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The Development of Performance-based Model Authentic Assessment on Archival Subject

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Abstract

The developed assessment models use two types of test or non-test instruments which are divided into three aspects: performance, knowledge, and social behavior [23]. The purpose of this research is to develop a product in the form of an authentic assessment instrument package based on the performance of Archival Subject in Vocational High School using the research and development research technique. Borg and Gall describe the expedient of the instruments through expert validations & readability try-outs and describing the result of the implementation using the quasi-experimental method design by using the technique of analyzing the quantitative and qualitative data.

Authentic assessment model is developed as an assessment model that constructs learning [36] and increases the concept of knowledge, behavior, and skills of the students comprehensively and objectively to fulfill the assessment criteria.

Keywords: authentic assessment, performance assessment, archival learning, vocational high school

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1. Introduction

The change in curriculum describes the paradigm shift from input-oriented education to outcome-based education [16]. According to Indonesian Government Regulations No. 23 The year 2013, there are four elements that are changed, which are the standard of graduates' competence, content, process, and assessment [13].

Standard of assessment is one of the fundamental aspects of learning [22, 27] that is mentioned in the 2013 Curriculum. According to the Decree of Education and Cultural Minister of the Republic of Indonesia Number 66 The year 2013, the change happens in the standard of assessment based on competence. The shift of assessment based on the educational level curriculum of 2006 that is only done through a test with the

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purpose of measuring the cognitive knowledge based on results [7, 20, 27, 28] toward an authentic assessment covering the measurement of behavior, skill, and knowledge based on process [7, 10] and result. Assessment in the 2013 curriculum refers to the benchmark reference assessment system approach that is a competence achievement evaluation that is based on the minimum passing grade. Minimum passing grade is a criterion in the minimum completeness in learning that is set to standard by the schools by considering the achieved basic competence. The assessment of students' learning outcome covers the competence of behavior, knowledge and skills that is done proportionately so that it can be used to find a relative position in every student toward the given standards ([3, 4, 23], Mogonea, 2014; [8, 27, 33, 35]). The range of assessment refers to the scope of material, subject/content/program competence and program [1, 10]. This is suitable for the core competencies that the students have to possess.

In the regulation of the cultural and education minister number 70 the year 2013 about the basic framework and structure of vocational secondary school curriculum, the subjects that students have to learn are divided into three groups: group A (mandatory), group B (mandatory), and group C (specialization). Archival is one of the subjects of Office Administration Program that is included in group C, where the subject demands the students to do practice in activities involving archiving.

In order to get the evaluation in three aspects of behavior, skill, and knowledge [3, 7, 8, 23, 33], so the assessment standard of curriculum 2013 emphasizes on the usage of a portfolio assessment system that is made by the students where they are also the main instrument of evaluation [2, 9, 23]. Authentic assessment is included in portfolio evaluation [8]. Then it is explained more by Arifin 2013:179; [8, 9, 23, 37] that portfolio assessment is an approach in assessing the students' performance. Authentic assessment model is an evaluation technique that is used to know the achievement level of the students' competence in real skills, not abstract ones [9, 12, 17, 22, 26, 28, 37].

In SMK Negeri 1 Ngawi Kabupaten Ngawi, it is still dominated by written assessment where teachers give out questions in the form of multiple choices or essays from the guidebooks, while the students' performance or self-assessment from students are not done maximally by teachers. Therefore, at the final score, the effective and psychomotor aspect evaluation is not done at all [7, 12, 20, 27, 30]. Therefore, the students' performance in the subject of archival is often assessed through knowledge alone by written test instruments which are not considered as authentic assessments [12, 28].

Questions in the worksheets still focus on the knowledge aspect. The archival guide-books used is published in 1997. Only a few materials are suitable for the book. In the archival learning, teachers encounter obstacles in giving out materials suitable for the syllabus.

The students' learning outcome in the archival subject cannot be ignored because basically archival is the specialization subject that is designed so that the students can be skilled in archiving and later handling all kinds of documents and ready to face the office working field. Psychomotor domain assessment is a test done to measure the students' performance (Rizema, 2013:289; Fatonah, 2013:50). Observation sheet is an assessment done to observe the existence of an object or the appearance of an observed skill aspect (Rizema, 2013:290; [20]). Performance assessment is an evaluation done to observe the students in doing something and it is suitable to be used to measure competence success that demand students to do a certain task (AlJeraisy, Mohammad, Fayyoumi, & Alrashideh, 2015; Wiggins, 1993; [20, 21, 28, 37]) like practices, discussion, and presentation. This way is considered to be more authentic compared to the written tests because what is measured will mirror the students' real skills (Stinggins In [34]).

