



Investigating The Use of Knowledge Assessment Rubrics in Vocational Schools in Mathematics Learning

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Abstract. A rubric is an alternative assessment tool needed by teachers in determining student learning processes. As a guide to assessment, the rubric aims to equalize evaluators' perceptions and minimize subjectivity. This study aims: (1) to investigate the extent to which assessment rubrics on knowledge aspects are applied in mathematics teaching and learning activities in vocational schools, and (2) to examine the obstacles faced by teachers in the use of knowledge assessment rubrics. This type of research is a qualitative descriptive study, with the research subjects being two teachers of mathematics studies in one of the vocational schools in Dayeuhkolot, Kabupaten Bandung. The methods were to use interview and documentation of data collection in the form of lesson plan that used by the teacher when teaching. The results of the study show that: (1) the use of knowledge assessment rubric at the level of the vocational school is still not well implemented and is also not optimal; and (2) obstacles faced by teachers in the use of knowledge assessment rubrics, namely: a) teachers still find it difficult to make knowledge assessment rubrics, and b) teachers argue that the process of creating knowledge assessment rubrics takes a lot of time.

Keywords: Rubric, assessment, knowledge assessment, mathematics, vocational school

INTRODUCTION ~Assessment is an essential subsystem and is needed in every education system because the assessment can reflect how far the development or progress of educational outcomes. Without assessment, a teacher cannot know how far the success of students. Therefore, assessment is an important part that cannot be separated from learning activities. It means that assessment is part of the teaching and learning process that aims to bring improvements to both the assessor and the individual being assessed (Nasri et al., 2010, p. 37). All forms of information collected from the assessment process are indeed vital to make decisions and monitor student development (Poth, 2013, p. 634). The aim is nothing but to improve and improve the quality of learning. Therefore Nasri et al., (2010, p. 37) concluded that assessment as a method

used to improve the quality of education and improve performance in various educational contexts. Kementerian Pendidikan dan Kebudayaan, Direktorat Jenderal Pendidikan Dasar dan Menengah, Direktorat Pembinaan Sekolah Menengah Kejuruan on the book of "Panduan Penilaian pada Sekolah Menengah Kejuruan (2015, p. 10) said that assessment of student learning outcomes includes aspects of attitude, knowledge, and skills. It aims to produce students who are balanced physically, emotionally, and intellectually (OluAina, 2005). Good assessment results are those that can be accepted by all parties, that is, both from the individual assessed, who is assessing and from other parties who will use the results of the assessment. Therefore in the implementation of assessment of learning outcomes, an assessor needs to refer to



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the principles of assessment (Kementerian Pendidikan dan Kebudayaan, Direktorat Jenderal Pendidikan Dasar dan Menengah, Direktorat Pembinaan Sekolah Menengah Kejuruan, 2015, p. 9). To be able to assist teachers in providing grades that are following the principles of assessment, it is necessary to formulate assessment guidelines. These guidelines are called rubrics. The rubric is one alternative assessment tool that is useful to know the extent of student knowledge, and the learning process takes place (Birgin and Baki, 2009; Birgin, 2011). Therefore, the rubric is one of the authentic products (Greenstein, 2012, p. 53). The use of rubrics in authentic assessment aims to provide precise assessment criteria for students (Mungai and Dagada, 2012, p. 312). The rubric contains grading grids based on specific criteria along with a description of these criteria with a scaling scale of each criterion. Such an arrangement of rubrics is expected to be able to describe and guide the assessment process carried out by the teacher of the work or performance of students (Chowdhury, 2019, p. 61). In

general, the rubric is considered as the most specific measurement tool in the 21st century because it includes indicators of achievement at each level (Greenstein, 2012, p. 53). So the rubric a tool for teachers when monitoring student work or performance and also a tool for students when assessing work or the performance of themselves and their peers (Suurtamm, et al., 2016, p. 17). Therefore, the rubric is a handy teaching tool and contributes significantly to the teaching-learning process (Chowdhury, 2019, p. 61). The use of rubrics in the teaching-learning process is one of the efforts of a teacher to be able to fulfill his role as a competent assessor, under the principles of assessment. This is based on the rubric definition itself, which is a useful assessment tool and can help instructors to assess student work in a more consistent, reliable, and impartial manner, and the rubric is able to add reliability, validity, and transparency in the assessment process (Chowdhury, 2019, p. 61). But unfortunately, there has not been much discussion regarding the use of rubrics in the learning process. At least this can be seen from the statements below.

Table 1. Level of Research on Rubric

Study	Statement
Chowdhury (2019) Application of Rubrics in the Classroom: A Vital Tool for Improvement in Assessment, Feedback and Learning <i>International Education Studies</i>	"Although some studies have examined the benefits of rubrics on student performance levels; nevertheless, research on rubrics is still at an early stage (p. 61)."



