INTERNATIONAL JOURNAL OF ACADEMIC RESEARCH IN PROGRESSIVE EDUCATION & DEVELOPMENT

OPEN ACCESS JOURNAL

Vol 11, Issue 2, (2022) E-ISSN: 2226-6348

Rubric Usage Knowledge for Group Assignment: An analysis of Vocational Colleges

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To Link this Article: http://dx.doi.org/10.6007/IJARPED/v11-i2/14110 DOI:10.6007/IJARPED/v11-i2/14110

Published Online: 16 June 2022

Abstract

Rubrics are tools used to measure student performance through group work. Instructors should know the use of rubrics to assess student assignments in groups. This study was conducted to identify the level of knowledge in rubric usage for group assignments among Vocational College instructors in the state of Johor, Malaysia. Differences in instructors' rubric usage knowledge for group assignments based on gender and the relationship between the knowledge and teaching experience were also studied. A total of 293 instructors were involved in this study. A quantitative approach using survey design was applied. The questionnaire containing 15 dichotomous items was administered using the google form application. Data were analysed using SPSS 23. Findings showed that instructors' knowledge of rubrics used in group work assessment is high. The level of knowledge in rubric usage for group assignments among the instructors was found to have a significant mean difference based on gender. It also has a significant relationship between the level of knowledge in rubric usage for group assignments and teaching experience. In summary, this study is expected to provide input to stakeholders in improving the existing alternative assessment practice in Vocational Colleges in Malaysia. Therefore, suggestions for improvement are given for the intervention.

Keywords: Rubric, Group Assignment, Alternative Assessment, Performance-based Assessment, Criterion-referenced Assessment

Introduction

In the face of today's changing globalisation, education shapes individuals' knowledge, skills, and personalities, which become the primary drivers of economic success, individual well-being, and community unity. Nevertheless, the skills gap continues to be high as in-demand skills across employment change over the next five years (World Economic Forum, 2020). Skills that will be employers' main focus by 2025 are critical thinking, problem-solving, and self-management skills such as active learning, resilience, stress tolerance, and flexibility. Thus, through the Vocational Technical Education and Training Division (VTETD), the Malaysian Ministry of Education has taken the initiative by implementing Outcome-Based Education (OBE). Soft skills (SS) are applied to produce competitive, competent and marketable graduates.

According to Bahri et al (2020), the implementation of OBE requires every academic program in Vocational Colleges (VC) to have Program Educational Outcomes (PEO). PEOs are statements that describe the educational outcomes that each student in an academic program must achieve after being in the world of work for between 3-5 years. PEOs were designed to meet the needs and expectations of stakeholders. There are nine graduate characteristics required; i) good personality, ii) good communication skills, iii) positive attitude, iv) good soft skills, v) practical skills, vi) good knowledge, vii) produce quality work, viii) problem-solving skills, and ix) demonstrate quality leadership skills. PEOs of VC in Malaysia has considered learning domains, including cognitive, psychomotor, and affective.

The implementation of OBE also proves that VC has taken the initiative to strengthen Alternative Assessment (AA) because it provides a broad picture of student learning experiences. AA provides opportunities for students to demonstrate the ability to reason and analyse, apply knowledge in new situations, demonstrate their understanding of the relationship between concepts, and communicate their knowledge in various ways (Ahmad et al., 2020). Most Higher Learning Institutions (HEI) in Malaysia are also seen to be more inclined to implement AA (Kaur et al., 2017) due to pedagogical and practical factors (Trytten, 2001). Thus, most HEI implements AA by assigning assignments that require students to work in groups. In addition, the needs of the current industry are in dire need of graduates who are capable of working in a team. Therefore, the instructors should play an essential role in developing students' ability to work in groups (Butt, 2018).

