



An Observation on Implementation of Classroom Assessment in Technical and Vocational Education and Training (TVET) Subject Area

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Abstract: Classroom assessment is continuously assessment throughout the teaching and learning process and used in totally in every subjects. Assessment is designed to provide the understanding and help school administrators and teachers in performing assessment process in order to obtain the feedback on students learning development and pedagogical effectiveness. However, there been an issue of assessment that faced by teachers which is the lack of training and skills in techniques that effect the level of confidence in implementation of school based assessment. Therefore, this study aims to identify the problems faced by teachers in implementing classroom assessment for one of the Technical and Vocational Education and Training (TVET) subject area which is Design and Technology. Respondents comprised of 26 teachers were randomly selected from 15 secondary schools in Johor. Descriptive studies of qualitative research were selected to get an idea on experiences and the data would be segmented according to the coding scheme using thematic analysis methods. The results showed that the major problem in management of classroom assessment processes faced by teachers were on insufficient resources. Besides, the analysis results also shows that other main difficulties in conducting the classroom evaluation process is on student performance and in the process of classroom assessment were on time management. Whereas, the resources used by teachers to help students in the classroom assessment process emphasizing on the use of digital resources. Thus, it can be concluded that the classroom assessment process implemented by the teacher has not yet achieved the goals set by the Ministry of Education (MOE) and teachers need more resources to implement classroom assessment process in order to achieve the outcome of the learning.

Keywords: Classroom assessment, Technical and Vocational Education and Training (TVET), Design and Technology Subject

1. Introduction

School-Based Assessment (SBA) was first introduced in Hong Kong as the Teacher Assessment Scheme and a study have been conducted on learning systems that depend on the examination-oriented only (Yip & Cheung, 2005). Based on previous studies by Deluca et al., (2016), the Approaches to Classroom Assessment Inventory (ACAI) instrument has been developed to illustrate patterns in teachers' approaches to classroom assessment. ACAI was developed based on a new classroom assessment standard published by the Joint Committee for Standard on Evaluation (JCSEE, 2015). According to Yin and Gayle (2019), in the United States, the implementation of the school accountability assessment that based on this test has been used for a long time such as Improving America's Schools in 1994, No Child Left Behind in 2002 and Every Student Succeeds Act in 2015 using summative or formative assessment instruments. In contrast, SBA has been operating in Malaysia since 2011 for primary school and 2012 for a secondary school based on the design in State Educational Transformation to achieve the aspirations of the National Education Philosophy (Hashim & Harun, 2014).

SBA is assigned to educators in developing a holistic human capital by emphasizing the acquisition of knowledge, intellectual capital, culture and practice of values, ethics and high morals. The purpose of SBA being implemented is to monitor development, to get an overview on potential and help in improving the learning of everyone (Examination Board of the Ministry of Education Malaysia, 2012). Then, in 2016, school assessment which is one of the SBA elements have been changed and known as classroom assessment which is divided into two parts: formative and summative assessment by maintaining all the concepts from school assessment. Classroom assessment is an ongoing assessment of teaching and learning sessions by gaining information on student development, progress, ability and achievement (Ministry of Education, 2018). Besides, it is also formative by prioritizes the progress of each student and helps teachers make diagnostics to track the progress of their students' learning over time and to plan modifications to their teaching methods. Classroom assessment that been carried out by teachers contains critical aspect, which is more important, challenging and complicated (Metin, 2013). However, for teachers who have the knowledge and skills, it certainly can govern them by integrating the classroom assessment continuously in their teaching and learning process to support student understanding (Birenbaum et al., 2015). Classroom assessments tend not to compare student mastery but to aid in the development of student learning and to help teachers improve their teaching.

The implementation of SBA in Hong Kong has raised some issues alleged that the assessment process as an additional job among the teachers, lack of expertise in assessment errands, time-consuming tasks and pressures among students through assessment that needs to be done (Yip & Cheung, 2005). Meanwhile, in Canada, United Kingdom and the United States the rise of the accountability paradigm has placed pressure on classroom teachers, specifically through the growing prominence of academic standards and assessment of student achievement (Nichols & Harris, 2016). The same situation also occurred in the United States when there is a difference instruction with the content standards assessment that stretch difficulty among teachers at school to complete the assessment process (Lee, 2005). However, in Australia, the teachers were assigned as integral assessors to improve student learning in the education system (Klenowski, 2013). Therefore, teachers will be able to see their students' progress (Wong et al., 2018).

Othman (2019) stated that teachers do not understand the purpose of the assessment process which can facilitate and track students' progress and performance. Besides, the 2013-2025 PPPM report found that teachers still do not understand and fully control the implementation of SBA, until they face difficulties in preparing tasks and assessment instruments for their school (Ministry of Education, 2013). Therefore, teachers need to take action by acquiring sufficient knowledge and being willing to develop their own instrument, set the level of control and be able to interpret the test scores (Lim et al., 2014). Moreover, Said, Haron and Surat (2018) stated that the classroom assessment process has been the most critical aspect for teachers at the moment. This is supported by Metin (2013), which stated that assessment is an important task, complicated and challenging process faced by teachers.