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[Hima and Saputro \(2017\)](#)

Developing Scoring Rubric: Do the Students Need It?

ELT-Echo

“However, the number of studies investigating the perception and the writing performance as well as the relationship between those two variables in the use of rubric is limited (p. 101).”

[Gallego-Arrufat and Dandis \(2014\)](#)

Rubrics in a Secondary Mathematics Class

International Society of Educational Research (iSER), Mathematics Education

“In addition, this article aims to contribute to the limited literature that pertains to the use of rubrics in secondary education (p. 73).”



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Facts from **Table 1.** indicate that research related to rubrics in assessment still needs to be developed. This is considering that the use of rubric in the assessment process provides many benefits for both teachers and students. Sesanti&Ferdiani (2015, pp. 37–38) suggest the benefits or uses of rubric assessment are as follows:

1. The rubric explains the description of the problem or task.
2. The rubric provides information on the weight of the assessment.
3. Students get fast and accurate feedback.

4. The assessment is more objective and consistent.
5. Students become active learners.
6. Students get "content knowledge" and "procedural knowledge".
7. As a tool or guideline for evaluating student performance or work.
8. Students can judge their performance.
9. Teachers and students get an effective reflection tool about the learning process that has taken place.

Below we have provided a summary of some of the previous research findings on rubrics in a variety of disciplines

Table 2. Relevant Study (Previous Study)

Study	Things Discussed	Finding(s)/ Conclusion
<p>Chowdhury (2019) Application of Rubrics in the Classroom: A Vital Tool for Improvement in Assessment, Feedback and Learning <i>International Education Studies</i></p>	<ul style="list-style-type: none"> • Rubric definition / understanding rubric • Types of rubrics • Constructing a rubric • Benefits of using rubrics • Research finding on the use of rubrics 	<p>Most educators today agree that rubrics can assess student work more efficiently, consistently, objectively and transparently. Teachers can easily use rubrics to evaluate student learning achievement. Indeed at first, instructors may hesitate to use rubrics in class, because they require a lot of time. However, once the rubric has been prepared, assessments conducted by instructors run faster, and feedback activities related to student performance and improvement are more constructive.</p>



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Hima and Saputro (2017)

Developing Scoring

Rubric: Do the Students

Need It?

ELT Echo

- How do the students perceive the situation in which they have no rubric?
- How do the students perceive the situation in which they are involved in developing a scoring rubric?
- How do the students perceive the conditions in which they are involved in using a rubric to do peer-assessment?
- What are the effects of:
(a) having no rubric,
(b) generating scoring rubric, and
(c) participating in peer-assessing by using a rubric on the students' writing scores?
- How do the students' perceptions of the three situations correlate with their writing scores?

The best-perceived situation for the students was when the students were involved in designing a rubric before the lecturer assigned them to write a paragraph. It can be inferred that some students positively perceived the use of a rubric from the lecturer and achieved high scores, while the others felt the same way but had average or low scores.

Ayhan and Türkyılmaz (2015)

Key of Language

Assessment: Rubrics and Rubric Design

International Journal of Language and Linguistics

- Construction of rubric
- Sets of functions for the use rubric
- Types of rubric (include of: advantages and disadvantages)

Rubrics play a key role in evaluating student skills especially by providing validity and reliability. Learners feel more comfortable, if the assessment results received can be stated openly with good and true. This makes students more confident to improve further performance, without feeling discouraged. Therefore, it is very important to know the procedures and use of



efficient assessment tools or instruments.

[Birgin and Baki \(2009\)](#)

An investigation of primary school teachers' proficiency perceptions about measurement and assessment methods: the case of turkey

Procedia – Social and Behavioral Sciences

Investigate the primary school teachers' proficiency perceptions about the measurement and assessment methods, including:

- *traditional assessment methods* (in-class observation, unit test, essay type question, homework)
- *objective assessment methods* (multiple choice, short answer, true-false, matching, mixed item)
- *performance assessment methods* (performance tasks, portfolio, project, rubric, group work, student exhibition, class discourse)
- *alternative assessment methods*" (self and peer assessment, interview, journal, concept map, attitudes scale)

Primary school teachers feel that they are more adept at using objective assessment methods, such as multiple choice, true-false, short description, etc. This is because they are used to using it. In contrast, elementary school teachers feel that they are not good at using alternative and performance assessment methods, such as student journals, rubrics, self / peer assessments, attitude scales, interviews, portfolios and projects. That is because elementary school teachers lack sufficient knowledge about alternative assessment methods. In addition, alternative assessment methods and performance are new for themselves.