Using group work (GW) to support students' learning in educational settings requires instructors to assess and grade students' knowledge and skills (Forsell et al., 2020). Evaluating a group is a difficult task, and the instructor should have a clear idea of how they want to consider the group work (Burke, 2011). In addition, the instructor had used lack of methods and techniques to assess group assignments (Khuzwayo, 2018). Therefore, the instructor should use a rubric, which includes the criteria for judging the work and the student's mastery of the material (Finson & Ormsbee, 1998). Although rubrics have become popular in assessing various performance-based tasks, many instructors remain unaware of rubrics and their enormous benefits (Chowdury, 2019). Therefore, this study aims to identify the knowledge of rubrics usage for group assignments among VC instructors based on the following questions;

i. What is the rubric usage knowledge for group assignments among VC instructors?
ii. Is there any significant mean difference in rubric usage knowledge for group assignments among VC instructors based on gender?

iii. Is there any significant relationship between the rubric usage knowledge for group assignments and teaching experience among VC instructors?

Literature Review

Scholars and policymakers are increasingly agreeing that the higher education system should be supported to renew and reshape teaching and evaluation practices (McAleese et al., 2013). There has been a paradigm shift from traditional form assessment practices to AA assessment approaches (Ahmad et al., 2020). AA refers to types of evaluation that include a variety of tasks that require all learners to use higher-level thinking skills in real-life or authentic situations (Al Ruqeishi, 2015). Students giving each other feedback, students assessing their strengths and weaknesses, and groups discussing how they can work together are examples of AA (Yutaka, 2019). AA is also known as Performance-Based Assessment (PBA) based on the following criteria (Stevenson, 2001);

i. allow students to create their responses rather than selecting from a list of pre-made options.
ii. are criterion-referenced, or provide a standard against which a student's work is assessed rather than in comparison to other students
iii. focus on the problem-solving process rather than just getting the correct answer, and
iv. compel trained teachers or others to evaluate the assessments and ensure consistency across scorers carefully.

Thus, group assignment (GA) has added value to existing teaching methods in Higher Education (Cheng, Lam & Chan, 2008). GA is defined as students collaborating in a small enough group so that everyone can participate in an assigned learning task (Cohen & Lotan, 2014). GA provides students with simulated workplace projects that allow them to gain valuable teamwork experience and improve abilities such as communication and group skills (McCorkle et al., 1999). This approach also empowers cooperative learning (Sharan, 2010), where GA can help students develop a sense of "team" to support learning with each other (Peterson and Miller, 2004). As students work in groups, they know to share ideas and help each other build new knowledge (France and Kottke, 2013). Students learn by problem-solving and observation through collaborative activities (Onwuegbuzie, Collins & Jiao, 2009). GA also produce high-achieving students by storing information longer than individual assignments (Johnson and Johnson, 1986; Sobral, 1997). However, many benefits of GA are only possible when students communicate and collaborate (Gordon & Connor, 2001). Thus, GA needs to be well planned to be implemented effectively.

There are four stages of GA; getting started, teaching students, monitoring the group process and evaluation (Burke, 2011). First, the instructor must decide whether or not to include group work in the class. The syllabus should consist of group projects. The second stage entails teaching the students how to collaborate in groups. Instructors cannot assume that students understand how to collaborate, manage time, and delegate tasks. The instructor must be able to teach the students how to work collaboratively and effectively in groups. Then, it would lead to the third stage, which involves group monitoring. The final and most crucial step for the students is group evaluation. For grading the students, the instructor must create a concrete rubric. Rubrics are recommended because they help students focus their efforts, improve achievement, reduce grading time for the instructor, and improve the effectiveness of feedback (Stevens and Levi, 2013).

The rubric is a learning and assessment tool that articulates the expectations for assignments and performance tasks by listing criteria and describing levels of quality for each standard (Andrade, 2000; Arter & Chappuis, 2007; Stiggins, 2001). Rubrics must have four key components (Stevens & Levi, 2013);

i. a task description or descriptive title of the task students are expected to produce or perform;
ii. a scale (and scoring) that describes the level of mastery (e.g., exceed expectation, meets expectation, does not meet expectation);
iii. components/dimensions students are to attend to in completing the assignment/tasks (e.g., types of skills, knowledge, etc.); and
iv. description of the performance quality (performance descriptor) of the components/dimensions at each level of mastery.

