'il al-Khairat* of Muhammad Sulaiman al-Jazuli, *Syarh al-Wird al-Syahrin* of Abdullah bin Hijazi al-Syarqawi al-Misri, *Jawahir wa al-Durar* of Abd al-Wahhab al-Sya'rani, *Futuhat al-Makkiyah* dan *Fushush al-Hikam* of ibn Arabi, *Insan al-Kamil* of al-Jili, *Ihya' Ulum al-Din* by al-Ghazali, and so on.

The lists used as references could understand that *Darr al-Nafis* is not a regular Sufism book, but it combines the works of controversial people such as ibn Arabi. Nafis al-Banjari was fully aware of this; it is said that this book contains problems that are subtle and profound and secret, which could only be understood by those who have high knowledge (Al-Banjari, n.d.).

In addition to the book, it is not found another work of al-Nafis Banjari, but Abdullah still mentions another work of al-Nafis Banjari, which is *Kanz al-Sa'adat fi Istilahat al-Suffiyah* (the Treasury of Happiness; the explanation of Sufi terms). This book has not been found so that it is a doubt about its existence.

In *al-Durr al-Nafis*, Nafis al-Banjari mentions many of his teachers in Haramayn, among them; al-sammani,

Muhammad al-Jawhari, Abdullah ibn al-Hijazi Syarqawi -a famous Sufi scholar in Mecca who was then on the charge of Sheikh of al-Islam and Sheikh of al-Azhar. Another teacher was Muhammad Siddiq bin Umar Khan and Abd al-Rahman ibn Abd al-Aziz al-Maghribi (Abdullah, 1980) This book also explains that in the field of jurisprudence, he follows the Shafi'i madhab. In theology, he follows the Ash'ari madhab, in the field of Sufism, he follows al-Junaid, and in the field of tareqat, he claimed to be a follower of Qadiriyah, Syattariyah, Naqsyabandiyah, Khalwatiyah, and Sammaniyyah. (al-Banjari, n.d.)

#### 3.2 Neo Sufism of Muhammad Nafis al-Banjari

Neo Sufism is generally defined as a movement characterized by refusing extravagant Sufism, not prioritizing Sufi eschatism and metaphysics, but prioritizing practice that strictly adheres to Shari'ah. A clear definition of the meaning and use of the term neo-Sufism was started by Fazlur Rahman. Neo Sufism is Sufism that has been renewed, especially stripped of its eschatism and metaphysical content, and replaced by orthodoxy theorems (Fazlurrahman, 1979). This neosufism emphasizes and renews the moral factor and removes the excessive traits of deviant Sufism. Therefore, the concern of neo-Sufism is the socio-moral reconstruction of the Muslim community. This is different from the previous characteristics of Sufism which prioritized forms of individual piety compared to society. While (Trimingham, 1971) says, this is called the middle way, namely combining fiqh and Sufism.

The emergence of these movements has not only occurred in recent centuries but has begun in the classical era when there was a conflict between speculative ascetic Sufis who were seen as heterodox and shari'ah groups (especially ahl al-hadits). At that time, the spirit of the speculative Sufis was always viewed with suspicion. The traditions of these Sufis, who often separated themselves from the famous great scholars (faqih), were always suspected by these scholars. The excessive anger and suspicion of these legalists caused, for example, Shihab al-Din Yahya al-Suhrawardi to become one of the victims (Shah, 1964).

The resistance by legalists to this Sufi practice took place vigorously and continuously, for example, the resistance of the Hanbali scholars to the behaviour of the Sufi schools of al-Muhasabi, Sari al-Saqati and their followers. The censure of Ibn al-Qayyim al-Jawziyah (d.597/1200) in his half work entitled *Talbis Iblis* to the Sufis by attacking their differences from shar'i law. Ibn Taymiyah (d.728/1328) attacked the behaviour of the Sufis by distributing many fatwas and writing pamphlets. Ibn Taymiya denounced Sufi practices in his ecstasy through music and dances and pilgrimages to tombs with treats. Everything is said to be something that is contrary to sharia(Trimingham, 1971).

However, there is no authentic evidence that the hadith experts are against all forms of Sufism because what they reject is actually ascetic and excessive Sufism that ignores shari'ah. The Hambali scholars who are known for their steadfastness in adhering to the hadith and their rejection of rational philosophy and speculative mysticism have apparently accepted Sufism. They accept Sufism on the condition that it is carried out in accordance with Shari'ah teachings. This case can be found in, for example, Ibn Taymiyah (d.728/1328) or Ibn al-Qayyim al-Jauziyah (d.597/1200) (Rahman, 2000). From both, there is no evidence that they oppose Sufism blindly. They only oppose the ex-

cessive practice of Sufism, ignore the shari'ah aspect and seem to only prioritize the essence aspect. These people do not denounce what is called Sufism, but what they consider to be illegality (Trimingham, 1971:151)

Neosufism that occurred in the archipelago at the end of the seventeenth century onwards was an idea conveyed by the Haramayn scholar and brought to the archipelago through his Javanese students. Scholars such as al-Kurani and al-Barzanji spawned neo-Sufism ideas through their students, such as 'Abd al-Rauf al-Sinkili to the archipelago in the 17th century AD. And in the 18th century, Abd al-Shamad al-Palimbani was the disciple of al-Sammani also did the same.

As stated by John (1975), that the polemic issues in Aceh had arrived in Mecca and were discussed by Haramayn scholars. Even al-Kurani wrote a treatise specifically dealing with Javanese problems later. Al-Sinkili, as one of the students of al-Kurani, took a more moderate path in dealing with the problems of the wahdat al-wujūd doctrine that existed in society. 'Abd al-Rauf al-Sinkili was a prolific writer in various aspects of both the inner sciences (Sufism) and the outer sciences (shari'ah) such as fiqh, hadith, and interpretation. Neo Sufism also penetrated into the Kalimantan region through Muhammad Arsyad al-Banjari, who was a friend of Abd al-Shamad al-Palimbani. In contrast to al-Palimbani, who tried to reconcile the traditions of Islamic Sufism, Arsyad al-Banjari was more concerned with implementing the shari'ah aspect in Kalimantan.

The reconciliation of Sufism and sharia in Kalimantan was carried out by the next scholar, Muhammad Nafis al-Banjari, who composed the book *Durr al-Nāfi*. In *al-Durr al-Nafis*, Nafis al-Banjari followed his senior scholars who were concerned over the renewal of Sufism; he always emphasized the absolute transcendence and the unity of God because he believed that no one is able to know the secret of God. Al-Banjari, when he explained about monotheism, he said that no one could know the nature of the substance of God, even the apostles and angels. (Al-Banjari, n.d.).

In addition to clarifying the philosophical Sufism that explains God and Nature, al-Banjari also explains the procedures that should be followed by salik (who follows the Sufi path) to reach God's Blessing (ridlo). The descriptions of al-Nafis Banjari reminds us of al-Ghazali's concept in *Ihya' Ulum al-Din* about the book of ugliness (muhlikat) and goodness (munjiyat). The first, the follower (salik) must know all things that can cancel and thwart him compare with *Ihya' Ulum al-Din*, especially the al-muhlikat part (devastating) - to reach God's Blessing (ridlo). For that, salik must maintain various immoral both inwardly and outwardly. After the follower successfully overcomes the problems that could derail him from getting closer to God, then he must do things that can deliver to the next levels (Al-Ghazali, 1990).

After al-Banjari explains the foundation of the Shari'ah in achieving mystical way in his book, the next discussion is around the wahdat al-wujud (unity of being) concept. In this case, al-Banjari adopts the ideas of earlier scholars on the subject of manifestation. It is said that no one who knows the essence of God, then there are no words that can describe Him except to understand the term is not and no. *Durr al-Nafis* describes:

"The beginning is Allaah form, and his substance is not a form (jism), He is not an essence (Jauhar), He is not a substance (aradh), He is not united in (Ittihad), He is not come

down (hulul), and he does not do jihad, and there is no for Him He is no finite, and He is no beginning, and He is different from all things." (Al-Banjari, nd.).

Al-Banjari's description of God's absolute substance shows like the Arabian school (madhab) in explaining God in the first stage (martabat ahadiyat) (la ta'ayun). God is a substance that is not known by anyone, but He wants to be known so that God can be known. He must show Himself through the manifestation (tajalli) process. (al-Banjari, nd)250 Like other scholars of Arabian school (madhab), al-Banjari quotes a very popular hadith of prophet

"I am hidden treasury, and I miss to be known, so I create beings so that they know Me" (Al-Ghazali, 1990).