In Indonesia, research relating to rubrics is still very rarely found. This reality is a motivation for researchers to research the use of rubrics in schools, especially at the vocational school level and in the aspect of knowledge. Next, we will describe the gap analysis or the statement of the gap (originality) or a new report or the difference between this study compared with previous research.



Table 3. Gap Analysis or Gap Statement

Study	Objective(s) / Aim(s)	Subject / Procedure	Design	Gap
<p>Gallego-Arrufat and Dandis (2014) Rubrics in a Secondary Mathematics Class <i>International Society of Educational Research (iSER), Mathematics Education</i></p>	<ul style="list-style-type: none"> to share the study of integrating a rubric as an assessment for learning tool in a secondary mathematics classroom in Spain. to examine the viewpoint of a Spanish teacher regarding the benefits and difficulties of using rubrics as an assessment for learning tool. to motivate secondary mathematics teachers to use rubrics in their classes. to contribute to the limited literature that pertains to the use of rubrics in secondary education. 	<p>A mathematics teacher and her students (N=15) were drawn from a bilingual public school in Granada (Spain), where the students who participated in the research were between 14 and 15 years old.</p>	<p>Case-study qualitative research</p>	<ul style="list-style-type: none"> On objective: (1) to investigate the extent to which assessment rubrics on knowledge aspects are applied in mathematics teaching and learning activities in vocational schools, and (2) to examine the obstacles faced by teachers in the use of knowledge assessment rubrics. On subject: The vocational school of Mathematics teachers in Dayeuhkolot, Bandung Regency. On Design and Procedure: qualitative descriptive study, where the methods were to use interview and documentation of data collection in the form of lesson plan that used by the teacher when teaching.



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[Sihombing, Jufrizal, and Anwar \(2017\)](#)

**Scoring Rubric as the Authentic
Assessment Using by the English Teachers
to Run the National Curriculum in South
Sumatera, Indonesia**

English Language Teaching and Research

to produce a product of the
research in the form of a
developed model, it is
authentic assessment coring
on scoring rubric.

The English
teachers in
Lubuklinggau,
South Sumatera.

Research &
Development
using
concurrent
triangulation
technique
(R2D2-model
by Willis 2000).

- **On objective:** (1) to investigate the extent to which assessment rubrics on knowledge aspects are applied in mathematics teaching and learning activities in vocational schools, and (2) to examine the obstacles faced by teachers in the use of knowledge assessment rubrics.
- **On subject:** The vocational school of Mathematics teachers in Dayeuhkolot, Bandung Regency.
- **On Design and Procedure:** qualitative descriptive study, where the methods were to use interview and documentation of data collection in the form of lesson plan that used by the teacher when teaching.



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[Panadero & Jonsson \(2013\)](#)

**The Use of Scoring Rubrics for Formative
Assessment Purposes Revisited: A Review**
Educational Research Review

to review the research on Analysing 21 Qualitative
formative use of rubrics, in studies about descriptive.
order to investigate if, and rubrics through
how, rubrics have an impact content analysis:
on student learning. sample,
subject/task,
design, procedure,
and finding.

- **On objective:** (1) to investigate the extent to which assessment rubrics on knowledge aspects are applied in mathematics teaching and learning activities in vocational schools, and (2) to examine the obstacles faced by teachers in the use of knowledge assessment rubrics.
- **On subject:** The vocational school of Mathematics teachers in Dayeuhkolot, Bandung Regency.
- **On Procedure:** the methods were to use interview and documentation of data collection in the form of lesson plan that used by the teacher when teaching.



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From all the descriptions above, it can be seen that the rubric is something vital in the assessment activities because the rubric as a medium for measuring and assessing student learning achievement is clear, systematic, integrated, and transparent. Based on the background, the research questions are:

1. How is the rubric of the assessment aspect of knowledge used at the vocational school?
2. What are the obstacles faced by teachers in the use of the assessment aspect rubric of knowledge?

In line with the research problem, the purposes of this study are: (1) to investigate the extent to which the assessment rubric on the aspect of knowledge is applied in teaching and learning mathematics activities in vocational schools, and (2) to investigate the obstacles faced by teachers in the use of the knowledge assessment rubric.

METHOD

This research is a qualitative descriptive study, with the subject of the study being two mathematics teachers who have been actively teaching at one of the Private Vocational Schools in Dayeuhkolot, Bandung Regency, for approximately two to four years. The location of the study was located in one of the Private Vocational Schools precisely in the Radio Palasari area, Dayeuhkolot, Bandung Regency. The school that is the location of the research is a private vocational school that has used the 2013 curriculum for more

than two years. Data collection techniques performed by researchers is through interviews and documentation. The interview technique is carried out by asking several questions to the two research subjects based on the instruments prepared by the researcher. Researchers also conducted documentation techniques, in which researchers collected documents in the form of data needed in analyzing the problems of this study. The material is in the way of learning tools, such as lesson plans.