In conclusion, AA is a form of assessment that is implemented continuously (formative) to assess the development of students from cognitive, psychomotor and affective aspects. GA is one of the AA techniques involving using rubrics to evaluate student performance where marks are given based on standards. GA is a PBA measured based on specific criteria and interpreted as a criterion-referenced assessment (CRA). Therefore, PBA requires students to demonstrate knowledge and skills, including how they solve problems. PBA measures skills such as integrating knowledge across disciplines, contributing to the work of a group, and developing a plan of action when confronted with a new situation (Project Appleseed, 2010).

Methodology

The study design is an action that shows in detail how a study is conducted (Sabitha, 2006). The study design is also characterised as a specific method to obtain the information needed to explain the study's objectives (Najib, 1999). A cross-sectional survey study design was applied in this study because data collection on one type of sample from the studied population was done only once based on existing respondent attributes (Malhotra, Sham, and Crsip, 1996). A total of 293 instructors from 10 VCs in the state of Johor were involved in this study. A survey containing 15 dichotomous items were distributed through the google form application. At the same time, the instructors attended the Rubric Development Course for GA organised by Segamat VC. The course was conducted online using a webex application following the Movement Control Order (MCO) enforcement, which is currently in force due to the spread of Covid-19.

Data analyses were performed using descriptive and inferential statistics. Descriptive statistics involving frequency, percentage, mean and standard deviation had been used to analyse instructors' demographics and the level of knowledge in rubric usage for GA. As shown in Table 1, the One-Kolmogorov-Smirnov test was conducted to ensure that gender and teaching experience data were normally distributed. So that the inferential statistics involving parametric analyses, i.e., independent t-test and Pearson correlation, could be conducted. The independent t-test was used to analyse the differences in the level of knowledge in rubric usage for GA among instructors based on gender. At the same time, Pearson correlation is used to identify the relationship between the level of knowledge in rubric usage among instructors with teaching experience.

Table 1
One-Sample Kolmogorov-Smirnov Test

		Gender	Teaching Experience
N		293	293
Normal Parameter[a,b]	Mean	1.64	1.89
	Std. Deviation	.480	.946
Most Extreme Differences	Absolute	.414	.290
	Positive	.268	.290
	Negative	-.414	-.187
Test Statistic		.414	.290
Asymp. Sig. (2-tailed)		.000[c]	.000[c]

a. Test distribution is normal.
b. Calculated from data
c. Lilliefors Significance Correction

Results

Demography

A total of 293 VC instructors were involved, with 105 (36.0%) males and 188 (64.0%) females. Almost part of the instructors, 136 (46.0%), have teaching experience between 1 and 10 years. The rest of the 67 (23.0%) have experience of 11 - 20 years, 77 (26.0%) have experience of 21 - 30 years, and 13 (5.0%) over 30 years. The analyses are shown in Table 2.

Table 2
Demographic of Samples

Demographic factor		Total	Per cent
Gender	Male	105	36.0
	Female	188	64.0
Teaching Experience	1 – 10 years	136	46.0
	11 – 20 years	67	23.0
	21 – 30 years	77	26.0
	More than 30 years	13	5.0
Total		293	

The Rubric Usage Knowledge for Group Assignments

The score range is between 33 to 100. A total of 158 (54%) instructors obtained scores between 33 to 67. While 135 (46%) instructors got scores 73 to 100. The number of instructors who scored lower than the mean value was higher.

Table 3
Instructors' Rubrics Usage Knowledge for Group Assignments

Score	Frequency	Per cent	Mean	Std. Deviation
33	1	0.3	69.2	10.6
40	2	0.7		
47	4	1.4		
53	24	8.2		
60	55	18.8		
67	72	24.6		
73	70	23.9		
80	35	11.9		
87	23	7.8		
93	6	2.0		
100	1	0.3		

Next, the mean value of the score was divided into five levels based on the procedure proposed by Best (1977) to interpret the level of knowledge in rubric usage for GA, as shown in Table 4. The overall mean obtained shows that the instructor's knowledge in rubric usage for GA is high (M = 69.2, SD = 10.6), as detailed in Table 5.

