

Determinants of Active, Creative, Effective and Joyful Learning Behold by Teachers

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Abstract

Factors affecting active, creative, effective and joyful learning were examined in this research. The inquest was viewed from school curriculum, school governance and teacher perspectives in preparing students with respect to the calls of the 21st century skills. It was aimed at reviewing and describing factors and the most potential factor of them in relations to shaping effective teaching and learning process in the classroom behold especially by Indonesian teachers. The research was conducted under quantitative approach by applying path analysis. Survey was done to gather information from 120 eligible respondents using simple random sampling techniques. Five hypotheses were developed to ascertain statistically what would be factors and the most influencing factor to effective teaching and learning process in the classroom. Four sets of instruments in the form of questionnaires were developed and processed to inferentially make the conclusion. It was ultimately found that four of the hypotheses were validated significantly by the analysis. The most influencing factor in generating effective teaching and learning process was the school curriculum.

Keywords: Effective learning, school curriculum, school governance, teacher competencies, path analysis.

Introduction

Predicting 21st century skills calls for the 21st century teaching approach (Saveedra & Opfer, 2012). In order to thrive in a digital economy era, students will need digital age proficiencies. It is therefore eminent for educational system to make parallel differences in order to comply with its mission in society, mainly in preparing students by teachers for the world beyond the classroom (Metiri Group, 2011). This implies that the educational system must recognize and incorporate the 21st century skills within the context of rigorous academic benchmarking in terms of acquiring intellectual capital of the citizens as the driving force of the 21st century. What are then the 21st century skills look alike? The Partnership for 21st Century Skills (2013) lists three main types, they are learning skills, literacy skills and life skills.

The 21st century dawned as the instigation of the digital age, a time of unprecedented growth in technology and its subsequent information explosion (Beers, 2012). Never before have the tools for information access and management made such an impact on the way of how we live, work and interact. In consequence, exemplary science education might put forward a rich context to develop some of the 21st century skills, such as critical thinking, problem solving, and information literacy aspects. In a more identifiable stance, The Assessment and Teaching of 21st Century Skills (AT21CS, 2014) simplified the 21st century skills into four broad categories, they are: (1) Ways of thinking, consisting of creativity, critical thinking, problem solving, decision making and learning, (2) Ways of working, consisting of communication and collaboration, (3) Tools for working, consisting of information and communication technology and information literacy, and (4) Skills for living in the world, consisting of citizenship, life and career and personal-social responsibility.

Having considered the 21st century skills elaborated above, we come to the question of how or what would be the situation in the classroom led by teachers so that we are indisputably on the right track to get ready students for their future satisfactorily? In a more specific turn of phrase, what would be the factors influencing effective learning behold by Indonesian teachers in this framework.

Literature Review and Research Model

Several factors evidently contribute to student learning and one significant factor that impacting learning is the relationship between teacher and student in the classroom (Gill, 2010). Think back to when we were in school, asked Meador (2010): Who was your favorite teacher and who was the teacher you dreaded having? We have all had great teacher and surprisingly most of us have had teachers that were not effective too. So, what quality does as an effective teacher have that an ineffective teacher do not? It takes a perfect blend of several qualities to create a truly effective teacher who can have a listing impact on each student.

Kindsvater, et al (1988) addresses seven assumptions and beliefs prime to effective teaching and four of them are relevant to this inquest, they are: (1) teaching is a complex behavior, (2) teaching is a learned behavior, (3) student must be motivated and (4) teaching in the final analysis is personal invention. Correspondingly, Gurney (2007) believes that teacher knowledge and responsibility for learning, classroom activities that encourage learning, assessment activities that encourage learning through experience, effective feedback that establishes the learning process in the classroom and effective interaction between the teacher and the students as well as stimulate learning through experience are five fundamental factors for effective learning.

Learning is considered as the acquisition of knowledge, habits, skills, abilities and attitudes through interaction of the whole individual and his/her total environment. Learning is meaningful if it is organized in such a way as to emphasize and call for understanding, insight, initiative and cooperation. Learning is assisted by motives, regulation, readiness, and laws (the laws of exercise, effect and belongingness). Learning is made possible when teacher provides learner with proper stimuli and guides. Besides, learning difficulties is due to many factors within learners itself. Learning is effective when more senses are utilized by the students and made functional and aided by understanding derived from experience (Mondal, 2014).