The manifestation of God (Tajalli al-Haqq) process in the conception of al-Banjari adopted the concept of the dignity of seven by al-Burhanpuri. The first dignity is martabat ahadiyat, which is the appearance of the whole nature and His names (asma), but both sank into God's substance. This dignity is the highest dignity. The second dignity is martabat wahdat. In this dignity, every nature and God's asma has appeared in general (ijmal), which is said to be the essence of the prophet Muhammad which is the essence of nature and essence of everything because according to al-Nafis Banjari, everything was created from the Nur Muhammad, then Muhammad is also called huwwiyat al-alam. The third dignity is martabat wahidiyat, which is the appearance of any nature and His names (asma) in particular (tafsili), from His all names (asma) and nature which is general (mujmal) on the previous dignity.

Nafis al-Banjari has been explained as follows, "The first of the tanzil dignities is martabat ahadiyah, then it produces all natures and names (asma), but both are embodied in the substance. Martabat Ahadiyah is the highest dignity that is martabat kunhi zat Allah Ta'al'a.

The second of Martabat tanazzul is martabat Wahdah. It produces all natures and names (asma) generally (organization), that is the substance of our prophet Muhammad which is the origin of all the entities and the rest of his life. So it is our prophet Muhammad who is huwwiyat al-Alam, it means that the essence of nature and origin of all things (asyya') because that all things (asyya') were made of our prophet Muhammad nur.

The third of martabat tanzil is martabat wahidiyyah which produces all the nature and names (asma) by dividing the existing goods, and it becomes general (mujmal) on Wahdah and on this wahidiyyah produces this book, that is his sentence *inna ana Allah* which means that I am God. It starts because it receives khitab with kalam that is qadim on wahidiyyah because it is obtained khitab with it, which is alam sifat and asma' (the world of nature and names) (Al-Banjari, nd.).

These three dignities include a'yan tsabitah (permanent entity) that still has been potential and not produced outwardly. Al-A'yun al-Khariji, which is the next level, starts with martabat alam arwah as the fourth dignity. Martabat alam arwah is the essence of all souls (spirits) that are not arranged. It is silent from all things arranged and widely spread; that is the essence of all outer soul. It is on all substance and illustration.

The fifth dignity is martabat alam mitsal that is something subtle and can not be divided. It means all things become smooth form, and it does not receive happiness. The sixth dignity is martabat alam ajsam that is everything rough and can be divided. It means that all things become

more rugged; they receive happiness. The Seventh dignity is martabat alam insan; that is the dignity that collects all the previous six dignities (Al-Banjari, nd.).

Regarding the relationship between God and nature, al-Banjari used waves, ocean, and froth terminologies. Everything essentially is water. As it is expressed by the following:

"Alam Mitsal by the Sufi (Arif Billah) because it also emphasizes the concept of not the substance, like a sea, wave and foam, and all of them is also water. Nothing is manifested only with water. When the outer is a move, from that, they become the waves and froth. When the place is vast, the water becomes sea, but nevertheless, it is water. Covering the form of water is ocean, waves and foam as if water does not move and the place is narrow, and undoubtedly there will never be sea, wave, and foam. Then it returns to water and sea and foam also go to be water. Such as manifestation of Allah, it covers His form in all of nature, there will never be an entity, and everything is mortal (fana) in the manifestation of God (Allah Ta'ala)." (Al-Banjari, nd.).

The expression of waves and sea reminds to the expression conveyed by Hamzah Fansuri in his work of Syarab al-Asyiqin, and it also can be found in the book of al-Jili entitled Al-Insan al-Kamil about the expression of water with ice (Hadi, 1995).

As an illustration, a creature is similar to ice And you are the running water Ice actually it comes from water It is because it has decided to be such (Al-Jili, 1956)

Then al-Banjari asserts that human dignity potentially can achieve martabat insan kamil if he could get through the dignities as it already mentioned so that it units in beautiness (Jamal) and perfectness (Jalal) as reflected in the prophet Muhammad characters. Actually, every action is an act of God, and people do not have the slightest act at all, and all asma is asma God, all nature is the nature of God, and all things that are in creature are only His form. This is the highest monotheism in view of al-Nafis Banjari (Al-Banjari, nd.).

In turn, Nafis al-Banjari was well known for spreading the teachings of Islam to the inland region. It made Nafis widely known as the nomad scholar. One of the results of the preaching reached Kalua (now included in the Tabalong territory), in the 19th century had been transformed into the centre of the spread of Islam in the northern part of South Kalimantan.

He had a very big role in spreading Islam in the region of the Banjar Sultanate. Until then, Nafis was given the honorary title of Maulana alAllamah al-Fakhamah al-Mursyid ila Tariq as-Salamah (The noble, highly knowledgeable, respected counsellor to the righteous path) (Asidiq, 2003).

#### 4. CONCLUSION

Muhammad Nafis al-Banjari has a very important role in the transmission of neosufism and the reconciliation of wahdat al-wujud thoughts in Indonesia. At first, the idea of wahdat al-Manifestation tends to be difficult to understand, but the next, it can be explained more easily through the concept of the seven dignity. This concept was first introduced by al-Burhanpuri in his work entitled Tuhfah al-Mursalah (Al-burhanpuri, 1965). This book of tuhfah inspired the scholars who came next to continue reconciling Sufism. One of them is Muhammad Nafis al-Banjari then explains the concept of Tuhfah in his main book is entitled Durr al-Nafis.

#### REFERENCES

Abdullah, H. (1980). *Perkembangan Ilmu Tasawuf dan Tokohnya di Nusantara*. Al-Ikhlas.

Ahmadi, I. (1996). *Ajaran Tasawuf Syekh Muhammad Nafis al-Banjari*. IAIN Jakarta.

Al-Banjari, Muhammad Nafis. (nd.) *Al-Durr al-Nafis*. al-Haramain.

Al-burhanpuri. (1965). *Tuhfat al-Mursalah ila ruh al-Nabi*. The Australian National University.

Al-Ghazali, A. H. M. (1990). *Iḥyā Ulūm al-Dīn*. Dar al-Fikr.

Al-Jili. (1956). *al-Insan al-Kamil*. Syirkah Maktabah wa Mathba'ah Musthafa al-Bab al-Halaj.

Asidiq, Y. (2003). *Muhammad Nafis al-Banjari: Sang Ulama Pengembawa*. Republika.

Fazlurrahman. (1979). *Islam*. Chicago University Press.

Hadi, A. (1995). *Hamzah Fansuri, Risalah Tasawuf dan Puisinya*. Mizan.

Howell, J. D. (2012). Sufism and Neo Sufism in Indonesia Today. *Review of Indonesian and Malaysian Affairs*, 46(2), 1-24.

Shah, I. (1964). *The Sufis*. Anchor Books Doubleday & Company Inc.

Trimingham, J. S. (1971). *The Sufi Order in Islam*. Oxford Univ. Press.

## The effectiveness of online Mathematics learning

Akhsanul In'am<sup>1\*</sup> and Siti Hajar<sup>2</sup>

<sup>1</sup>Universitas Muhammadiyah Malang

<sup>2</sup>Madrasah Tsanawiyah Negeri 1 Malang

\*Corresponding author: [akhsanul@umm.ac.id](mailto:akhsanul@umm.ac.id)

### KEYWORDS

Activity  
Learning effectiveness  
learning evaluation  
responses

**ABSTRACT** This study aims to analyze the effectiveness of online Mathematics learning. It employed a qualitative research design with a case-study technique. Subjects of this study were 7th graders from five different classes at Madrasah Tsanawiyah Negeri 1 Malang. Data collection methods were observations, documents of zoom learning, and interviews with student guardians. The obtained data were analyzed through data description. Results showed that there were disturbances in the online learning activities. Among the problems were student punctuality and unstable internet connection activities. During the online learning, most students could not follow the lesson very well, and only a few responded to the teachers. There were also problems in students' monitoring and evaluation. These aspects of learning activities, students' responses, and monitoring and evaluation implied that online Mathematics learning was ineffective.

© The Author(s) 2021

### 1. INTRODUCTION

The current Covid-19 pandemic has been around for more than 1.5 years and has changed our political, economic, social, and cultural lifestyle, as well as security. There have also been major changes in the field of trading where it used to be carried out physically, now has shifted into online. Our usual face-to-face purchasing activities now seem less safe than online shopping (Agustino, 2020; Setiati & Azwar, 2020; Syafrida & Hartati, 2020).