Participant

The participants involved in this research were two teachers in the field of Mathematics at one of the Vocational Schools in Baleendah, Bandung District, who were around 25–27 years old. The first subject observed (hereinafter referred to as P-1) was a teacher in Mathematics who had been teaching at the school for almost four years, with her last education being a bachelor of Mathematics Education and is currently taking a master's program (mathematics education). P-1 is one of the active teachers in the school environment. Based on observations made by the author when visiting the school, where one of the P-1 coworkers revealed that the P-1 is one of the teachers involved in the school curriculum team and the assessor team in micro-teaching. Furthermore, to deepen the study and analysis of the observed problems, the authors also made observations to other Mathematics field



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teachers who teach at the school, call it the second subject (P-2). P-2 is a Mathematics teacher who has only taught at the school for about two years. Her last education was a bachelor of Mathematics Education and is currently taking a master's program (mathematics education). The reason for choosing the subject is because the writer is familiar with the two participants, so the writer considers that this will help and facilitate the researcher in carrying out this study activity. Another reason is the author's purpose in this study activity, which is to know firsthand about the assessment rubric used by teachers in the field of Mathematics studies in Vocational High Schools (SMK). Also, the author wants to see the extent of understanding of the subject as people who go directly to teach at school against the assessment rubric of students.

Methodology

The methodology used by the writer is the interview and documentation method of each subject and the lesson plan analysis or syllabus used by the subject when teaching in class. The study of the observations made aims to find out and see the assessment rubrics used by teachers in Mathematics at the vocational school level. The author only obtains learning tools (lesson plans) from P-1, so the analysis of the lesson plans or syllabus conducted by the authors in this observation report is an analysis of lesson plans belonging to the bachelor's

program. Interview activities carried out on each subject by adjusting the time of both, so that the interview activities carried out by the authors of the two subjects do not interfere with the activities of each subject. Interviews are conducted in two ways, namely the first way the authors conducted interviews directly to each subject at school or at an agreed place to carry out conversations. The second way is to use a communication tool. The interview process using this communication tool is carried out by the author with permission and agreement from the subject. Because of the difficulty in meeting with the subject due to the busyness of the subject as a teacher and supervisor of the computer-based national exam (read: UNBK), so the alternative is to conduct interviews through communication tools.

Intrument

The instrument used by the author carrying out research activity was in the form of an interview sheet with a focus on the theme that was discussed in this study. The instrument used serves as a data collection tool for subsequent analysis.

Procedure

The procedure of conducting this research consists of three stages, namely: the preparatory phase, the step of implementation and data collection, and finally, the stage of drawing conclusions and reporting of results. In general, the research procedure can be seen in **Figure 1.** below.