Table 4
Interpretation of the Level of Knowledge of Instructors

Mean Value	Interpretation
0 – 20	Very low
21 – 40	Low
41 – 60	Moderate
61 – 80	High
81 – 100	Very high

Table 5
Item Details Knowledge Level Instructors

No	Item	True		False	
		Total	%	Total	%
B1.	Learning achievement/performance for group assignments is measured based on three main domains, namely cognitive, affective and psychomotor.	**284**	**96.9**	9	3.1
B2.	Formative assessment is a method used to assess the learning progress of group assignments.	**204**	**69.6**	89	30.4
B3.	The concept of assessment and evaluation for group assignments differs only from the aspect of reporting.	194	66.2	**99**	**33.8**
B4.	Group assignment is a form of Alternative Assessment that has become a trend in Higher Education today due to its importance in Authentic Learning / Performance-Based Learning.	**274**	**93.5**	19	6.5
B5.	A rubric is a scoring tool for Alternative Assessment used to assess group assignments.	**245**	**83.6**	48	16.4
B6.	The anatomy of the rubric is composed of descriptors and performance standards.	268	91.5	**25**	**8.5**
B7.	The criteria of a rubric are determined based on the learning outcomes of the course /program.	**281**	**95.9**	12	4.1
B8.	A holistic rubric was used to assess each criterion separately.	212	72.4	**81**	**27.6**
B9.	Rubrics can be used in summative assessments only.	84	28.7	**209**	**71.3**
B10.	Each descriptor is constructed based on the principle of parallelism.	**235**	**80.2**	58	19.8
B11.	Homogeneity is an element in the descriptor that determines the accuracy of a measurement.	**270**	**92.2**	23	7.8
B12.	Rubrics for group assignments are developed based on processes/steps/procedures only.	131	44.7	**162**	**55.3**
B13.	Authentic assessment for group assignments is by using rubrics based on real-life situations as evaluation criteria.	**256**	**87.4**	37	12.6
B14.	The use of rubrics in the assessment of group assignments can add measurement errors.	159	54.3	**134**	**45.7**
B15.	The practice of group assignment assessment using rubrics is classified as standard-based assessment.	**281**	**95.9**	12	4.1

A total of 15 dichotomous items were administered to the respondents. A total of five items (B1, B4, B7, B11, B15) exceeded 90%, followed by three items (B5, B10, B13) exceeded 80%, only one item (B9) exceeded 70%, and also item (B2) exceeded 60 % instructor who answered the question correctly. Nevertheless, only 99 (33.8%) instructors answered

correctly for item B3. For item B6, only 25 (8.5%) and item B8, only 81 (27.6%) instructors answered correctly. For items B12 and B14, 131 (44.7%) and 159 (54.3%) instructors gave the wrong answers, respectively. The findings showed that the items answered correctly by almost all instructors gave a high mean score for the level of knowledge in rubric usage for GA. Most instructors are less sure about the concepts and aspects assessed in GA. The instructors were also unable to distinguish the type of rubric and less clear about the anatomy of the rubric.

Differences Rubric Usage Knowledge for GA based on Gender

Group statistics are shown in Table 6 in instructors' rubric usage knowledge for GA**.** The male instructors with a score value (M = 67.4, SD = 10.6) and females are 188 with a score value (M = 70.1, SD = 10.5). The mean value obtained shows that the level of knowledge of female instructors is higher than males. The mean of female instructors is higher than the average mean (69.2) of the level of knowledge, while the male instructors are lower. Next, Table 7 is referred to interpret the differences in the knowledge of instructors based on gender.