Indonesia, a country where community activities are strongly characterized as a nation, has also undergone drastic changes. Communal activities such as social gatherings and congregational prayer are now carried out virtually. Meetings and discussions in the family or office are also carried out virtually (Ahmady et al., 2020; Syafrida & Hartati, 2020).

Indonesians' habits to relieve fatigue and doing recreational activities cannot be carried out optimally. Such activities have turned into individual activities. Some find leisure in gardening, some in writing, and some do other things as long as the activity could ward off fatigue.

In education, learning that was usually conducted face-to-face at school was forced to be conducted virtually. Much research on the implementation of online learning has been conducted, and several problems emanated, including 1) unstable internet connection (even no network); 2) minimum student understanding on the subject matter; 3) evaluation of student learning outcomes (Bibi & Jati, 2015; Kliziene et al., 2021; Phoong et al., 2020). When online learning is implemented, students faced difficulties in following the given lesson (Achdiyat & Andriyani, 2016; Aluja-Banet et al., 2019; Bibi & Jati, 2015). Among the reasons are students'

difficulties to wake up early, lack of parental support where they could not supervise their children during online learning activities.

Meanwhile, teachers also faced difficulties where they could not keep up with the online learning system properly (Aluja-Banet et al., 2019; Phoong et al., 2020; Zeinali et al., 2020). Some teachers needed help in operating digital facilities, resulting in minimum learning implementation. For instance, teachers faced problems in sending and receiving online assignments.

It is obvious that there are too many problems with online learning activities. Ideally, learning should be meaningful with active interaction between teachers and students, although it is conducted online. Especially in learning Mathematics, direct interaction between teachers and students is critical because prompt feedback can be given, which online learning cannot accommodate.

Besides content knowledge, learning Mathematics require problem-solving skills. Polya noted four stages in Mathematics problem solving, including understanding, planning, implementing and re-checking. The stage of understanding is obtained by students from the teachers, both through direct and online learning, as well as planning. However, when students have to perform problem-solving, satisfactory results can only be attained through direct face-to-face learning. In face-to-face learning, teachers can check how the students are doing and can assist when there are problems. Likewise, the stage of re-checking can be performed properly through direct learning. Hence, this study aims to explore Mathematics online learning along with student responses. It also investigates the extent to which students understand the learning material through

the three aspects of indicators of the effectiveness of Mathematics online learning.

## 2. LITERATURE REVIEW

Among the attempts to determine the success of an activity is by looking for its effectiveness (In'am, 2017). Concerning online learning activities, a study is critical to determine the extent to which the success of an online learning activity can take place in accordance with the predetermined plan. The effectiveness of learning activity can be measured through three aspects, namely: 1) student activities during learning, which student achievement can be measured against the learning plan; 2) students' responses throughout the online learning activity; and 3) student learning outcomes, which can be measured following the criteria of the minimum score (Christina & Kristin, 2016; In'am, 2017).

### 2.1 Student activity

Virtual learning has resulted in various online learning activities. Online interaction between teachers and students has brought the epitome of close to the eyes but far within reach. This condition has impacted the implementation of student activities.

Learning activities are one's actions to achieve the desired goals of education. Effective learning can be assessed through student activities. In this case, students' actions are closely related to their behaviours, opinions, and interests during learning (Mawaddah & Maryanti, 2016).

Student learning activities include their actions in observing pictures. Their ability can be seen from oral activities, including giving opinions and suggestions, asking questions, and discussion. During the Covid-19 pandemic, students' activity can be observed through their virtual involvement, including crafting and posing questions, discussion, and expressing opinions. Hence, learning activities includes student activities in visual, listening, writing, and mental activities.

### 2.2 Student responses

Attitudes that show students' active participation can be considered as student learning responses. Virtual learning has changed the forms of responses that can be observed directly into virtual observation. This calls for a comprehensive teacher ability in analyzing student responses by taking into account the context and surrounding environment.

There are three aspects to analyze student responses, including 1) cognitive, which relates to students' understanding and skills; 2) affective, which relates to students' emotions, interests, attitudes, and judgment; 3) conative, which relates to students' real behaviour, such as actions or changes (Zulkarnain & Amalia, 2016).

It is also said that students' responses are divided into two, namely: 1) positive responses, which are marked by an attitude of accepting, responding, showing attention, and understanding; and 2) negative responses, which are characterized through the attitude of resistance, denial, avoidance, and disrespect. At the time of learning, student responses will increase when they have an interest in getting good grades (Lestari, 2015).

In conclusion, students' responses reflect their behaviour and interest in learning, which they actively involve and respond to teachers during learning.

### 2.3 Student learning achievement

Student learning achievement is attained after a specific amount of time and learning experience. It also refers to changes in student behaviour upon completion of a lesson. Successful learning achievement is characterized by students' improvement in understanding of a lesson (Bibi & Jati, 2015; Andriyani & Rasto, 2019).

Satisfactory learning outcomes take place when the learning objectives are met by both students and teachers. It indicates that teachers' classroom practices are good, and vice versa if students' learning achievement is not satisfactory. Low learning outcomes also implies that the learning process is ineffective (Achdiyat & Andriyani 2016).

In so doing, teaching and learning activities do not solely cover the material transfer but also provide monitoring and evaluation. Both processes aim to study the level of student outcomes after learning (Firmansyah, 2015).

## 3. METHOD

This study employed a qualitative research design with a case study technique. Subjects were 7th graders from five different classes at Madrasah Tsanawiyah Negeri (MTsN) 1 Malang. This study investigated the implementation of online Mathematics learning in semester 2 of the 2020/2021 academic year. Different from public schools, MTsN 1 Malang separates the students into male classes and female classes. Subjects of this study were three female classes and two male classes.

The data collection process included observations during the online learning, interviews with students' guardians, and documents in the forms of daily exam results and final term exam results. The obtained data were analyzed descriptively through the explanation of observation field notes and ethical presentation of the interview transcription.

## 4. RESULTS AND DISCUSSION

### 4.1 Student activity

Mathematics subject at MTsN 1 Malang in 2020/2021 academic year was carried out virtually via Zoom. Meanwhile, the assignments and exams were distributed through an e-learning program developed at the school. The five classes (Class A, B, C, D, and E) have relatively similar characteristics. Class B and D were all-male classes, and A, C, and D were all-female classes.

Observation results showed that only one person in Class A was less involved. A confirmation via What's App with the student's parents showed a lack of parental supervision during the learning process. Three other students were monitored to perform low learning motivation because of less time management ability between studying and other activities.

In regards to learning motivation, two students in classes B and C were found less motivated, while only a small number of students in Class D were actively involved. Ten students were monitored actively in learning activities. However, students of Class E (all-female class) were reported to be actively involved during learning.

## 4.2 Student responses

It is stated earlier that the observation of student attitudes during learning could help identify students' involvement. The observation results indicated that students of Class E (all-female class) showed a very good response during online learning. Meanwhile, Class A and C (all-female class) showed fairly good responses.

Class B and D, where all students were males, showed poor responses. Hence, the researcher interviewed student guardians. Some parents stated that they could not supervise home learning because they had to work.

There was one particular problem where a student did neither show good response nor learning motivation. The school's guidance and counselling staff handled this student, yet his learning motivation did not increase. Interview results with the parents showed that: 1) the student could not manage time well during home learning, and 2) boredom because of staying home daily and less social interaction.

## 4.3 Learning achievement

Learning achievement measures learning effectiveness. MTsN 1 Malang belongs to the group of favourite schools in the city where students' minimum score criteria are quite high. The criterion for Mathematics in MTsN 1 Malang is 80. Based on the tests, the daily exams are also used as summative exams. The results showed that most students achieved learning outcomes below the minimum score criteria.

Out of 27 students in Class A, four students scored according to the minimum criteria. In Class B, nine students out of 30 students scored above the minimum criteria. Out of 27 students in Class C, 21 students scored under the minimum criteria, leaving only nine students scored above the minimum criteria. In Class D, only ten students (out of 30 students) scored above the minimum criteria. Last, out of 28 students in Class E, only 12 students scored above the minimum criteria. These findings showed that the majority of students achieved below the minimum score criteria.