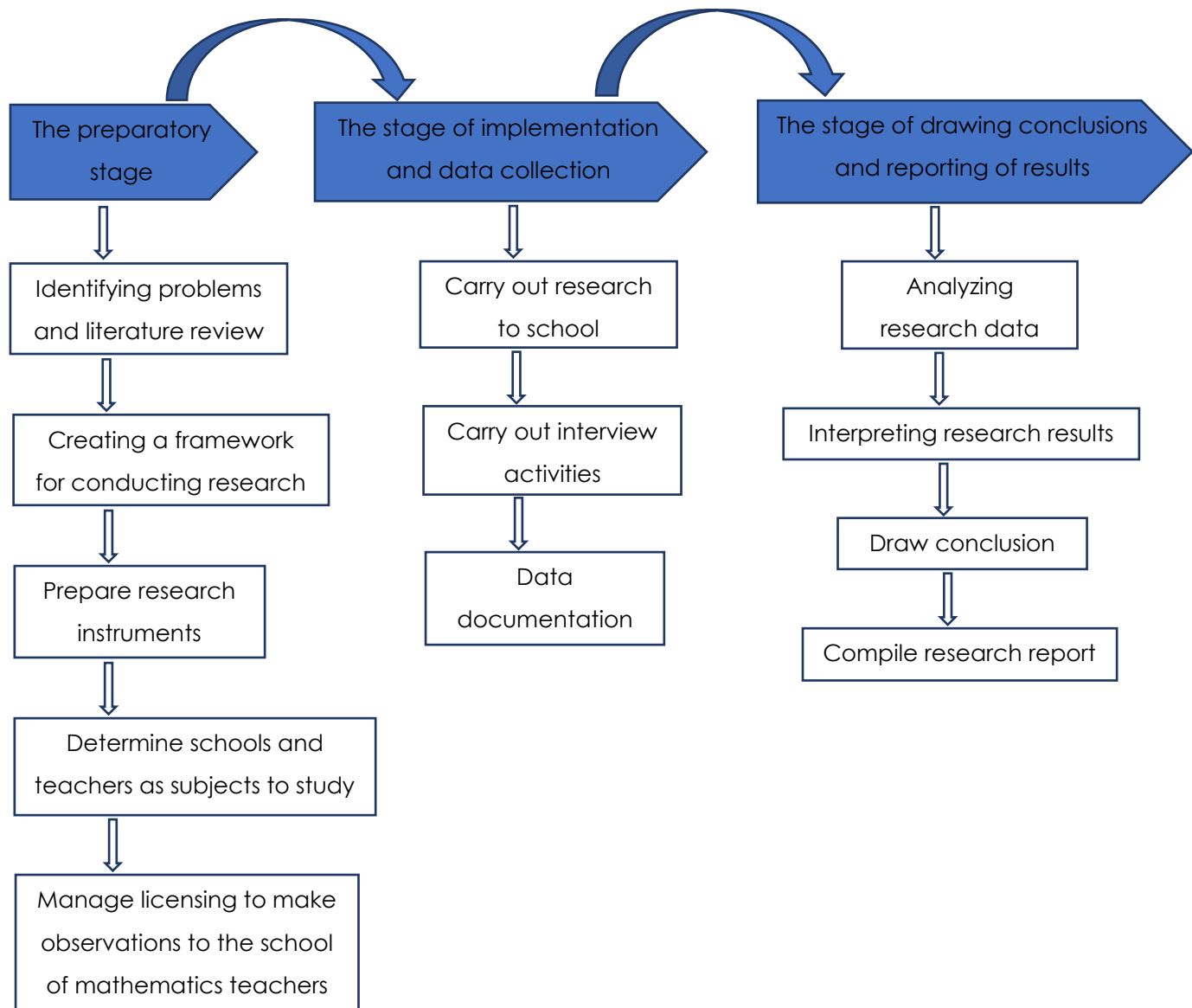


Figure 1. The Research Procedure

RESULTS

The Analysis of Lesson Plan related to the Scoring Rubric

Based on the results of the analysis conducted by the author of the lessonplan used by the first subject (P-1) when teaching, the author sees that the assessment techniques performed by the subject at each meeting tend to be the same, or can even be said to be the same. At each meeting, the subject always assesses based on observations, written test results, and the results of assignments. However, what is highlighted by the author in the lesson plan is the assessment rubric (or scoring rubric) used by the subject as a guide in assessing students. The author considers that the assessment rubric attached to the lesson plan is not yet complete enough, because the assessment rubric for cognitive aspects (knowledge) is not contained in the lesson plan. As noted previously that the scope of the assessment of student learning outcomes includes balanced attitudes,

knowledge, and skills so that they can be used to determine the relative position of each student against the standards has been established. This shows that the assessment of students needs to be done from these three aspects, namely aspects of attitude (affective), knowledge (cognitive), and skills. In carrying out the assessment certainly needed a guideline that became the teacher's reference in giving value to each activity carried out by the students. The guideline can be in the form of rubrics, where rubrics are arranged based on certain criteria along with a description of these criteria with a scaling scale of each criterion. In the

lesson plan used by the subject, in the appendix section the author only looks at the scoring rubric for aspects of attitude (discussion activities), affective, and spiritual attitude. The author does not find the knowledge assessment rubric. The following is an assessment rubric attached to the subject lesson plan.

Lampiran 1 : Rubrik Penilaian Sikap : Kegiatan Diskusi

LEMBAR PENGAMATAN SIKAP : KEGIATAN DISKUSI

Mapel : Matematika

KD : _____

Kelas/Smt : XI ___ / Ganjil

No	Nama Peserta didik	Aspek Yang dinilai					Jml skor	Nilai
		Disiplin	Tanggung Jawab	Kerjasama	Aktif	Menghargai Pendapat teman / Toleransi		

Figure 2.Appendix 1 on Lesson Plan: Rubric Attitude assessment – Discussion Activities

Pedoman Penskoran	Kriteria Nilai
4 : Baik sekali	A : 90 – 100 (Sangat Baik)
3 : Baik	B : 80 – 89 (Baik)
2 : Cukup	C : 73 – 79 (Cukup)
1 : Kurang	D : <69 (Kurang)

Pedoman Penilaian :

$$\text{Nilai} = \frac{\sum \text{Skor perolehan}}{\text{Skor Maksimal (24)}} \times 100$$