The performance assessment demands the students to do a task in the form of actions that can be observed by teachers suitable with the possessed knowledge (Wiggins, 1993; [20, 21, 28]). Basically performance evaluation is an authentic assessment because in the assessment the students are asked to demonstrate their knowledge and findings, do the skills and reasoning ([10, 28]; Wiggins, 1993; [21]; Wiggins, 1989; [20, 27]).

Assessment instruments that will be developed are instruments in the archival subject in the grade X of vocational high school in office administration expertise program. The instruments will be designed to optimize the assessment toward the skills of the students in practice of saving and finding archives.

The archival subject is one of the subjects in the 2013 curriculum for vocational high school in the tenth grade of office administration expertise program. This subject will give knowledge and skill to the students toward how to handle documents in companies where office administration is conducted. According to Decree of Education and Culture Minister of the Republic of Indonesia Number 64 the year 2013 about the content standard of elementary and middle education, there are four competencies that have to be possessed by students and one of those related to the archival subject is processing, reasoning and presenting in the concrete and abstract domains related with self-development learnt in schools individually, acting effectively and creatively,

and being able to do specific tasks under direct supervision. It is very clear that this subject is designed so the students can understand and practice the materials well in schools and in real working industry.

The preliminary study is done through interviews with the subject teacher and observation from which the researcher go the information that the teacher still has problems in designing a performance assessment format that is suitable with the curriculum demands.

Other than the lack of assessment standard socialization, it is also caused by the lack of synchronicity between the guidebook and the worksheet used by the teachers in teaching. This resulted in the assessment being done not authentically. The score of the students' performance in the learning outcome report is taken from the practicum score, not from the real performance in learning. The teacher has some difficulties in doing the behavior assessment because of the non-existence of a clear guidebook and the teacher has to develop the correct instruments for the subject. Cognitive assessment is done greatly in the competency evaluation and in the semester exam, which is still taken from the given guidebook and worksheet. The result also shows that there is a difference in the average of the vocational practice exam in the implementation of the curriculum which indicates a decrease caused by too many basic competencies that have to be taught and the lack of practice in archiving for tenth graders. To solve this problem, there has to be an effort in developing an authentic performance assessment instrument that is suitable for the students.

Relevant previous research showed that the authentic assessment in Indonesia is still focused on exact sciences, while this research focuses on social sciences. This is why the researchers try to develop an authentic assessment instrument based on performance to measure clearly the students' skills and competence in archival. Based on the background above, the researchers bring up the title of **"The Development of Performance-Based Model Authentic Assessment on Archival Subject (a study in the tenth graders of office administration program in SMK Negeri 1 Ngawi)"**

The objectives of this research and development are as follows:

1. explaining the research procedure used in developing authentic assessment instruments.

2. describing the suitability of the authentic assessment instruments based on performance through expert validation in productive learning of office administration in the archival subject of saving and finding documents in the tenth grade of SMKN 1 Ngawi.

3. describing the result of authentic assessment instruments implementation in the archival subject.

2. Methodology

This research uses the model of research and development (Borg & Gall, 1983:775) that is modified. The procedure of developing a performance-based authentic assessment instrument. The procedure is as follows:

2.1. Procedure

2.1.1. Preliminary study & planning

covers: a) the developed products, b) objective and purpose, c) users, d) importance of products, e) location of development, and e) technique of development which is: a) initial product development, b) limited try-out, c) revision, d) field try-out and e) revision.

The development of performance-based authentic assessment instruments is the compiling the validation instruments, the product draft arrangement, product draft validation and product draft revision. The validation instrument compilation is done to determine the criteria of performance-based authentic assessment instruments from content and construct aspects. Validation instruments are arranged in Likert scale. The range is also accompanied by decryption of comments and suggestions. For the cognitive aspect assessment suitability criteria, the multiple choice tests use to try out analysis and different-level question items.