Furthermore, Meador (2010) examines ten qualities that virtually every effective teacher will possess. An effective teacher loves to teach, demonstrates a caring attitude and can relate to students. An effective teacher is willing to think out of the box, an excellent communicator, proactive rather than reactive, and striving to be better. An effective teacher also uses a variety of media in their lessons and challenges their students. More importantly, an effective teacher comprehends the content that they teach and knows how to explain that content in a manner that their students easily embrace it.

At this stage, it can generally be formulated that learning outcome through teaching and learning process depending on learning course of action conducted by teacher in the classroom. Learning process itself is determined by learning approach utilized by teacher. Learning approach should at least be related to teacher and student characteristics as well as the learning environment in their circumstances. In a more precise gist, this inquest come to the general view that there are several factors determine active, creative, effective and joyful learning (ACEJL). To certain extent, it can at glimpse be identified some of them, including stakeholders, regulation, facilities, parents, students, curriculum, teachers, funding and employers perspectives. Purposely for Indonesian context, we come to the proposition that the ACEJL was determined by school curriculum, school governance and teacher competencies. Diagrammatically, the model of this research can then be better understood by looking at the following figure.

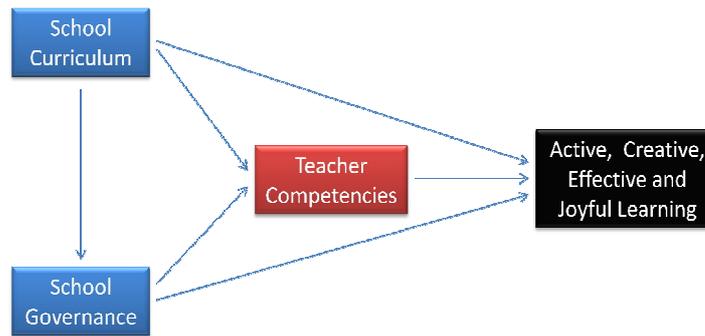


Figure 1: Basic Model of the Research

Context, Hypotheses and the Methodology

As one of the efforts to ensure teaching and learning process in the classroom runs as it was planned, “Pembelajaran Aktif, Kreatif, Efektif, dan Menyenangkan” or “PAKEM” was introduced in Indonesia context (PAKEM has the same meaning as ACEJL). The objective of this approach is to equip teachers so that they are able to prepare students entering the digital age, referred to as the so-called The 21st Century Era, through effective teaching and learning processes in the classroom (Sembiring, 2009). ACEJL, as the dependent variable in this inquest, is generally measured by observing on the four dimensions, such as how active, creative, effective and joyful the situation in the classroom move forward. These dimensions are specifically measured by observing to the indicators consisting of student initiative and teacher facilitation, various source and initiatives, student performance and achievement as well as student enthusiasm and classroom environment.

School curriculum, as the first independent variable, is broadly measured by observing on the five dimensions, such as how the content, learning outcome, supports, implementation and evaluation administer by teacher on the regular bases. These dimensions are specifically measured by observing to the indicators consisting of the core and supplement materials, general and specific objectives, standardized book and guidance, socialization and training as well as implementation and the results. School governance, as the second independent variable, is largely measured by observing on the five dimensions, such as how the organization, guidance, facilities, finance and human resource are available and adequate to support the learning. These dimensions are exclusively measured by observing to the indicators consisting of structure and personnel qualification, teachers and school personnel, buildings and equipments, funding for operational and innovation as well as career advancement and further education of human resources.

Teacher competencies, as a moderating variable, is in general measured by observing on the five dimensions, such as how critical the level of pedagogic, personality, social, professionalism competencies and academic qualification of those teachers. These dimensions are purposely measured by observing to the indicators consisting of how far teacher understand about student profiling and educational theory, value appreciation and profession dignity, capability and creativity as well as academic and profession qualification.

Having described the context in the view of variables involved elaborated previously, five hypotheses are constructed and then later analyzed by using a quantitative approach with the help of a path analysis method. The five hypotheses are:

1. H₁: ACEJL is influenced by school curriculum
2. H₂: ACEJL is influenced by school governance
3. H₃: ACEJL is influenced by teacher competencies
4. H₄: Teacher competency is influenced by school curriculum
5. H₅: Teacher competency is influenced by school governance

The summary of all variables involved and their dimensions, indicators and numbers of statements of the research can be better appreciated by noticing the following table.