This finding concurs with Phoong and colleagues (2020), who stated that virtual learning might not be effective due to several factors. Also, evaluations during virtual learning were inaccurate where a refined policy regarding the implementation of virtual learning is needed (Kabir, 2020; Martín et al., 2021). The findings of this study follow research by Aluja-Banet and colleagues (2019), who stated that student learning motivation during the Covid-19 pandemic was low.

## 5. CONCLUSION

From the three aspects that determined student learning effectiveness, it can be concluded that online Mathematics learning for all-female classes were fair. Meanwhile, all-male classes were poor. Results of students' responses showed similar findings unless one particular class was categorized good, while the other four classes are fair.

Based on the learning achievement, students' exam scores showed that there was only one class categorized as good, in which all students are female. Meanwhile, the other four classes showed fair achievement. Taken together, online Mathematics learning in MTsN 1 Malang was categorized as ineffective.

## REFERENCES

Achdiyat, M., & Andriyani, F. (2016). Hasil Belajar Matematika Ditinjau dari Model Pembelajaran Teams Assisted Individualization (TAI). *Formatif: Jurnal Ilmiah Pendidikan MIPA*, 6(3), 246–255. <https://doi.org/10.30998/formatif.v6i3.996>

Agustino, L. (2020). Analisis Kebijakan Penanganan Wabah Covid-19: Pengalaman Indonesia. *Jurnal Borneo Administrator*, 16(2). <https://doi.org/10.24258/jba.v16i2.685>

Ahmady, S., Shahbazi, S., & Heidari, M. (2020). Transition to Virtual Learning during the Coronavirus Disease-2019 Crisis in Iran: Opportunity or Challenge? *Disaster Medicine and Public Health Preparedness*, 14(3). <https://doi.org/10.1017/dmp.2020.142>

Aluja-Banet, T., Sancho, M. R., & Vukic, I. (2019). Measuring motivation from the Virtual Learning Environment in secondary education. *Journal of Computational Science*, 36. <https://doi.org/10.1016/j.jocs.2017.03.007>

Bibi, S., & Jati, H. (2015). Efektivitas model blended learning terhadap motivasi dan tingkat pemahaman mahasiswa mata kuliah algoritma dan pemrograman. *Jurnal Pendidikan Vokasi*, 5(1), 74. <https://doi.org/10.21831/jpv.v5i1.6074>

Christina, L. V., & Kristin, F. (2016). Efektivitas Model Pembelajaran Tipe Group Investigation (Gi) Dan Cooperative Integrated Reading and Composition (Circ) Dalam Meningkatkan Kreativitas Berpikir Kritis Dan Hasil Belajar Ips Siswa Kelas 4. *Scholaria: Jurnal Pendidikan Dan Kebudayaan*, 6(3), 217. <https://doi.org/10.24246/j.scholaria.2016.v6.i3.p217-230>

In'am, A. (2017). Efektivitas Model Pembelajaran Matematika berbasis Metakognitif. 21(April), 1–12.

Kabir, M. R. (2020). Impact of faculty and student readiness on virtual learning adoption amid Covid-19. *Revista Internacional de Educacion Para La Justicia Social*, 9(3). <https://doi.org/10.15366/RIEJS2020.9.3.021>

Kliziene, I., Taujanskiene, G., Augustiniene, A., Simonaitiene, B., & Cibulskas, G. (2021). The impact of the virtual learning platform eduka on the academic performance of primary school children. *Sustainability (Switzerland)*, 13(4). <https://doi.org/10.3390/su13042268>

Martín, C. T., Acal, C., Honrani, M. El, & Estrada, Á. C. M. (2021). Impact on the virtual learning environment due to covid-19. *Sustainability (Switzerland)*, 13(2). <https://doi.org/10.3390/su13020582>

Mawaddah, S., & Maryanti, R. (2016). Kemampuan Pemahaman Konsep Matematis Siswa SMP dalam Pembelajaran Menggunakan Model Penemuan Terbimbing (Discovery Learning). *EDU-MAT: Jurnal Pendidikan Matematika*, 4(1). <https://doi.org/10.20527/edumat.v4i1.2292>

Phoong, S. Y., Phoong, S. W., & Phoong, K. H. (2020). The effectiveness of frog virtual learning environment in teaching and learning mathematics. *Universal Journal of Educational Research*, 8(3 B). <https://doi.org/10.13189/ujer.2020.081502>

Setiati, S., & Azwar, M. K. (2020). COVID-19 and Indonesia. *Acta Medica Indonesiana*, 52(1).

Situmorang, A. S. (2016). Efektivitas Strategi Pembelajaran Ekspositori Terhadap Pemahaman Konsep Matematika. *Journal of Chemical Information and Modeling*, 53(9), 1689–1699. <https://doi.org/10.1017/CBO9781107415324.004>

Syafrida, S., & Hartati, R. (2020). Bersama Melawan Virus Covid 19 di Indonesia. *SALAM: Jurnal Sosial Dan Budaya Syar'I*, 7(6).<https://doi.org/10.15408/sjsbs.v7i6.15325>

Wibowo, A. (2017). Pengaruh pendekatan pembelajaran matematika realistik dan saintifik terhadap prestasi belajar, kemampuan penalaran matematis dan minat belajar. *Jurnal Riset Pendidikan Matematika*, 4(1), 1. <https://doi.org/10.21831/jrpm.v4i1.10066>

Zeinali, M., Almasi-Doghaee, M., & Haghi-Ashtiani, B. (2020). Facing COVID-19, jumping from in-person training to virtual learning: A review on educational and clinical activities in a neurology department. *Basic and Clinical Neuroscience*, 11(2).<https://doi.org/10.32598/bcn.11.covid19.910.2>

Zulkarnain, I., & Amalia Sari, N. (2016). Model Penemuan Terbimbing dengan Teknik Mind Mapping untuk Meningkatkan Kemampuan Pemahaman Konsep Matematis Siswa SMP. *EDU-MAT: Jurnal Pendidikan Matematika*, 2(2).<https://doi.org/10.20527/edumat.v2i2.619>

## Group cohesiveness and poly-culturalism: The study of student nomads in Malang

Diah Karmiyati<sup>1\*</sup>, Clara Nidya Corsha<sup>1</sup>, and Muhammad Fath Mashuri<sup>1</sup>

<sup>1</sup>Universitas Muhammadiyah Malang

\*Corresponding author: [diah@umm.ac.id](mailto:diah@umm.ac.id)

### KEYWORDS

Group Cohesiveness  
Poly-culturalism  
Students Nomads

**ABSTRACT** Students in Malang is derived from the background of a diverse culture. Students nomads have a community called the organization of the area. The interaction between cultures is very prone to conflict and friction that very harmful. The prevention of conflict can be done with poly-culturalism or the belief that each group has interacted with each other and provide a positive influence. But, the cohesiveness of the group owned by a regional organization as the internal strength of the group can be a barrier in the relationship between the organization of the area. The purpose of this study is to determine whether there is a correlation between group cohesiveness with poly-culturalism on student nomads in Malang. This research is quantitative research, using purposive sampling techniques. The research instrument used the Group Cohesiveness Scale and Poly-culturalism Scale. The results showed that there is a significant positive relationship between group cohesiveness and poly-culturalism on student nomads in Malang. Group cohesiveness which is owned by the students of the nomads in Malang does not inhibit the formation of poly-culturalism.

© The Author(s) 2021

## 1. INTRODUCTION

Malang is a city of students, so that Malang became one of the goals of the students from various cities of Indonesia to continue their education. Malang has some of the best universities, which became the target of students from various cities in great Malang, even outside the island of Java in general. Students gain knowledge in Malang is derived from the area, tribe, race, ethnic to a diverse culture, it is this cause there is a diversity of culture in Malang. Each of the students who come from outside the Malang City has a regional association organization of its own that is an organization or association to overshadow the students with the background area of the same origin, for example, a student who comes from the province of West Kalimantan involved in the organization of Family area with Students from West Kalimantan (KPMKB), a student from Madura involved in the organization of the regional association of Students of Madura (IMAMA), students who come from the province of Bengkulu involved in the organization of local Family Ties Student Bengkulu Malang (IKMBM) and many more local organizations located in Malang. The organization of this area was often met in some cultural activities, such as Festival Culture Village that held by the University of Brawijaya. The Festival has become a place for local organizations to introduce a variety of cultural uniqueness of the region.