The product draft arrangement covers the test and non-test instruments so that the assessment become authentic and comprehensive including all fields and aspects of the students' skills [20]. The following Rachel is a description of products developed and will be used as performance-based authentic assessment instruments. The model used in cognitive aspect is Problem Based Learning/PBL while in the psychomotor, it is REACT (Relating, Experiencing, Actuating, Cooperating, Transfering).

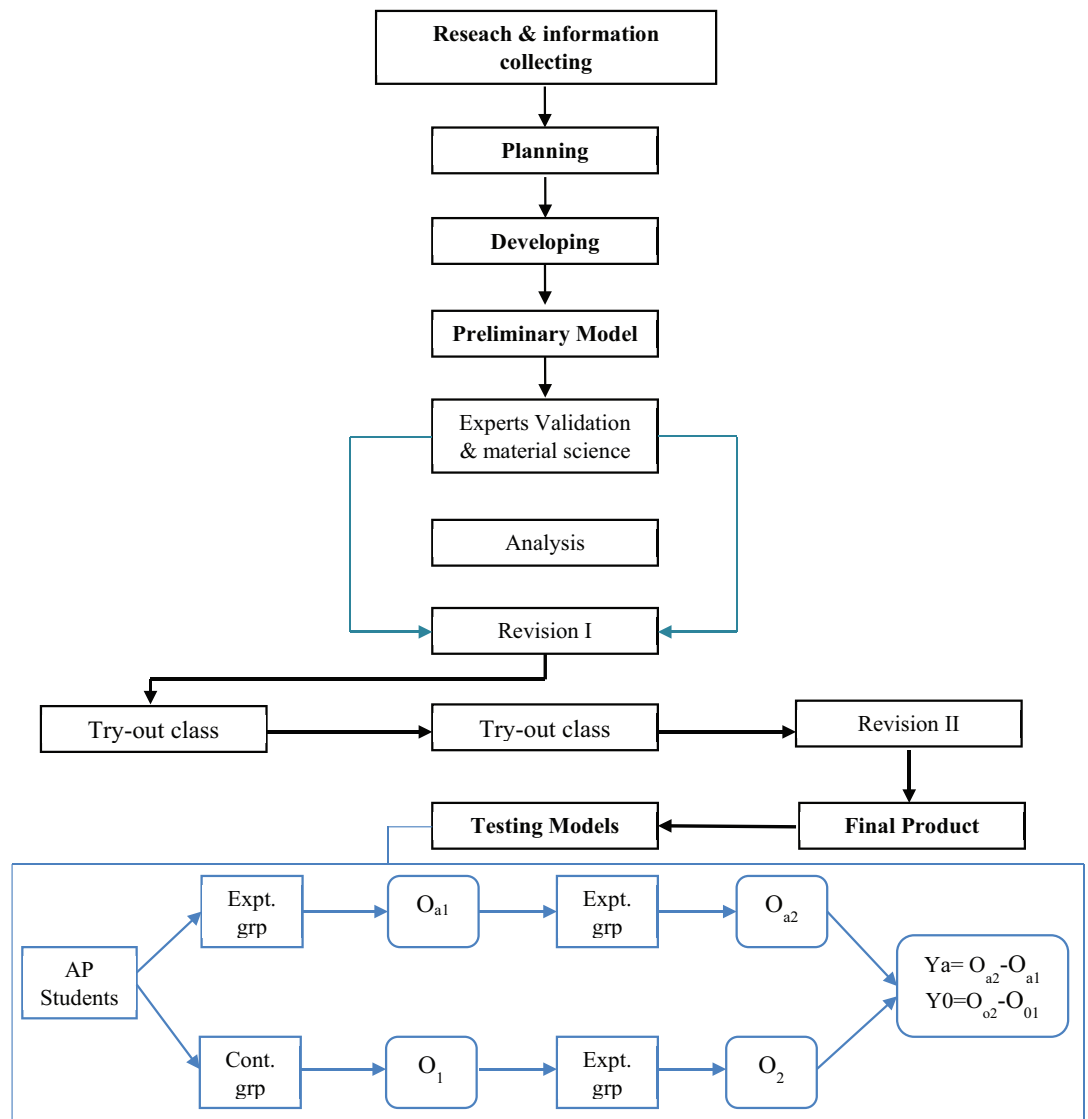Validation is an activity done to know the suitability of the developed product draft result by comparing it with certain criteria [35]. The validation done is content validity, which is conducted by the senior teacher of the archival subject with minimum 7 years of working experience and minimum education of *S1 Pendidikan Administrasi Perkantoran.* While the criteria of construct validator are being a lecturer of Office

TABLE 1: Performance-Based Authentic Assessment Instruments On Archival Subject.