Lampiran 2 : Pedoman Penilaian Afektif Peserta Didik

PEDOMAN PENILAIAN AFEKTIF PESERTA DIDIK					
NO.	INDIKATOR	SKOR			
		4	3	2	1
1	Kehadiran peserta didik	Selalu mengikuti pelajaran dan hadir tepat waktu	Absen mengikuti mata pelajaran 1-2 kali dan terlambat kurang dari 5 menit	Absen mengikuti matapelajaran 3 s.d 5 kali dan terlambat 5 s.d 10 menit	Absen mengikuti matapelajaran lebih dari 5 kali dan terlambat lebih dari 10 menit
2	Keaktifan peserta didik	- Aktif dalam mengeluarkan pendapat yang baik - Bertanya saat pembelajaran berlangsung	- Aktif dalam mengeluarkan pendapat yang baik tetapi penyampaiannya kurang baik - Jarang bertanya saat pembelajaran berlangsung	- Jarang mengeluarkan pendapat - Jarang bertanya	- Tidak pernah mengeluarkan pendapat - Tidak pernah bertanya
3	Keseriusan peserta didik	Mendengarkan penjelasan dari guru dengan seksama	Mendengarkan penjelasan dari guru tapi sesekali bercanda	Terkadang mendengarkan penjelasan dari guru	Tidak begitu mendengarkan penjelasan dari banyak bercanda
4	Keterlibatan dalam kelas	Tertib dan tidak menimbulkan kegaduhan di dalam kelas	Tertib, tapi sesekali menimbulkan kegaduhan dalam kelas (1-3 kali)	Sering menimbulkan kegaduhan dalam kelas (3-5 kali)	Sering menimbulkan kegaduhan dalam kelas (> 5 kali)
5	Bertanggung jawab dan bisa bekerjasama dalam kelompok	Bertanggungjawab dan bisa bekerjasama dalam kelompok	Kurang bertanggungjawab tapi bisa bekerjasama dalam kelompok	Kurang bertanggungjawab dan kurang bisa bekerjasama dalam kelompok	Tidak bisa bertanggung jawab dan tidak bisa bekerjasama dalam kelompok
6	Penyelesaian tugas belajar	Lengkap, benar dan tepat waktu dalam pengumpulan	Lengkap, kurang benar dan tepat waktu dalam pengumpulan	Kurang lengkap, kurang benar dan tepat waktu dalam pengumpulan	Tidak lengkap dan terlambat dalam pengumpulan

Figure 3. Appendix 2 on Lesson Plan: Guidelines for Students' Affective Assessment

Lampiran 3 : Lembar Observasi Sikap Spiritual

LEMBAR OBSERVASI SIKAP SPIRITUAL

Nama Peserta Didik :

Kelas :

Tanggal Pengamatan :

Materi Pokok :

No	Nama Peserta didik	Aspek Penilaian				Jml skor	Nilai
		Berdoa sebelum dan sesudah melakukan sesuatu	Mengucapkan rasa syukur atas karunia Tuhan	Memberi salam sebelum dan sesudah menyampaikan pendapat/presentasi	Mengungkapkan kekaguman atas karunia Tuhan secara lisan/ tulisan		



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From the sample appendix above, the assessment rubric is only made for affective / attitude aspects, whereas for other aspects, the assessment rubric is not attached. After being analyzed again by the author, this does not only happen to one or two lesson plans but also occurs in each lesson plan in two semesters or equal to one school year. It indicates that during the teaching and learning process in one lesson, the subject did not use the rubric in assessing knowledge.

Analysis of Interview Results on the Scoring Rubric

Based on the results of interviews conducted by the author of the first subject (P-1) and second (P-2) obtained information about several things related to the assessment rubric. In terms of meaning, according to the P-1 assessment, a rubric is a mapping to give a score. Another opinion from P-2, assessment rubric means that the guidance is used to determine the score of completion of student work. Both subjects also agreed that the assessment rubric is an authentic assessment. That is according to P-2 by the meaning of authentic assessment that authentic assessment is a process of reporting and using information about student learning outcomes. Besides, the meaning of the assessment rubric, the two subjects also explained their opinions regarding the usefulness / benefits of the assessment rubric. According to P-1, the use of the assessment rubric is that the teacher can be more directed and consistent in giving

his assessment. On the other hand, P-2 said that the benefits of the rubric are very numerous. Besides the teacher being obedient to the administration, the teacher also has more strong guidelines in assessing students. With the assessment rubric, the teacher will more easily determine student scores. Therefore, in addition to compiling the instrument items, the teacher also needs to develop an assessment rubric. Based on the explanation given by the two subjects related to the meaning and benefits of the assessment rubric, the authors consider that the two participants outline already know and understand the assessment rubric. But there are unfortunate things from both subjects, where they are still infrequent to use the assessment rubric in the teaching and learning process. The impact is the use of the assessment rubric always not optimal. According to P-1, so far in teaching that he has done, the rubric of assessment is still rarely used. Even in the lesson plan, she used the knowledge assessment rubric that was not attached. P-1 claimed that the RPP was incomplete. That is because when the preparation of lesson plans in a hurry at the beginning of the year, then not immediately corrected. Furthermore, P-1 explained that when there is supervision or special training teachers usually like to have an assessment rubric; only for the lesson plan, it is not yet. That is an evaluation material for teachers and schools so they can continue to improve the quality of performance from time to time. Both