Table 6
Group Statistics

	Gender	N	Mean	Std. Deviation	Std. Error Mean
SCORE	Male	105	67.4	10.6	1.0
	Female	188	70.1	10.5	0.8

Table 7
Independent Samples Test

		Levene's Test Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
SCORE	Equal variances assumed	0.15	0.70	-2.09	291	0.04	-2.70	1.29	-5.23	-0.16
	Equal variances not assumed			-2.09	213.81	0.04	-2.70	1.29	-5.24	-0.15

The significance value for Levene's Test shown in Table 7 is 0.70 and larger than 0.05. Therefore, the value of equal variances assumed needs to be used with the value of Sig. (2 tailed) is 0.04 ($p < 0.05$). The result showed that there was a significant mean difference in scores for males (M = 67.44, SD = 10.63) as compared to females (M = 70.13, SD = 10.54; t (291) = -2.09, p = 0.04, two-tailed). This study also quantified the magnitude of the difference in the means of rubric usage knowledge based on gender by calculated eta squared using the information provided in output as follows;

Eta Squared = $\frac{t^2}{t^2+(N1+N2-2)}$

$$= \frac{(-2.09)(-2.09)}{(-2.09)(-2.09)+(105+188-2)}$$

= 0.01*

* The guideline proposed by Cohen (1988) for interpreting the value are;
0.01 = small effect
0.06 = moderate effect
0.14 = large effect

The magnitude of the differences in the means (mean difference = -2.70, 95% CI: –5.23 to - 0.16) was very small (eta squared = 0.01).

The Relationship between the Rubric Usage Knowledge for GA and Teaching Experience

The relationship between the instructor's knowledge in rubric usage for GA and the teaching experience was investigated using Pearson product-moment correlation coefficient, as shown in Table 8. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. Findings showed that p = 0.70, which is more than the p-value of 0.05. It meant that the null hypothesis was rejected. There was a weak and positive correlation between the two variables, r = 0.02, n = 293, p > 0.05.

Table 8
Correlations

		Teaching Experience	Knowledge in Rubric Usage for GA
Teaching Experience	Pearson Correlation	1	0.02
	Sig (2-tailed)		0.70
	N	293	293
Rubric Usage Knowledge	Pearson Correlation	0.02	1
	Sig (2-tailed)	0.70	
	N	293	293

Discussion

This study found that the knowledge in rubric usage for group assignments of the instructors as a whole is high. The mean score for female instructors is higher than males, and experienced instructors have better knowledge of rubric usage for GA. The findings informed instructors that assessment is part of the curriculum (Scarino, 2017) as AA is currently considered the universal assessment practice in fostering student learning (Green, 2017). Therefore, the instructors should understand and practice rubrics as standard tools to assess student performance, such as presentations, project assignments, and practicums (Tangkin, 2019). These findings provide insights that VC instructors should acquire and adapt the curriculum materials to meet instructional goals (Burkhauser and Lesaux, 2015).

Reflection on OBE in VCs aims to produce students with knowledge, skills and values. The following aspirations can be achieved by implementing PBA in teaching and learning using the GA method. It can be observed through alignment where curriculum, learning and teaching, and assessment are being practised constructively. The same goes for the rubric

usage in assessing GA. Previous studies stated that GA is a complex and challenging task (Frykedal & Chiriac, 2016). Hence, instructors' practice in grading assignments through GA is crucial in understanding its challenges (Forsell et al., 2021). AAs have been designed in VC to understand what a student can do rather than what they know. Therefore, the rubric used by VC instructors to measure proficiency concerning knowledge application should bring out students' ability through designated projects, portfolios, and all kinds of activities. The learning and assessment process should be reviewed using a rubric for grading purposes to complete a meaningful assigned task, demonstrate students' skills through demonstrations, and bring out the knowledge gained as the outcomes.

The findings of this study also provide helpful input to stakeholders, in particular VTETD. Ongoing training should be implemented for all instructors to improve pedagogical and assessment practices. In addition, guidance should be provided through coaching and mentoring, where experienced instructors will guide new instructors. Furthermore, data-driven instruction, using accurate measurements, appropriate assessments, and in-depth evaluation such as AA and rubrics usage should change the way the instructors view the functions of assessment. Instructors who clearly understand how and why these issues are essential will find these changes give them a better understanding of their students and better opportunities to help them achieve academic success.