The interaction of the people or groups with different cultural backgrounds is not a new thing that is encountered in Malang. The competition is sometimes inevitable from the life of the ethnically diverse each group featuring the group and threw a deficiency or alleged negative to the

other groups. The interaction between ethnic or groups of students often leads to misunderstandings in the receive and convey information from two sides. It was motivated by the occurrence of the process of communication between the students' groups.

The conflict between race, ethnicity, and religion had occurred in Indonesia. In 1999 there was a Perang Ambon, which is also known as the bloody conflict because it killed thousands of lives. The cause of this war is quite simple, preceded by a dispute between two youth and bring the two religious and community groups into it. In the year 2001 also a tragedy occurs in Sampit. Tragedi Sampit is a bloody conflict that occurs between the Dayak and the citizens of migrants from Madura. This conflict occurred due to the shift between the two great tribes that resulted in the disruption of the stability and security of the nation; even hundreds of people were homeless, and not a few were stretched their life.

Conflict involving community groups also occurred in Malang, namely the clash between students from Papua incorporated in the Aliansi Mahasiswa Papua (AMP) with the people of Malang. Another conflict involving ethnicity happened between the citizens of Malang and the students of East Nusa Tenggara due to perceived discrimination.

Conflict will always have a negative impact on various areas, both the direct impact that can be felt the moment was or the impact that will be felt after the conflict ended. Peace efforts begin with improving the objectivity and fairness of individuals or groups. Interact with each other positively influences both, better in looking at the group of tribal values, beliefs, and culture.

Poly-culturalism is the belief that racial or ethnic groups that are different constantly interact exchange and mutual influence and has been associated with attitudes between positive and greater comfort with diversity (Rosenthal, L., Levy, S. R., Katser, M., & Bazile, 2015). Poly-culturalism, similar to multiculturalism in recognizing the importance of people with cultural backgrounds differences, focuses on the interaction between cultural groups that influence each other. The individual with the mindset poly-culturalism compared with those who have the mindset of multiculturalism are more willing to criticize their own culture (Tjipto, S., & Bernardo, 2019). The more eager to interact between groups and have a more positive attitude to people from different cultures (Hong, Y.-y., Zhan, S., Morris, M. W., & Martinez, 2016).

Another reason why poly-culturalism is interesting to learn is that can be unifying. Consciousness to interact with each other and have a positive outlook towards other groups owned by the poly-culturalism can prevent groups from the tension that comes when a group of mutually tangent, can even cultivate the awareness of the unity of the poly-culturalism is closely related to the willingness to accept the diversity. Occurs mainly in the immediate environment even individuals who believe in this ideology will not hesitate to criticize their own culture if it is true. In line with the previous statement, it states that poly-culturalism tends to be associated with willingness to direct contact between the group and the intention to behave positively with people from cultural minorities or foreigners also with groups of migrants (Tjipto, S., & Bernardo, 2019). Also, poly-culturalism can cultivate an attitude of inter-group more positively by making people feel more connected with members of different groups (Rosenthal, L., & Levy, 2012). Poly-culturalism is also associated with the belief in social equality among different groups of feeling more comfortable with the respect for diversity and interest to interact with people from different backgrounds (Rosenthal, L., & Levy, 2010).

Poly-culturalism also focuses on how people live side by side to interact with each other and then take cultural influences from the various cultures (Morris, M. W., Chiu, C.-y., & Liu, 2015). Believing the poly-culturalism students from diverse cultural backgrounds will affect each other through a willingness to interact and establish relationships with groups of different cultures and foster positive attitudes towards groups of different cultures. The way that the other part, other groups, other cultures have been connected as well as have interaction and influence each other and with the attitude of mutual acceptance and more positive towards other groups will have an impact on the comfort of diversity so that peace will be felt.

Group cohesiveness can be interpreted as an interest in interaction with the members who can give motivation to the members of the group (Hermawan, Y., & Rstiana, 2019). Cohesiveness explains the individual interest to survive in the group. Students nomads in Malang are incorporated in an organized area as minorities and immigrants into the background of the students gathered with people from the same area.

Some studies mention the role of positive cohesiveness in a group. Mention that cohesiveness has a positive relationship with achievement motivation in an athletes sports team (football). This relationship indicates the positive group cohesiveness according to the athlete, the higher the

achievement motivation of its vice versa (Sakdiah, H., & Astuti, 2014). It means that the higher the cohesiveness of the group, the higher the achievement motivation in an athletes sports team. Group cohesiveness affects the increase in the morale of employees (Putriantini, 2012). Group cohesiveness also showed a positive relationship with organizational commitment, which means that the higher the cohesiveness, the higher the commitment of the organization [10].

Cohesiveness tends to be associated with the compactness of the group that cohesiveness gives a positive sense to the internal group. However, in his study of football, players mention that cohesiveness is strong in a team will bring up the in-group favouritism, which is a view that the team or group we are the best so that your opponent as outgroup is a threat to the group (Akbar, 2018). If in-group favouritism is valid and owned by the regional organization with the background of the culture of the region of origin of diversity, then it will show the degree of competition between local organizations as well as open spaces prejudice and assessment of an aggressive inter-regional organization. Each regional organization will assume that the organization of the region's best among the others and felt that the organization of the area from other regions is the rival of them. Such case can impede the course of the growth of poly-culturalism among local organizations, the understanding of poly-culturalism is identical to the low degree of prejudice between groups.

Research on poly-culturalism in Indonesia is still rarely done. The researchers found only a journal that explains the research on poly-culturalism with the population of a region in Indonesia. It was seen as less complete to represent Indonesia which consists of various tribes and ethnic groups spread across 33 provinces from Sabang to Merauke. Motivated by the lack of literature that describes the phenomenon of poly-culturalism in Indonesia, this is what the researchers are trying to find a new view related to poly-culturalism in Indonesia.

This research aims to determine the effect of group cohesiveness to poly-culturalism on the students in Malang. This research can also provide benefits as an additional reference for the scientific field of social psychology and culture.

## 2. METHOD

This study used a quantitative approach. This approach is a type of study that will collect numerical data (numbers), which is then processed using statistical techniques (Azwar, 2007). The results of the data collection were conducted by distributing a research instrument in the form of scale. The design used in this research is correlational. It is meant to determine the relationship between variables (Sugiyono, 2016).

This sampling technique using purposive sampling is a sampling technique by providing considerations or specific criteria. The subjects in this study were 200 people with the following criteria: (1) Students nomads in Malang who are members of a regional organization, (2) Aged 18-23 years. This age range with the reason that the age is an age productive of students, i.e. students in the first year to the fourth year lectures whose ages of 18-23 years are categorized into early adulthood as it is a period of an individual started to face events of the transition from

adolescence; it can be an attempt of the discovery of self-identity (Sanrock, 2012). The search for identity also involves the environment or association of individuals and organizations area can be one of them.

In this research, there are two variables, Independent variable (X) and dependent variable (Y). In this study, the independent variable (X) is the cohesiveness of the group, while the dependent variable (Y) is a poly-culturalism.

Poly culturalism is the belief that groups or different ethnic already interact and affect each other without removing the peculiarities of each, which has been held continuously to the present. The research instrument using a scale of poly culturalism adapted from Levy and Rosenthal (2012) and amounted to 5 items of the statement, all of which is items favourable (Rosenthal, L., & Levy, 2012). The indicators expressed in such a scale is about (a) group race (racial group), (b) ethnic (ethnic), and (c) the influence of inter-cultural groups (influence of culture intergroup). Subjects were asked to respond by selecting numbers 1 through 7. The choice of figure 1 represents the response of strongly disagree to the statement that given to figure 7 represents the response of strongly agree to the statement. After the reliability test through try out that has been done, the results obtained from the Alfa of 0,799 greater than 0.7. The correlation of the item total to be in the range of 0,409 until 0,680 that all items are declared valid because of its value exceeding 0.3.

Group cohesiveness which is intended in this study, is the interest of the individual to survive in the group by building familiarity and give each other support for the continuation of the group. The cohesiveness scale used in this study consisted of 32 items from the 40 items (Wahidah, 2013). The item uses four alternative answers in the form of multiple-choice, i.e. SS (strongly agree), S (agree), TS (disagree) and STS (strongly disagree). Scoring moves from 4 (SS) to 1(STS) for the category of favourable and a score that moves from 1(STS) to 4 (SS) to category unfavourable. The items in the scale group cohesiveness are compiled based on the aspects to measure the group's cohesiveness that was stated by Zanden (Wahidah, 2013). Based on the test, the validity of the 32 items is accepted because it has the power of discrimination item satisfactory is located at the top of 0.30 and move between 0,307 up with 0,692 scales is also said to be reliable as it has an alpha value of 0,863.