Field	Assessment Instrument	Category		Task Type	
		Test	Non Test	Individual	Group
Psychomotorik	· Archive saving worksheet	√		√	√
	· Archive finding worksheet				
	· Performance observation sheet	√		√	
	· Psychomotor assessment criteria				
			√		
			√		
Cognitive	· Multiple choices and description with answer keys	√		√	
	· Case study				
	· Problem-solving observation sheet		√		√
	· Problem-solving criteria				
			√		
			√		
Afektif	· Peer Assesment		√	√	
	· Self Assesment				
	· Behavior assessment		√	√	
			√	√	

Administration Education who has a minimum education of master's degree and teaching for 5 years (Sudaryono, dkk, 2012: 72).

Limited try-out is done to know the readability level of instruments by users (teachers and students) and knowledge test instrument validity in the form of multiple choice [35] with the difference of try-outs and difficulty-level test items. The field test is used to ensure that the developed product is appropriate to be used or not and that it can measure the students according to the purpose objectively [35]. A good model has to fulfill two criteria of learning and usage model. Field test model tries to achieve the learning outcome and general ability in scientific learning, so that quasi-experimental design model with pre-test and post-test can be used to determine the cause-effect relationship.

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│     Revision I       │
└─────────────────────┘
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Try-out class → Try-out class → Revision II

Testing Models ← Final Product

AP Students → Expt. grp → O_{a1} → Expt. grp → O_{a2} →

AP Students → Cont. grp → O_1 → Expt. grp → O_2 →

$Ya = O_{a2} - O_{a1}$
$Y0 = O_{o2} - O_{01}$

2.2. Participants

The subject is the tenth grade of office administration 1 (control group) with 6 try out subjects with the proportion of 2 students with high proficiency level, 2 with middle level, and 2 with a low level that is determined through the previous semester exam result.

Field test with the subjects of class X APK 2 in SMK Negeri 1 Ngawi of 34 students. In this stage, there are 2 classes to be a control group and experimental group. In control group, the learning uses conventional method, while experimental group uses learning with the scientific approach (PBL and REACT).

3. Data Analysis and Result

3.1. Data Validation

Data validation contains the data acquired to measure the developed performance-based authentic assessment instruments' suitability from the construct and content aspects, contemplated from task, rubric, principle, activity and learning implementation. The following is the resulting data from performance-based authentic assessment instrument data validation:

TABLE 2: Performance-Based Authentic Assessment Instruments Validation Result.

Validation	Field	Validation Score Percentage (%)	Criteria
Construct	Psychomotor	95	Sangat Valid
	Cognitive	92	Sangat Valid
	Affective	94,28	Sangat Valid
Content	Psychomotor	92	Sangat Valid
	Cognitive	93,33	Sangat Valid
	Affective	100	Sangat Valid

The above data shows that the developed authentic assessment instrument has suitable criteria to be used without substantial revision. Considered from the task, rubric, principle aspects of authentic assessment, it is very valid and appropriate.

3.2. Limited Try-Out Data

Limited try out data on this research is sourced from the users. The users are teachers and students. Data from a teacher is used to find out the suitability in the form of the worksheet and psychomotor assessment. While the data from students are used to find out the readability of the instrument of the worksheet.

The readability questionnaire data from teachers and students as users are shown by table 3 with an average of 88,1% shows that the student worksheet with psychomotor assessment instruments has a great result when used in learning looked from the language, easy to uses, class activities, and class conduct aspects. While the average of student data of 88,48% shows that the student worksheet with the great response is used in learning from ease to use, learning, language, and interest aspect that suitable with the learning material and student development level.

TABLE 3: Performance-Based Authentic Assessment Instrument Limited Try-Out Result.

Users	Subjects	Validation Score Percentage (%)	Average (%)	Kriteria
Teachers	Teacher 1	88,57	88,1	Excellent
	Teacher 2	91,42		Excellent
	Teacher 3	82,48		Excellent
Students	Student 1	89,09	88,48	Excellent
	Student 2	83,63		Excellent
	Student 3	83,63		Excellent
	Student 4	92,72		Excellent
	Student 5	89,09		Excellent
	Student 6	92,72		Excellent

3.3. Field test data

The field data result is used to know the level of success level from students in understanding the presented competence of psychomotor, cognitive, and affective aspect. The following is the student success data in learning purpose objectively.