No	Variables	Dimensions	Indicators	Number of Statements
1	Active, creative, effective and joyful learning (ACEJL) (Y)	1. Active 2. Creative 3. Effective 4. Joyful	1. Student initiative 2. Teacher facilitation 3. Various sources 4. Various initiatives 5. Student performance 6. Optimal achievement 7. Student enthusiasm 8. Classroom environment	Each indicator has 2 statements, 16 in total for Y
2	School Curicullum (X ₁)	5. Content 6. Learning outcome 7. Supports 8. Implementation 9. Evaluation	9. Core 10. Supplementary 11. General 12. Specific 13. Teacher's guide 14. Standardized book 15. Socialization 16. Training 17. Implementation 18. Results	Each indicator has 2 statements, 20 in total for X ₁
3	School Governance (X ₂)	10. Organization 11. Guidance 12. Facilities 13. Finance 14. Human resources	19. Structure 20. Personel qualification 21. Teachers 22. Scholl personnels 23. Building 24. Equipments 25. Operational 26. Innovative 27. Career advancement 28. Further study	Each indicator has 2 statements, 20 in total for X ₂
4	Teacher Competencies (X ₃)	15. Paedagogic 16. Personality 17. Social 18. Professionalism 19. Qualification	29. Student profiling 30. Eductaional theory 31. Value appreciation 32. Profession pride 33. Inclusive 34. Adaptive 35. Capabilities 36. Creativity 37. Academic 38. Profession	Each indicator has 2 statements, 20 in total for X ₃
<i>Notes: 4 variables, 19 dimensions, 38 indicators, 76 statements altogether in total</i>				

Table 1: The Summary of Variables, Dimensions and Indicators Involved

The research was conducted at Universitas Terbuka milieu, the Indonesia Open University. The population are those Indonesian teachers who were studying to complete their academic degree and graduated from the Faculty of Education and Teacher Training in 2013. The respondents of this study, as the sample of the population, are those teachers who were attending graduation ceremony in the

first semester of 2014. The number of graduates attended the ceremony around 1,100 alumni. Moreover, this research utilized a quantitative approach from surveys that collected data from students (Singarimbun & Effendi, 1989). Instruments in the form of questionnaires were then developed incorporating the four variables involved. Each of the variable was subdivided into dimensions; in this study there are 19 them. Firdaus and Affendi (2008) suggested that the minimum number of respondents under a Path Analysis approach ranges from 5 to 15 with respect to each dimension involved. This implies that the number of respondents based on this rule of thumb should be 95–285 respondents. For this study, the minimum number of respondents is 100 teachers.

As previously mentioned, there were four sets of questionnaires developed for this research as summarized in Table 1. The questionnaires were developed and inspired by Tjiptono & Fandi (2011). In order to be considered valid, all statements should be responded to and/or answered properly by all respondents. Finally, Path Analysis was used to statistically draw the conclusions and illustrate the results descriptively as well as inferentially (Firdaus & Affendi, 2008).

Findings and Discussions

As it has been anticipated, the model used was particularly relevant to teachers who graduated from Universitas Terbuka as the focus of the research. Nevertheless, before discussing the results, it is useful to portray the characteristics of the teachers selected as the respondents. This will provide us better context for the findings.

No	Description	Notes
1	Teachers' domicile in Indonesia	Eastern part = 22%; Middle = 27%; Western part = 51%
2	Population Samples	1,100 teachers 120 teachers
3	Questionnaires - Provided and distributed - Returned and processed	350 sets 120sets (Early Childhood Teacher = 34%; Primary School Teachers = 62%, and High School Teachers = 4%)
4	Study at UT for (Y: Year)	≤ 4Y = 1%; 5Y = 30%; 6Y = 49%; 7Y = 14%; 8Y/more = 6%
5	Grade Point Average (GPA)	2.00 – 2.49 = 16%; 2.50 – 2.99 = 52%; 3.00 – 3.49 = 23%; 3.50 – 4.00 = 9%
6	Gender	Female = 73%; Male = 27%
7	Teaching Experiences (Y: Year)	1-4 Y = 11%, 5-9 Y = 23%, 10-14 Y = 48%, 15Y/More = 18%
8	Age (Y: Year)	< 25Y = 2%; 26-30Y = 21%; 31-35% = 28%; 36-40Y = 27% 41-45Y = 11%; 46-50Y = 9%; 51Y/More = 2%

Table 2: Respondents' Characteristics, Population, Samples & Questionnaires

Operationally, the research includes four variables, they are: (1) ACEJL (Y), (2), School curriculum (X₁), (3) School governance (X₂), and (4) Teacher competencies (X₃). Y is the dependent variable. X₁ and X₂ are independent variables. X₃ is a moderating variable. The summary of statistical descriptive of variables involved can be better explained as seen in the following Table.