There are three main stages in this study. First, the researchers started with the deepening of the material through theoretical studies. Then the researchers conducted the preparation and development of the measuring instrument used are based on aspects of the research variables. Researchers try out against the research instrument to test the instrument's feasibility based on the validity and reliability. Try out is done to 50 students in Malang who joined a regional organization. Then the researchers conducted the data analysis by using Statistical Package for Social Science (SPSS) 21 to determine the validity and reliability of items on the instrument.

### 3. RESULTS AND DISCUSSION

The result of this research showed that there is a positive relationship between group cohesiveness with poly-culturalism on the student nomads in Malang. This research aims to prove whether there is a negative relationship between group cohesiveness with the formation of

poly-culturalism on the student nomads who are members in the organization areas in Malang. This study was conducted on 250 subjects where the 124 subjects were male and 126 of the subject were female. The results showed that there is a positive relationship between group cohesiveness and poly-culturalism on the student nomads in Malang.

Concluded that group cohesiveness will trigger the onset of competition, prejudice and unwillingness to do the interaction between groups that may hinder the emergence of poly-culturalism is not in line with the results of this study (Akbar, 2018). In-group favoritism on the groups mentioned in the previous research does not appear on the student nomads as a member of the regional organization in Malang, so as not to trigger prejudice, negative assessment of inter-regional organizations as well as not to cause unwillingness to interact with the organization of the other areas that can hinder the poly-culturalism among students in Malang.

There are some factors that affect the results of the research show that the cohesiveness of the group did not show a negative correlation with poly-culturalism but the presence of a positive correlation. The first factor that allows it to be the reason that the cohesiveness of the group on the organization of the area in Malang does not bring up the in-group favouritism, as a group of local organizations. It is not placed in a competitive situation, which is required for competing for the title as the winner in a competition like that occurs on the subject in several previous studies. This makes the little possibility for the emergence of a sense of competition among local organizations that can inhibit the sense of unity organization. The students of the nomads do not compete with a group of local organizations. However, members of the organization make a good relationship with all of the students from diverse regions.

Another factor that becomes the reason is the norms and values espoused by a group of local organizations in view of its relationship with another group. The values and norms of life lead to a positive relationship with the group organization in other areas, such as establishing a relationship and maintaining good relations with other groups and a positive view of the group organization in other areas. The value of life is agreed upon by members of the organization of the area to then be used as a reference in the act against another group. The similarity of attitudes and values among the members of the group is the strongest factor in the cohesiveness of the group (Ibrahim, Z., Rahman, N. R., & Johar, 2019). The members of the group will tend to conform and follow the norms in the group (Pratama, 2009). Then, it is possible that the cohesiveness of the group does not become an obstacle to the poly-culturalism but can support poly-culturalism if the group is applying the norms and values as a positive value in looking at the relationship with other groups. Then directed on the awareness of tolerance among the group organization of other areas and feel of unity as a fellow of the nation of Indonesia. Solidarity is formed which a priority of ideals and the common interest of the group above personal interests (Saidang, 2019). In this case, the identity of the group that has been agreed will be shared identity and self-identity member of the group cohesiveness.

The other factor that influences the poly-culturalism present among the students of nomads in Malang, because the group of local organizations have agreed that as a group

of local organizations not only have one identity that is as a student of the nomads, but must have a lot of categories of identity that is more inclusive. In the daily life of students between local organizations who have a different cultural background have interacted with each other, and even requires to cooperate in the life of the lectures, so the students with cultural backgrounds differences no longer label themselves only as part of a regional organization, but more than that has had the identity of others, namely as a student and has become a part of one of the universities in Malang. This view presents the understanding that the other student and I is the same and next to each other in daily life as a student. This understanding will be owned and applied together as members of a group that is cohesive to open a broad social accompanied by intense interaction with people from different cultures.

This study found that there is a difference between poly-culturalism and group cohesiveness on student nomads in Malang if viewed by the length of the join with the organization of the area. This is in line with the opinion of Robbins that one of the factors that determine the degree of viscosity of a group is the length of time to be together in a group because the longer it is in a group will make the members will be getting to know each other and can cause tolerance between members of the group (Bachroni, 2011).

In addition, it also found that there are different poly-culturalism based on the region of the area. The demographic data that were examined in this study found that there are several local organizations that have poly-culturalism low especially dominated by a group of local organizations that originated from the region of eastern Indonesia. This group voted exclusively to the outside environment due to several things, including some of the events of a clash that occurred between the students of the east with the community some time ago, thus giving birth to the prejudice among the people that make the community does not give a good reception to this group. Poor reception, as well as the lack of a space, to discuss in solving problems that had occurred, then the group became reluctant to open up to the outside community. This state is thought to also occur due to the impact as a group that is a minority. Picture and opinions that often arise in the discussion of the majority and the minority is that minority groups feel that their existence is threatened due to some discrimination from the majority group (Umihani, 2019). This allows the cause of the reluctance of the minority group to open in the which is the majority group.

This study has limitations because this research was in the form of correlational, so just find the results in the form of the relationship between variables and cannot examine in-depth the cause and effect between the two variables. Nevertheless, this study also has the advantage that it can be used as one of the references in the realm of psychology and culture because this research can be said as the research is relatively new. The findings of the study inform that the cohesiveness of the group does not preclude the individual from accepting differences, be open with each other and interact with each other as well as give attitude and a positive outlook towards other groups.

#### 4. CONCLUSION

The results of the study found that students nomads who have the cohesiveness to the group organization of the area

do not make the students reluctant to establish a relationship with the group organization to other areas, and the cohesiveness which exists in a group of local organizations able to direct members of the group to establish relationships with other groups and bring up poly-culturalism.

This study obtained the fact that the cohesiveness of the group that is owned by a group of local organizations student nomads in Malang does not become a threat to the emergence of poly-culturalism even have a positive influence in the present poly-culturalism. This makes poly-culturalism can be improved through increased group cohesiveness, but with a few things that need to be considered, namely, the values that are contained in the group need to be addressed first. Things that need to be considered further by the government as authorities are messages about unity in diversity.

In addition, the activities that brought the concept of cultural exchange that aims to get to know each other a wide variety of cultures and activities, the relationship between a group of local organizations increasingly propagated, so awareness of diversity is increasingly embedded in student nomads in Malang. The implications of this research, further research can be conducted a similar study using different methods in order to determine the state of a group of local organizations with a more in-depth such as using a qualitative research method so that it can reach the data load condition group organization areas in more detail. It is intended to find out the reasons why some of the area organizations still have low poly-culturalism in the diversity of the community.

#### REFERENCES

Akbar, A. (2018). Kohesivitas Tim dan Sikap Terhadap Kepemimpinan Wasit Sebagai Prediktor Kecenderungan Perilaku Agresif Pemain Sepakbola Profesional Indonesia. Tesis, 27-34.

Azwar, S. (2007). Metode Penelitian. Pustaka Pelajar.

Bachroni, M. (2011). Pelatihan Pembentukan Tim untuk Meningkatkan Kohesivitas Tim pada Kopertis V Yogyakarta. *Jurnal Psikologi*, 40-51.

Hanggardewa, A. A. (2018). Hubungan Kohesivitas Kelompok Dengan Komitmen Organisasii Pada Anggota Organisasi Mahasiswa Universitas Negeri Surabaya Periode 2017. *Jurnal Psikologi*, 2-4.

Hermawan, Y., & Rstiana, E. (2019). Peningkatan produktivitas melalui kohesivitas kelompok dan revitalisasi kondisi. *Jurnal Ilmu Administrasi*, 51-56.

Hong, Y.-y., Zhan, S., Morris, M. W., & Martinez, V. B. (2016). Multicultural Identity. Processes. *Science Direct*, 49-53.

Ibrahim, Z., Rahman, N. R., & Johar, M. M. (2019). To Understand the Team Cohesiveness Teamwork Quality and Team Performance in Employee Performance in University. *International Journal of Recent Technology and Engineering (IJRTE)*, 853-858.

Morris, M. W., Chiu, C.-y., & Liu, Z. (2015). Annual Review of Psychology. *Polycultural Psychology*, 66, 631-659. <https://doi.org/10.1146/annurev-psych-010814-015001>

Pratama, S. Y. (2009). Pengaruh Kelompok Pada Anggota Kelompok Bomber. *Skripsi*, 9-22.