Conclusion

In conclusion, this study has been conducted to identify knowledge in rubric usage for GA among instructors in VC. The findings help VC reflect on the PBA and AA practices. Similarly, improvements to the practices (PBA, AA, rubrics) should be taken action as Continuous Quality Improvement (CQI) to align with learning outcomes and compare common testing modalities. These changes necessitate implementing strategic support systems to engage students in the learning process. Hopefully, the findings of this study will inspire Vocational-Technical Education and Training Division to provide training in terms of quality teaching, best practice assessment, and professional support to the instructors. Placements of solid and competent instructors will help to ensure all VCs in Malaysia comply with the high-performance educational standards as prescribed by the Ministry of Education Malaysia.

References

Ahmad, S., Sultana, N., & Jamil, S. (2020). Behaviorism vs Constructivism: A Paradigm Shift from Traditional to Alternative Assessment Techniques. Journal of Applied Linguistics and Language Research Volume 7, Issue 2, 2020, pp. 19-33.

Al Ruqeishi, M. (2015). An evaluation of alternative assessment tools used in grades 5–8 of Omani Basic Education schools as perceived by EFL teachers. In R. Al-Mahrooqi & C. J. Denman (Eds.), Issues in English education in the Arab world (pp. 192–215). Newcastle upon Tyne, England: Cambridge Scholars.

Andrade, H. (2000). Using rubrics to promote thinking and learning. Educational Leadership 57, (5): 13–18.

Arter, J., and Chappuis, J. (2007). Creating and recognising quality rubrics. Upper Saddle River, NJ: Pearson/Merrill Prentice Hall.

Bahri, R., Sofhi, A. H., & Rasul, M. S. (2020). Amalan Pendidikan Berasaskan Hasil (OBE) di Kolej Vokasional. Persatuan Guru Vokasional dan Teknik Malaysia : Sungai Buloh, Selangor.

Best, J. W. (1977). Research in education. New Jersey: Prentice Hall.

Burke, A. (2011). Group Work: How to Use Groups Effectively. The Journal of Effective Teaching, Vol. 11, No. 2, 2011, 87-95.

Burkhauser, M. A., & Lesaux, N. K. (2015). *Exercising a bounded autonomy: novice and experienced teachers' adaptations to curriculum materials in an age of accountability. Journal of Curriculum Studies, (), 1–22.* doi:10.1080/00220272.2015.1088065.

Butt, A. (2018). Quantification of Influences on Student Perceptions of Group Work. Journal of University Teaching & Learning Practice, 15(5).

Cheng, W. Y., Lam, S. F., & Chan, C. Y. (2008). When high achievers and low achievers work in the same group: The roles of group heterogeneity and processes in project-based learning. British Journal of Educational Psychology 78(2): 205–21.

Chowdury, F. (2019). Application of Rubrics in the Classroom: A Vital Tool for Improvement in Assessment, Feedback and Learning. *International Education Studies*; Vol. 12, No. 1; 2019 ISSN 1913-9020 E-ISSN 1913-9039.

Cohen, E. G., & Lotan, R. A. (2014). Designing Groupwork: Strategies for the Heterogeneous Classroom. New York, NY: Teachers College Press.

Finson, K. D., & Ormsbee, C. K. (1998). Rubrics and their use in inclusive science. Intervention in School and Clinic, 34(2): pp. 79-88.

Forsell, J., Frykedal, F. K., & Chiriac, H. E. (2020). Group work assessment: assessing social skills at group level. Small-Group Research, 51(1), 87– 124. https://doi.org/10.1177/1046496419878269.

Forsell, J., Frykedal, F. K., & Chiriac, H. E. (2021). Teachers' perceived challenges in group work assessment, Cogent Education, 8:1, 1886474, DOI: 10.1080/2331186X.2021.1886474

Forslund Frykedal, K., & Hammar Chiriac, E. (2016). To make the unknown known: Assessment in group work among students. Journal of Educational Research, 2(2), 149–162.

French, K. A., & Kottke, J. L. (2013). Teamwork satisfaction: Exploring the multilevel interaction of teamwork interest and group extraversion. Active Learning in Higher Education 46(5): 536–75.

Gordon, R., & Connor, R. (2001). Team-based learning in management education. In D. Boud, R. Cohen, & J. Sampson (Eds.), Peer learning in higher education: Learning from & with each other (pp. 85–98). London: Kogan Page Limited.