TABLE 4: 4 field test data result.

Aspects	Assessment Instrument	Competent/passed/good		Incompetent/failed/bad	
		n	%	n	%
Psychomotor	Worksheet 1	34	100	0	0
	Worksheet 2	33	97	1	3
Cognitive	Multiple choice and essay	33	97	1	3
	Case study	32	94	2	6
Affective	Peer Assesment	27	70	7	30
	Self Assesment	27	70	7	30
	Behavioral observation	27	70	7	30

The result of the usage of performance-based authentic assessment instrument package tested in big groups of X grade AP 2 in the cognitive aspect for product knowledge in 34 students shows that 33 students passed and one failed, the implementation is successful for 32 students and two failed. The practical skill knowledge aspects have

the 33 students being competent and one incompetent. Social behavioral affective aspect has the 27 students as good and 7 as bad.

TABLE 5: Pre and Post Model PBL Cognitive Learning Outcome Data.

	Experimental Group		Control Group	
	Pre	Post	Pre	Post
Mean	77	81,6	74	75
SD	9	9,2	13,5	13,5

The table above shows that the field test data uses the control class of 35 students and experimental of 34 students with active characteristic compared to the quiet one with high competitiveness. The result of the quasi-experimental design with the pre-post test in control class resulted in the average of 74 in pre-test which improved to be 75 with the same standard deviation that shows the improvement of learning outcome in control class with the test design not being given treatment to show insignificant result and heterogeneous class. While the experimental class is given treatment using authentic assessment combined with PBL & REACT that shows improvement from pre-test of 77 and post-test of 81,6 with less deviation standard than the control class so that the experimental class that is given treatment is not heterogeneous. Thus, there is enough evidence in showing that the developed assessment instrument as field model using quasi-experimental design is a valid model that can construct the students' knowledge and skill.

4. Discussion

Assessment is used to take the students where the teacher acts as an observer of students' skill, as the designer of assessment, and as the actor of the activities to find their own pedagogical skill [14]. A good performance-based authentic assessment instrument is designed to measure the quality of the students' skill from constructive social skill perspective [36] based on the minimum passing standard of competence (*Peraturan Menteri Pendidikan dan Kebudayaan No. 66 Tahun 2013*). Ergo, the authentic assessment has to fulfill the principle of the main aspects in the procedure, capacity, and given competence that involve the students in complex activities that reflect good priorities and challenged in the discussion, analysis, involvement, and collaboration [20]. The evaluation is ased to be more collbaorative of thorough answers and are based on reality [26], criteria of scoring formed in the difference in appearance and

learning outcome [28], a place to learn the real conditions because learning environment is one that determines the success of the assessment implementation [19], for example with the advancement of social and professional life that develops competencies of critical thinking and problem solving [5], as well as creating potential learning outcomes (Mogonea, 2014; [7]). Assessment service for non test development requires that students work in teams in two times so that students are able to reconstruct its ability [22] with the progress of the low knowledge level to a high level of knowledge (in [13, 20, 27, 28]). Of the interactions that are performed by students in teamwork, until the process of mediation between students, causing the potential and ability of students will increase [10]. This task is in the form of case studies and assignments task performance. Task case studies equipped with problem-solving assessment criteria that reflect students ' ability significantly both within and outside of the classroom [5, 9, 22, 26]. To find out the extent to which students' ability in the success of the task, then the observation sheet containing the criteria to reflect the ability of the learners is needed (Mogonea, 2015; [20, 24, 37], on each there are non-tasking test observation assessment sheet. Assignment of case studies are developed based Problem Based Learning (PBL) contains archival problem cases that usually occur in real life [5] used for the conception of science learning, decision-making, and develop critical thinking ability (Sahin & Demir, 2014; [29]; Al Jeraisy, Mohammad, Fayyoumi,& Alrashideh, 2015; Mogonea, 2014; [7]). It exposed on problem-solving abilities assessment fact sheet [15] that includes the capability of teamwork, communication, engagement, information processing, and analysis of critical thinking ([29]; Al Jeraisy, Mohammad, Fayyoumi, & Alrashideh, 2015; Mogonea, 2014; [20]) It is most effective for learning, collaboration and enriches the experience of students in learning and combines cognitive components, affective, and psychomotor [5]. While the form of psychomotor tests non worksheets students using a learning approach that REACT is divided into two student worksheets are designed to test students ' skills [35] specially designed to reconstruct the knowledge that students have into the application of skills in accordance with the level of performance in psychomotor tasks [1].