Putriantini, F. G. (2012). Semangat kerja ditinjau dari kohesivitas kelompok kerja pada mitra pemasaran di KSB regional V Yogyakarta. *Jurnal Psikologi*, 23-26.

Rosenthal, L., & Levy, S. R. (2010). The colorblind, multicultural, and poly-cultural ideological approaches to improving intergroup attitudes and relations. *Social Issues and Policy Review*, 4(1), 215–246.

Rosenthal, L., & Levy, S. R. (2012). The relation between poly-culturalism and intergroup attitudes among racially and ethnically diverse adults. *Cultural Diversity and Ethnic Minority Psychology*, 1–16.

Rosenthal, L., Levy, S. R., Katser, M., & Bazile, C. (2015). Polyculturalism and attitudes toward muslim Americans. *Journal of Peace Psychology*, 535–545.

Saidang, S. (2019). Pola Pembentukan Solidaritas Sosial dalam Kelompok Sosial antara pelajar. *Jurnal Pendidikan*, 122–126.

Sakdiah, H., & Astuti, T. P. (2014). Hubungan antara kohesivitas kelompok dengan motivasi berprestasi pada atlet cabang olahraga beregu. *Jurnal Psikologi*, 12.

Santrock, J. W. (2012). LIFE-SPAN DEVELOPMENT. Erlangga.

Sugiyono. (2016). *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*. Alfabeta.

Tjipto, S., & Bernardo, A. B. I. (2019). Constraints In The Meaning of Lay Theories of Culture in a Culturally Homogeneous Society: A Mixed-Methods Stdy on Multiculturalism and Poly-culturalism in Wonosobo, Indonesia. *Research Article Social Psychology*, 1–23.

Umihani. (2019). Problematika Mayoritas dan Minoritas Dalam Interaksi Sosial Antar Umat Beragama. *Skripsi*, 248–268.

Wahidah, N. (2013). Hubungan antara Kohesivitas Kelompok Teman Sebaya dengan Perilaku Agresif pada Mahasiswa Fakultas Teknik Universitas Muslim Indonesia Makassar. *Skripsi*, 17–22.

## Brain-based learning model to explore students' procedural fluency ability in learning quadrilateral 2D shapes

Ahmad<sup>1\*</sup>

<sup>1</sup>University of Muhammadiyah Purwokerto

\*Corresponding author: [ahmad@ump.ac.id](mailto:ahmad@ump.ac.id)

### KEYWORDS

Aspects of procedural fluency  
brain-based learning model  
procedural fluency

**ABSTRACT** This study aims to determine the completion of student learning in procedural fluency through the Brain-Based Learning model, along with their procedural fluency in flexibility, efficiency and accuracy in quadrilateral 2D shapes. It employed a sequential explanatory research design. The research subjects were 7th graders (VII B) at SMP Negeri 2 Sokaraja, the academic year 2019/2020. The data collection technique was a procedural fluency test for students on quadrilateral 2D shapes, and the data analysis technique was the z-test. Results showed that students' procedural fluency through BBL achieved learning mastery. In terms of flexibility, students were able to solve procedural fluency test questions in two ways. Students could perform each step of the method in terms of efficiency, and in terms of accuracy, it was shown that results were repeated consistently. These findings implied that procedural fluency through BBL, along with students' flexibility, efficiency, and accuracy, belong to the fairly fluent category.

© The Author(s) 2021

## 1. INTRODUCTION

Mathematics is a basic science indispensable for the development of other sciences. It is used in everyday life to deal with various problems, ranging from simple to complex problems. Rosmaiayadi (2017) specifically states that Mathematics is a scientific discipline with distinctive characteristics relating to abstract ideas or concepts arranged hierarchically.

Mathematics learning includes efforts to facilitate, encourage, and support students. Bahr (2007) denotes seven ability criteria, which must be mastered by students during the Mathematics learning process, namely: a) problem solving, b) communicating, c) reasoning, d) modelling, e) connecting, f) conceptualizing, and g) procedural.

Among those criteria, procedural fluency is one of the critical abilities. Kilpatrick, Swafford, and Findell (2001) reveal that procedural fluency has an important influence on students' mathematical abilities in schools. Without sufficient procedural fluency, students likely face difficulty in deepening their understanding or solving mathematical problems. The National Council of Teachers Mathematical (2014) states that procedural fluency ideally comes after students' first mastering conceptual understanding, strategic reasoning, and problem-solving.

## 2. METHOD

This study employed pre-experimental research design. It applied treatment to research subjects without a control group, in which the research process focuses on the im-

pact of changes following the treatment of the observed research subjects. The independent variable is the Brain Based Learning (BBL) model, and the dependent variable is students' procedural fluency.

The data collection technique involved procedural fluency test in the form of a description. In so doing, all related Mathematics learning materials were delivered. The instrument used in this study was a procedural fluency test in the form of a description. The procedural fluency test is scored based on the indicators. The test scoring guidelines are presented as table 2.

The analysis process was performed by testing the proportion difference test on a single sample using the z-test. According to Sundayana (2016), "the z-test can be used to test hypotheses in a one-treatment study that uses a percentage". Data analysis for students' procedural fluency through BBL model, namely data reduction, includes correcting the results of student work, and categorizing procedural fluency into four categories (fluent, fair, poor, and not fluent).

## 3. RESULTS AND DISCUSSION

Results of the procedural fluency using BBL model showed that the highest score was 16 and the lowest score was 10. The maximum score was 16, which means that out of 31 students, some were able to obtain the maximum learning completeness criteria. Students' scores were hence converted to a scale of 100 to observe the completeness of their learning. Criteria of students' learning completeness

**TABLE 1.** Scoring Rubrics for the Test of Students' Procedural Fluency

Aspects/ Indicators	Student response	Score
Applying procedures accurately, efficiently, and flexibly	There is no answer, or the answer does not match the question, or there is no correct answer	0
	The procedures used are mostly incorrect, and there are incorrect calculations	1
	Most of the procedures used are correct, but there are erroneous calculations	2
	The procedure used is almost complete, but there are a few errors	3
	The procedures used and the calculations are complete and correct	4
Applying procedures to different problems and contexts	There is no answer, or the answer does not match the question, or there is no correct answer	0
	The procedures used are mostly incorrect, and there are incorrect calculations	1
	Most of the procedures used are correct, but there are erroneous calculations	2
	The procedure used is almost complete, but there are a few errors	3
	The procedures used and the calculations are complete and correct	4

**TABLE 2.** Scoring Rubrics for the Test of Students' Procedural Fluency

Aspects/Indicators	Student response	Score
Build or modify procedures from other procedures	There is no answer, or the answer does not match the question, or there is no correct answer	0
	The procedures used are mostly incorrect, and there are incorrect calculations	1
	Most of the procedures used are correct, but there are erroneous calculations	2
	The procedure used is almost complete, but there are a few errors	3
	The procedures used and the calculations are complete and correct	4
Knowing which procedure is more appropriate to use in solving a problem.	There is no answer, or the answer does not match the question, or there is no correct answer	0
	The procedures used are mostly incorrect, and there are incorrect calculations	1
	Most of the procedures used are correct, but there are erroneous calculations	2
	The procedure used is almost complete, but there are a few errors	3
	The procedures used and the calculations are complete and correct	4

should be >70% following the Minimum Completeness Criteria. In this study, it is equivalent to 11.2.

It can be seen from the table that the highest score was 100 by S-13 and S-22, while the lowest score was 62.5 (< KKM of 70%) by S-23. Thus, 28 students achieved above KKM, and only 3 students achieved below KKM. The average score of all students was 81.85. It can be said that students' overall score was above the KKM value of 70%. The frequency of students' procedural fluency test scores less than KKM are 3 persons (9.68%), and more than KKM are 28 persons (90.32%) (Table 2 and Table 3)

It can be seen from the table that the frequency of 28 students, who scored above KKM, was 90.32%. Meanwhile, the students scored below KKM were 3 students, as equivalent to 9.68%. Analysis of student achievement on each indicator is presented in the following Table 3.

Table 3 shows that the results of the first indicator test were 3.42, which was on average with the indicator achievement of 85.5%. Results of the second indicator test averaged 3.1 with the achievement of the indicator 77.5%. Furthermore, results of the third indicator averaged 3.52 with an indicator achievement of 88%. Last, results of the fourth indicator averaged 3.06 with the achievement of the indicator 76.5%.