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subjects consider that rubric as an assessment tool in learning has disadvantages. P-1 said that the shortcomings of the rubric are more to the time that the teacher needs to prepare in making and compiling the rubric. P-2 also said the same thing that the losses of rubrics are time-constrained. According to P-2, SMK is more focused on productive learning. Time to study mathematics at the vocational school level is only four hours a week, while the material that must be completed during the two semesters is very much. So, the teacher is more focused on reinforcing the material being taught, because the material taught is sometimes not easily captured directly by students. Therefore, the use of the assessment rubric is somewhat hampered. Aside from being constrained by time, subjects still find it difficult to compile the assessment rubric itself. That is because they are not accustomed to making their assessment rubrics. During this time, they usually use the rubric assessment that has been there before. They see this problem as one of the obstacles to using the assessment rubric. Based on the results of interviews with both subjects, the rubric does not always form the basis for the two teachers to give grades to students. For P-1, the assessment given is usually also influenced by the results of observations made daily on the activities of attitude, behavior during the learning process at school. As for P-2, the assessment rubric is not used as a basis for assessing, but evaluate just according to the activities

that occur during learning and directly assessing per basic competency.

DISCUSSION

The Relationship Between the Results of Research with Theory

Based on the interview, the two subjects in this study already knew the meaning of the rubric. They understand that the rubric is a mapping to provide scores and also as a guide used in determining ratings against student work. That is consistent with the experts' opinion regarding the definition of the rubric of the assessment, which can be described as follows.

1. Brookhart (2013, p. 4) defines a rubric as a set of interrelated criteria and includes a description of the level of performance quality of these criteria which is useful as a guide for student work.
2. Greenstein (2012, p. 53) defines rubric as a scoring scale consisting of a set of criteria / indicators typically used to assess student performance.
3. The rubric is an assessment guide that describes the criteria that the teacher wants to assess or grade the results of student work (Sesanti&Ferdiani, 2015, p. 37).

Moreover, both participants already know the uses of the rubric as an assessment tool in learning. They say that by using the rubric, the teacher can be more directed and consistent in giving his assessment. Also, the teacher will be obedient to the administration, and the teacher has more



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strong guidelines in assessing students. As explained by Smit and Birri (2014) that work with rubrics helps students and teachers understand the competencies needed for national standards and is a means of providing useful feedback. Besides, the reasons for using rubrics as an alternative assessment tool are conveyed by Goodrich (1997) into five points as follows.

1. Rubrics are useful for making teacher expectations clearer.
2. Rubrics help students to be wiser in assessing the quality of their work or that of their friends / others.
3. Rubrics help teachers to assess student work more quickly.
4. The rubric provides the opportunity for the teacher to accommodate the diversity of classes.
5. The rubric makes it easy to explain student learning outcomes to parents / guardians of students.

Furthermore, Sesanti & Ferdiani (2015, p. 37) explain the purpose and function of making the rubric, namely:

1. so that teachers understand the basis of an assessment that will be used to measure a student's performance,
2. both parties (teacher and student) will have clear shared guidelines about the expected performance demands,
3. to help the teacher so that the assessment carried out remains focused on achievement, not on students,
4. a good rubric design allows students to see the requirements or rules to improve their performance.

5. through this rubric is also useful to encourage or motivate students in the learning process.
6. teachers can write their student progress reports by giving a score contained in the rubric.
7. With rubrics, the teacher can do the work faster because there is no need to write notes on each question or assignment.

Match or Conflict with the Research Results of Other Researchers

With so many explanations that have been explained by experts about the objectives, functions, or benefits obtained from the use of rubrics in the teaching and learning process assessment activities, it does not necessarily make the rubric an assessment tool used by teachers. The results showed that the assessment rubric is still very rarely used at the vocational high school level when conducting assessments, especially on aspects of knowledge. Though the aspect of knowledge is a complex aspect to be judged because of its many types, including: implicit or tacit knowledge, explicit knowledge, subjective knowledge, objective knowledge, declarative knowledge, procedural knowledge, rationale knowledge, synthetic knowledge, analytic knowledge, factual knowledge, inferential knowledge, and descriptive knowledge (Mungai and Dagada, 2012, p. 313–314). Therefore, the assessment rubric is a scoring guide that needs to be developed by the teacher when they want to carry out an