Development of performance based assessment instruments using valuation techniques dynamic approach can be seen from the assessment based on learning processes and implementation guidance on assessment that can modify and enhance the knowledge students as there is a fairly strong correlation (Al Jeraisy, Mohammad, Fayyoumi, & Alrashideh, 2015; Dogan & Kultu, 2010), besides an active participant is visible from the liveliness of the students as objects at once the subject of an assessment, the assessment will also include a description of the changes in knowledge, and

demand the students to provide a multi-faceted response which can be seen from the compulsory assignment is done by students and teacher as evaluator/observer [10]. Thus, authentic assessment instrument developed in addition used to know student learning outcomes is also used to evaluate and motivate students [35].

The development of effective social attitude instruments includes three kinds of non-instrument test i.e., self, peer, and teacher assessment [2].

Self-assessment is one of the ways in which assessment is used to assess yourself [15], while peer assessment asks students to understand each other about the performance and attitude of friends [18]. The assessment criteria used refer to the competencies of the social attitudes on KI2 that has been broken down into indicators of social attitudes based on the implementation of the learning Problem Based Learning and REACT with reference to how large learning and skills can be modified significantly to the level of competence that is more optimal [2, 37]. The results of peer assessment, self assesment showed significant results affecting also on the observation of social attitudes by teachers [18].This indicates self-assessment and peer assessment done can increase the liveliness of students in learning because of the attitude of social criteria and be divided into several indicators that reflect the learning that is active. This assessment is used to determine significance level stated in the criteria and dimensions of social attitudes that are designed using the scale range [35].

Whereas the development of instruments in the form of a multiple-choice test given to students [1, 35].

with easy test proportion (20%), moderate (70%), and difficult (10%) along with reserved descriptions. This instrument contains a wide variety of topics [11, 25] about storage and rediscovery of the archives are divided into level C2, C3, and C4.

5. Conclusions and Suggestions

Research and development of authentic assessment use the research development of Borg & Gall reduced only at the stage of field trials. The limited trial design is done to find out the feasibility of the instrument through the validity of invalid constructs and expert content, readability test done by next users (teachers and students). A field test of a design method using quasi-experimental design. Based on the results of the validation through expert assessment service material, instruments of authentic assessment stated "very valid", and the results of the tests are limited through the now the response of students and teachers to know the practicality and the readability of use indicate the result "very good". While the field trials result conducted to know the

authentic model implementation just self assessment performance based on results obtained subject section that use of the authentic assessment service model has a valid effect significantly on to the level of competence of students from both the cognitive, psychomotor, effective and this can be seen from the control class and learning outcome experiments, before and after product use authentic assessment service. This shows that a good model can be constructed learning activities, student activities, the ability of the knowledge, attitudes and social skills of students as well as invalid constructs to compensate teachers as trainers and observers in learning. With eligibility criteria that are very valid, this shows that the authentic performance-based assessment developed has been a valid criteria both from the aspect of the principles, criteria, tasks, rubrics, learning activities, as well as the implementation of the Learning [11], as well as the social construction of knowledge, attitudes, and skills that students of this instrument is very worthy to be used. Insight students and teachers on an ongoing basis in conducting and applying authentic assessment service thoroughly will form the skills necessary in accordance with the standards that have been set (Mogonea, 2014; Samian & Noor, 2012). Authentic assessment service well done will have an impact on the teacher to assess objectively [35] and as an appropriate assessment tool to measure the student's activities. It is clear that this research very positive impact on the competence of teachers and students. At the time of learning activities, assessment models used (LBC and REACT) gives a positive impact on class activities and confidence learners including the performance of learners.

At the time of the assessment of authentic, the presence of instructors is crucial, so it must be active and attention at the time of the work assignment. Authentic assessment should be carried out thoroughly by the teacher. When conducting the assessment of authentic performance observation and problem-solving ability, teachers focus on criteria that appear at the time and could not be seen on performance results.

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