Students' procedural fluency using the BBL method was categorized to observe their achievement in learning quadrilateral 2D shapes. The categorization is presented at Figure 1.

**TABLE 3.** Analysis of the Achievement of Each Indicator of Students' Procedural Fluency Test Results Using the BBL Model

Indicator	Test	
	$\bar{X}$	%
Applying procedures accurately, efficiently and flexibly.	3.42	85.50
Applying procedures to different problems and contexts.	3.10	77.50
Building or modifying procedures from other procedures.	3.52	88.00
Understanding which procedure is more appropriate to use in solving a problem.	3.06	76.50

The figure above shows that that 19.36% of students included in "very good"; 41.94% of students included in "good"; 29.03% of students included in "fair"; and 9.67% of student included in "poor".

Assessment of student skills is carried out by looking at their ability in solving questions in the LKPD and individual assignments. The indicators measured in this study were in accordance with procedural fluency indicators, consisting of four categories.

Results of the calculation showed that  $Z_{\text{count}}=2,5 > Z_{\text{table}}=1,65$ . ( $H_1$  was accepted). This finding implies that students' procedural fluency through BBL model achieved

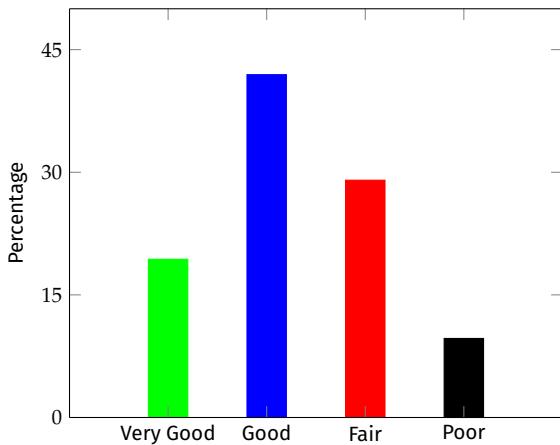


FIGURE 1. Categorization of procedural fluency test results using brain based learning (BBL) Model.

complete learning. The following graph categorizes procedural fluency into four, namely, fluent, fair, poor, not fluent.

The general results of this present study show that students' procedural fluency learning quadrilateral 2D shapes included in the "fair" category, which students mostly fulfilled two aspects of each question. Furthermore, not all students were able to solve procedural fluency test questions with flexibility, efficiency, and accuracy as classified in the fluent category. It can be said that only a few students were fluent and procedurally fluent in each question. There were students worked fluently on Question 2 on the indicators of applying procedures in different contexts and problems. However, there were students who could not work fluently in their procedural fluency, on Question 1, 3 and 4. This finding implied students' less skill in developing procedures for the problems of these questions.

The learning model used in this study was a group discussion method adapted to the BBL model, which demands group learning activities (Jensen, 2011). In group discussion, students are required to participate actively during learning. Students' active participation can be in the form of group discussions with other students, or actively asking questions related to the learning materials, and communicating the results of the discussions. These made it easier for students to understand the learning material, as stated by Nurmala, Kade and Kamaluddin (2013) that "students are more active because they have a pivotal role in the teaching and learning process; it is expected that students will find it easier to understand the concepts". Therefore, learning where students are the center is better for the development of students' abilities, including their procedural fluency.

At the beginning of learning using the BBL model, students faced difficulties when working on the learning materials because they were not used to work in groups. Another obstacle was students' difficulties when working on LKPD about procedural fluency questions. This was because students were neither used to work on questions in the form of applying procedures in different contexts and problems; nor solving procedural problems flexibly, accurately, and efficiently. This newly introduced BBL model might confuse students, which made them ask the teachers and friends continuously, causing noise and disturbing focus.

However, the implementation of BBL model potentially explored students' procedural fluency. One of the causes were that learning through BBL model employs teaching materials that are closely related to daily problems, which attract students' interest. Jensen (2011) states that BBL model encompasses learning topics related to the contextual and real-world basis. The learning materials are easier to understand, and the learning objectives are more achievable.

Another aspect of procedural fluency is efficiency. Students' responses in this study showed that they were mostly able to solve procedural fluency test questions using the correct, and able to streamline every step of the method. It means that students did not stop at the steps of the method, instead attempted to complete procedural fluency test questions until obtaining the final result. This finding supports Bahr and Garcia (2010), who states that students who met the efficiency aspect would not likely stop at many steps, and did not lose direction in logical strategies. Among the problems were the completion step that is too long, despite that the solution can be shortened to be more efficient in calculations. Consequently, students became too focused on the concepts in solving procedural fluency test questions, leading to complicated calculation process that resulting on wrong final answers.

#### 4. CONCLUSION

Students' procedural fluency through BBL model achieved complete learning. In terms of flexibility, students were able to solve procedural fluency test questions in two ways: the way they understand or have learned, and using other ways to make sure that their answer is correct. In the aspect of efficiency, students were able to solve procedural fluency test questions using the correct concept, in which they were able to streamline every step of the method. Last, the accuracy was shown through students' ability to carry out the calculation process carefully. The results obtained from solving the procedural fluency were correct, and the students rechecked the calculations to ensure their final answer. In conclusion, students' procedural fluency through the BBL model was fairly fluent in terms of flexibility, efficiency and accuracy.

#### REFERENCES

Aprianti, R., Sugiatno, & Nursangaji, A. (2014). Kelancaran prosedur matematis siswa dalam materi operasi hitung pada pecahan di SMP. *Jurnal Pendidikan dan Pembelajaran*, 3(4).

Arikunto, S. (2013). Prosedur penelitian suatu pendekatan praktik. Rineka Cipta.

Bahr, D. L. (2007). Creating mathematics performance assessments that address multiple student levels. *The Australian Association Mathematics Teachers (AAMT)*, 63(1), 33-40. Retrieved from: <https://scholarsarchive.byu.edu/facpub/1348/>

Bahr, D.L., & Garcia, L. A. D. (2010). *Elementary mathematics is anything but elementary: Content and methods from developmental perspective*. Wadsworth Cengage Learning.

Dahar, R.W. (2011). *Teori-teori belajar dan pembelajaran*. Erlangga.

Jensen, E. (2008). *Brain-based learning*. Pustaka Pelajar.

Jensen, E. (2011). *Pemelajaran berbasis-otak*. Indeks.

Kilpatrick, J., Swafford, J., & Findell, B. (2001). *Adding it up: Helping children learn mathematics*. National Academy Press.

National Council Teachers of Mathematics. (2014, July). Procedural fluency in mathematics. Retrieved from: <http://www.nctm.org/Standards-and-Positions/Position-Statements/> Procedural-Fluency-in-Mathematics/

Nurmala, R., Kade, A. & Kamaluddin (2013). Pengaruh model learning cycle tipe 7e terhadap pemahaman konsep fisika siswa kelas VII SMP Negeri 19 Palu. *Jurnal Pendidikan Fisika Tadulako (JPFT)*, 1(2), 18-23.

Permendikbud. (2016). Permendikbud RI nomor 22 tahun 2016 tentang standar proses pendidikan dasar dan menengah. Permendikbud.

Permendikbud. (2016). Permendikbud RI nomor 23 tahun 2016 tentang standar penilaian pendidikan. Permendikbud.

Permendiknas. (2006). Permendiknas RI nomor 22 tahun 2006 tentang standar isi untuk pendidikan dasar dan pendidikan menengah. Permendiknas.

Rosmaiyadi, R. (2017). Analisis kemampuan berpikir kritis matematis siswa dalam learning cycle 7E berdasarkan gaya belajar. *AKSIOMA: Jurnal Program Studi Pendidikan Matematika*, 6(1), 12-19.

Sudjana. (2013). Metoda statistika. Tarsito.

Suganda, A.T. (2012). Pembelajaran matematika dengan pendekatan brain based learning untuk meningkatkan kemampuan prosedural dan pemahaman konsep matematis siswa kelas X Madrasah Aliyah (Master Thesis). Program Studi Pendidikan Matematika, Universitas Pendidikan Indonesia, Bandung, Indonesia.

Sugiyono. (2017). Metode penelitian kombinasi (mixed method). Alfabeta.

Sullivan, P. (2011). *Teaching mathematics: Using research-informed strategies*. Australia: Australian Council for Educational Research. Retrieved from <https://research.acer.edu.au/aer/13/>

Sundayana, R. (2016). *Statistika penelitian pendidikan*. Alfabeta.