	N	Range	Minimum	Maximum	Sum	Mean		Std. Dev	Variance
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std Error	Statistic	Statistic
X1	120	40.00	60.00	100.00	9736.00	81.1333	.89191	9.77042	95.461
X2	120	40.00	60.00	100.00	9439.00	78.6583	.84941	9.30482	86.580
X3	120	32.00	60.00	92.00	9335.00	77.7917	.64624	7.07926	50.116
Y	120	33.00	65.00	98.00	9553.00	79.6083	.54468	5.96671	35.602
Valid N	120								

Table 3: The Summary of Descriptive Statistic

Before testing all the hypotheses, analytical requirement should be conducted in the first place. Having completed all requirements, Path Analysis can then be progressed. Normality and linearity tests should be performed in the beginning and they are all validated by the tests in fact.

The first step after having the normality tests is to show correlation coefficient of variables; and they are shown in Table 4.

Correlation	X1	X2	X3	Y
X1	1.0000	0.763**	0.190*	0.246**
X2		1.0000	0.190*	0.234**
X3			1.0000	0.312**
Y				1.000

Table 4: The Correlation Matrix Coefficient

Based on the result shown in Table 4 above, it then can be made a constellation amongst variables involved including the coefficient attached to it as can be seen in Figure 2.

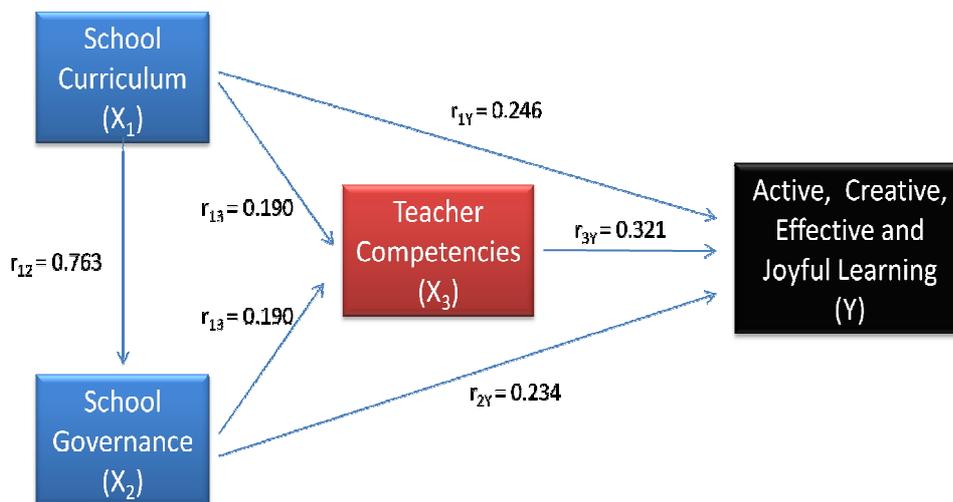


Figure 2: The Portrait of the Coefficient

Next is path coefficient calculation and it is done with the help of structural equation modeling (SEM), using Lisrel version 8.80. Here, we come to the result as follows: $\beta_{31} = 0.10$; $\beta_{32} = 0.17$; $\beta_{Y1} = 0.88$; $\beta_{Y2} = 0.87$; and $\beta_{Y3} = 0.22$. The summary of this calculation can be better understood by putting them into Table 5.