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assessment of learning outcomes (Kementerian Pendidikan dan Kebudayaan, Direktorat Jenderal Pendidikan Dasar dan Menengah, Direktorat Pembinaan Sekolah Menengah Kejuruan, 2015). Based on the results of the lesson plan analysis, the teacher only uses the assessment rubric for discussion activities on the attitude aspects and also the observation sheet. Judging from the theory explained by (Birgin & Baki, 2009, p. 682), the assessment method used by the teacher is the traditional assessment method (observation in the classroom, unit tests, essay type questions, homework). The reason behind teachers rarely use rubrics in conducting assessments is that teachers are not yet accustomed to using them. Teachers are still not familiar with authentic assessment, because many teachers do not understand what to assess from students who learn in authentic assessment (Sihombing, Jufrizal, and Anwar, 2017, p. 84; Birgin and Baki, 2009, p. 684). Therefore, it is important to get used to it. The results of research conducted by Gallego-Arrufat and Dandis (2014) also explain similar things that the use of rubrics in the assessment process is a new experience. Another factor that causes the use of rubrics is not optimal is the problem of time. The teacher thinks that he will need a lot of time if he wants to use the rubric. They need to prepare time to arrange the rubric to fit the goals to be achieved. On the other hand, the teacher feels that the material to be taught to students is not small with a variety of

abilities from each student. It causes the teacher difficulty in applying rubrics in the assessment. This result is in line with the opinion of Cooper and Gargan (2014, p. 55), the rubric can make more work. As a result, creating and using rubrics can be very burdensome for teachers who feel overwhelmed. It is one of the weaknesses of the rubric.

The Implications of the Research Result

The implication from the suboptimal use of rubrics among vocational high school teachers indicates that the assessment objectives set by the government in the assessment standards have not been fully achieved. Kementerian Pendidikan dan Kebudayaan, Direktorat Jenderal Pendidikan Dasar dan Menengah, Direktorat Pembinaan Sekolah Menengah Kejuruan (2015, p. 1) tells that the assessment standard aims to guarantee:

1. Planning assessment of students by the competencies to be achieved and based on the principles of assessment.
2. Conducting an assessment of students in a professional, open, educative, effective, efficient, and following the socio-cultural context.
3. Reporting the results of the assessment of students in an objective, accountable, and informative manner.

The results showed that teachers in vocational high schools still very infrequently inform the assessment guidelines to students. They are not accustomed to preparing the assessment



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guidelines in the form of rubrics (in writing and descriptive). Grading is usually based on the steps / process of achieving student completion; to what extent students can solve the problem. However, this tends to make the results of the assessment inconsistent, not objective, and ineffective. The reason is that the teacher does not have clear guidelines or instructions in giving grades to every possible answer displayed by students. On the other hand, Kementerian Pendidikan dan Kebudayaan, Direktorat Jenderal Pendidikan Dasar dan Menengah, Direktorat Pembinaan Sekolah Menengah Kejuruan (2015, p. 25) has explained that in developing assessment instruments, a teacher needs to develop scoring guidelines according to the form of questions used. The intended rubric criteria are as follows:

- a. Simple / covers the essential aspects to be assessed.
- b. Practical / easy to use.
- c. Effectively assess the elements to be measured.
- d. It can be used for assessment of daily processes and tasks.
- e. Students can learn the rubric and check the results of their assessment.

From the above, it can be said that, the government, through the Ministry of Education and Culture, has explained in detail the processes that need to be carried out by teachers in assessing activities. But, unfortunately, the implementation in schools related to this is

not optimal. This result could have an impact on the professional development of teachers. According to Brookhart (2011, p. 3), in the aspect of assessment of students there are seven standards of teacher competency: (1) the ability to choose an appropriate and appropriate assessment method in teaching, (2) the ability to develop an assessment method that is appropriate and appropriate in teaching, (3) ability in terms of administering, scoring, and interpreting results, (4) ability to use assessment results in making decisions about the achievement of each student, teaching planning, curriculum development, and improving school quality, (5) ability to make a valid rating on the assessment of student learning outcomes, (6) the ability to communicate the results of the assessment to students, parents / guardians, or other instructors, and (7) the ability to realize unethical, illegal, and various other actions that are not in accordance with the valuation method and the use of valuation information.

CONCLUSION

The conclusions obtained from this study are: (1) the use of knowledge assessment rubrics at the vocational level is still not well implemented and also not yet optimal. (2) the obstacles faced by teachers in the use of knowledge assessment rubrics, namely: a) teachers still find it difficult to make / arrange knowledge assessment rubrics, and b) teachers think that the process of creating or compiling knowledge assessment rubrics takes a lot of time.



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