Green, A. (2017). Learning-oriented language test preparation materials: a contradiction in terms? Papers in Language Testing and Assessment, 6(1), 112–132.

Johnson, R. T., & Johnson, D. W. (1986). Cooperative learning in the science classroom. Science and Children 24: 31–32.

Kaur, C., Singh, S., Of, V., & Scaffolding, T. (2017). Observation of classroom assessment practices among lecturers in selected Malaysian higher learning institutions. Malaysian Journal of Learning and Instruction, 14(1), 23-61.

Khuzwayo, M. E. (2018). Assessment of group work in initial teacher education and training. South African Journal of Education, 38. https://doi.org/org/10. 15700/saje.v38n2a1386.

Malhotra, N. K., Hall, J., Sham, M., & Crsip, M. (1996). Marketing Research: Applied Orientation (1st Edition). Sydney: Prentice-Hall.

McAleese, M., Bladh, A., Berger, V., Bode, C., Muelhfeit, J., Petrin, T., & Tsoukalis, L. (2013). Report to the European Commission on 'Improving the quality of teaching and learning in Europe's higher education institutions'. Brussels: Publications Office of the European Union.

McCorkle, D. E., Reardon, J., Alexander, J. F., Kling, N. D., Harris, R. C., & Iyer, R. V. (1999). Undergraduate marketing students, group projects, and teamwork: The good, the bad, and the ugly? Journal of Marketing Education, 21(2), 106-117.

Abdul Ghafar, M. N. (1999). Penyelidikan Pendidikan. Skudai, Johor: UTM.

Onwuegbuzie, A. J., Collins, K. M., & Jiao, Q. G. (2009) Performance of cooperative learning groups in a postgraduate education research methodology course: The role of social interdependence. Active Learning in Higher Education 10(3): 265–77.

Peterson, S. E., & Miller, J. A. (2004). Comparing the quality of students' experiences during cooperative learning and large-group instruction. The Journal of Educational Research 97(3): 123–34.

Project Appleseed. (2010). Performance-based assessment. Retrieved from http://www.projectappleseed.org/#!assessment/cwvf.

Sabitha Marican. (2006). Kaedah Penyelidikan Sains Sosial. Petaling Jaya, Selangor : Pearson Prentice-Hall.

Scarino, A. (2017). Developing assessment literacy of teachers of languages: a conceptual and interpretive challenge. *Papers in Language Testing and Assessment*, *6*(1), 18–40

Sharan, Y. (2010). Cooperative learning for academic and social gains: Valued pedagogy, problematic practice. European Journal of Education 45(2): 300–13.

Sobral, D. T. (1997). Improving learning skills: A self-help group approach. Higher Education 33(1): 39–50.

Stevens. D. D., & Levi, A. J. (2013). Introductions to Rubrics: An Assessment Tool to Save Grading Time, Convey Effective Feedback and Promote Student Learning. Sterling, Virginia: Stylus Publishing.

Stevenson, S. (2001). Performance-based assessment. Retrieved from http://people.cs.clemson.edu/~steve/CW/Info/performance.html.

Stiggins, R. J. (2001). Student-involved classroom assessment. 3rd ed. Upper Saddle River, NJ: Prentice-Hall.

Tangkin, W. P. (2019). Pemanfaatan Rubrik Sebagai Instrumen Penilaian Alternatif. Scholaria: Jurnal Pendidikan dan Kebudayaan, Vol. 9 No. 1, 29-39.

The Future of Jobs Report. (2020). World Economic Forum; October 2020.

Trytten, D. A. (2001). *Progressing from Small Group Work to Cooperative Learning: A Case Study from Computer Science*. Journal of Engineering Education, 90(1), 85–91.* doi:10.1002/j.2168-9830.2001.tb00572.

Yutaka, H. (2019). *[Springer Theses] Understanding the Enrichment of Heavy Elements by the Chemodynamical Evolution Models of Dwarf Galaxies: Alternative Assessment. , 10.1007/978-981-13-7884-3(Chapter 5), 61–74.* doi:10.1007/978-981-13-7213-1_5.