No	Variable	Path Coefficient (β)		t_{table}	t_{table}
		SLF*	$t_{calculation}$	$\alpha = 0,05$	$\alpha = 0,01$
1	Y on X_1	0.88	5.48	1.980	2.617
2	Y on X_2	0.87	5.47	1.980	2.617
3	Y on X_3	0.22	2.24	1.980	2.617
4	X_3 on X_1	0.10	1.41	1.980	2.617
5	X_3 on X_2	0.17	2.37	1.980	2.617

*= Standardized Loading Factor

Table 5: The Summary of Path Coefficient

To make clearer relations amongst variables involved in the study, it will be shown in Figure 3 how each of the variable interact each other. The figure below explains sub-structure of the model to show how those variables (X_1 , X_2 , X_3 , and Y) interacts. Complete result of Sub-structure 1 analysis can be explained by showing that $Y = \beta_{Y1} X_1 + \beta_{Y2} X_2 + \beta_{Y3} + \varepsilon_1$.

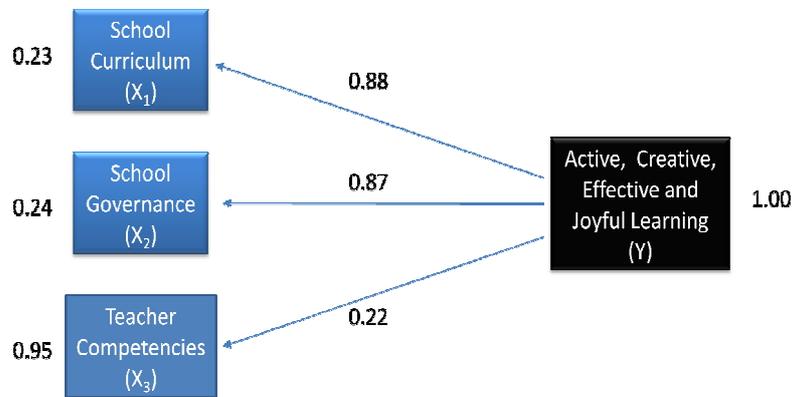


Figure 3: The Model of Sub-structure 1

Analysis on Sub-structure 1 elaborated above will give us background to draw conclusions based on hypotheses 1, 2 and 3.

Next, it needs to do an analysis on the model of Sub-structure 2 that will be easily explained through Figure 4, they are relations amongst X_1 and X_2 on X_3 . Analysis on this model is expressed as follows, $X_3 = \beta_{31} X_1 + \beta_{32} X_2 + \varepsilon_2$. Analysis on the Sub-structure 2 will be the rationale to conclude the results for hypotheses 4 and 5.

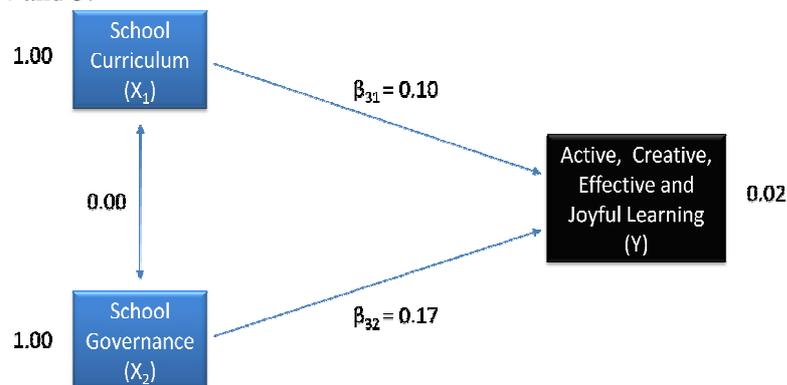


Figure 4: The Model of Sub-structure 2

Hypothesis Testing 1

Hypothesis 1 stated that ACEJL (Y) is directly influenced by school curriculum (X_1). It means that $H_0 : \beta_{y1} \leq 0$ or $H_1 : \beta_{y1} > 0$. Calculation of path coefficient for this causal model comes to $\beta_{y1} = 0.88$

where $t_{\text{calculated}} = 5.48$ and $t_{\text{table}} = 1.980$ at $\alpha = 0.05$. As $t_{\text{calculated}} > t_{\text{table}}$, then H_0 is substantiated. It implies that ACEJL is directly influenced by school curriculum significantly.

Hypothesis Testing 2

Hypothesis 2 stated that ACEJL (Y) is directly influenced by school governance (X_2). This means that $H_0 : \beta_{y2} \leq 0$ or $H_1 : \beta_{y2} > 0$. The calculation shows that path coefficient for $\beta_{y2} = 0.87$ where $t_{\text{calculated}} = 5.47$ and $t_{\text{table}} = 1.980$ at $\alpha = 0.05$. As $t_{\text{calculated}} > t_{\text{table}}$, then H_0 is also substantiated. This implies ACEJL is directly influenced by school governance significantly.

Hypothesis Testing 3

Hypothesis 3 stated that ACEJL (Y) is directly influenced by teacher competencies (X_3). This means that $H_0 : \beta_{y3} \leq 0$ or $H_1 : \beta_{y3} > 0$. The result shows that path coefficient $\beta_{y3} = 0.22$ where $t_{\text{calculated}} = 2.24$ and $t_{\text{table}} = 1.980$ at $\alpha = 0.05$. As $t_{\text{calculated}} > t_{\text{table}}$, then H_0 is rejected. This means that ACEJL is directly influenced by teacher competencies significantly.

Hypothesis Testing 4

Hypothesis 4 stated that teacher competencies (X_3) is directly influenced by school curriculum (X_1). This implies that $H_0 : \beta_{31} \leq 0$ or $H_1 : \beta_{31} > 0$. The result shows that path coefficient $\beta_{31} = 0.10$ where $t_{\text{calculated}} = 1.41$ and $t_{\text{table}} = 1.980$ at $\alpha = 0.05$. As $t_{\text{calculated}} < t_{\text{table}}$, then H_0 is accepted. This means that teacher competencies is directly influenced by school curriculum but it is *not* significant.

Hypothesis Testing 5

Hypothesis 5 stated that teacher competencies (X_3) is directly influenced by school governance (X_2). This implies that $H_0 : \beta_{32} \leq 0$ or $H_1 : \beta_{32} > 0$. The result shows that path coefficient $\beta_{32} = 0.17$ where $t_{\text{calculated}} = 2.37$ and $t_{\text{table}} = 1.980$ at $\alpha = 0.05$. As $t_{\text{calculated}} > t_{\text{table}}$ then H_0 is rejected. This means that teacher competencies is directly influenced by school governance significantly.

Based on the direct influence as can be seen in Figure 3 and Figure 4, then findings of this inquest can be objectively described in five vital points, as follows:

- (1) ACEJL measured by school curriculum has direct and positive influence on the level of school curriculum. This implies that ACEJL can be positively explained by school curriculum aspect according to the teachers.
- (2) ACEJL measured by school governance has direct and positive influence on the level of school governance. This implies that ACEJL can be positively explained by school governance viewed by teachers in this inquest.
- (3) ACEJL measured by teacher competencies has direct and positive influence on the level of teacher competencies. This implies that ACEJL can be positively explained by teacher competencies viewed by those teachers in this query.
- (4) Teacher competencies measured by school curriculum has direct but *not* significantly influence on the level of school curriculum. This implies that teacher competencies can *not* be positively explained yet by school curriculum behold by those teachers in this investigation.
- (5) Teacher competencies measured by school governance has direct and positive influence on tutorial participation. This implies that teacher competencies can be explained by school governance on the view of teachers in this research.

Remarks and Suggestions

This study generates a quantitative approach to scrutinize ACEJL derived from a comprehensive review of some educational perspectives and its relations to school curriculum, school governance and teacher competencies. The model was confirmed by using a path analysis approach that examined the empirical data from a survey of 120 teachers who are completing their degree at Universitas Terbuka. The findings statistically show that the two independent variables and the intervening variable variables are in fact the main determinants of ACEJL, they are school curriculum, school governance and teacher competencies. Besides, school curriculum is the most influencing factor to the existence of the ACEJL. These results indicate that the impact of the fulfillment of good curriculum, well-

established school governance and highly qualified teachers respectively are certainly the foremost ingredients of creating classroom interactions in response to the calls of the 21st century skills.

Consequently, additional research is necessary, including follow-up investigation to other relevant factors considered to be potentially in a row with respect to get going the ACEJL. The scope should also be broadened beyond teachers who graduated from the Faculty of Education and Teacher Training of Universitas Terbuka alone. These results would later present a more inclusive and complete perspective on generating ACEJL in a more wide-ranging way. Meeting the needs of schools will improve interaction in the classroom such that in line with the effort to equip students to the calls of the 21st century skills. All of this future research would help the nation to develop its golden generation toward 2045, 100 years Great Indonesia. If this result is passable, any other nations (or schools) might then be able to adopt this result with respect to their localities.

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