Assessment issues in Malaysia were still focusing on exam-oriented that emphasized teachers to teach as preparation for the examination and thus focusing on student achievement in reaching the final grade (Zamri, Nasyimah & Wan, 2015). Thus, the assessment process will be affected when the teacher has no passion in assessing their students' progress. It is supported by Ibrahim et al., (2020) and Tan (2010) that stated lack of supervision and monitoring from the administration has made teachers feel lukewarm and inconsiderate in doing the assessment process. Therefore, observation throughout the assessment process in the classroom needs to be implemented using valid assessment standards by the teacher which are also suitable with the student's knowledge level. The assessment process can be integrated within the process of teaching and learning, either in terms of formative or summative assessment or through students' personalities that have been generated.

The learning process at school seems to be contrary to the National Education Philosophy aspiration. In other words, this phenomenon has led most teachers to focus on teaching and learning in the classroom that emphasis on examination based rather than achieving the objectives in the syllabus (Khan, Mohd, Abd Aziz, M & Stapa, 2019). Essentially, there is also the possibility that the teachers do not realize through the assessment process will have an impact on the teaching-learning process, particularly, their motivation and purpose for learning (Nimehchisalem, Kai & Nowrouzi, 2019). In addition, it seems that teachers still lack skills in classroom assessment evaluation techniques (Duraismy et al., 2019). This is because of the lack of training for teachers, thus affecting their confidence level to carry out the classroom assessment process. Therefore, teachers need knowledge, skills and adequate training to perform these classroom

assessment process in order to achieve the goals of the new education system. This matter should be highlighted because classroom assessment is the main connection between teachers' reactions to students.

Technical and Vocational Education and Training (TVET) has expanded rapidly that include computer technology, culinary arts, graphic design, healthcare, mechanics, tourism and so forth to provide skills aimed at propelling the country to produce 1.3 million skilled workers by 2020 (Ministry of Higher Education, 2017). To develop productive capabilities, TVET should develop individuals in three domains: the knowledge base of practice, the technical base of practice, and the attributes the person needs for their occupation (Moodie, Wheelahan & Lavigne, 2019). Therefore, it is important to conduct research on how TVET practitioners' knowledge is constructed and can influence the level of student performance from different intellectual levels either low, intermediate, or high should be endeavour as it will be beneficial for the future of teaching and learning process (Hashim et. al, 2019).

However, TVET teachers seem lack the skills to instruct students effectively as they are certified as experts in their respective fields. Their lesson preparation and ability to design instruction are issues of great concern among students (Lam & Hassan, 2019). Therefore, this study should be carried out as an effort towards identifying problems faced by teachers during the implementation of the classroom assessment process especially in the TVET subject area which is Design and Technology. Therefore, the aim of this study is to identify teachers' problems in handling classroom assessment processes in general, difficulties in conducting the classroom evaluation process, difficulties in the process of classroom assessment and classify resources used by teachers to help students in the classroom assessment process. In this research, classroom assessment is an ongoing assessment of teaching and learning sessions to get information on student development, progress, ability and achievement in the TVET subject area in a secondary school which is Design and Technology.

2.0 Methodology

This study uses a qualitative research design which is best suited for research problems that do not know the variables and need to explore the depth, richness, and complexity inherent about a phenomenon. Hence, a case study approach was adopted to this research due to the participants were identified according to class, school, community, and specific policy. A case study approach also put more emphasis on the full analysis of a limited number of events or circumstances and the relations among them (Elkatawneh, 2016). An interview was conducted towards 26 participants who are teachers that been selected based on their knowledge on teaching Design and Technology subject. The interview was selected as it was useful to obtain detailed information regarding personal feelings, perceptions and opinions.

2.1 Selection of Interview Participants

This case study approach used purposeful sampling which the researchers intentionally select individuals and sites to learn or understand the central phenomenon (Creswell, 2005). This method is used to get information on teachers' problems in handling classroom assessment processes. The participants of this study were based on regional clusters found in the map of Johor which is Johor Bahru, Mersing, Pontian, Segamat and Kluang (PPSJ 2016-2020, 2018) while for secondary school selection were based on the school administration responsibility centre.

A total of 26 teachers who are experts in teaching Design and Technology subject are selected from 15 schools within areas of the population. In addition, the participants were also determined based on the acquisition of knowledge and experiences in classroom assessment within Design and Technology subjects. Saturation is the point at which the data collection process is no longer offering any new data or related (Mason, 2010). Hence, according to Dworkin (2012) stated that 25 to 30 participants were needed as a minimum sample required to reach saturation and redundancy. Thus, this research collecting data by interviewing participants that represent different constituents and use it to develop a description and themes. Table 1 displays the study participants involved in this research.

Table 1 - Table of study participants

District	Total	Study Participants
Johor Bahru	6	Teachers who teach Design and Technology subject with knowledge and experience in classroom assessment.
Mersing	5	
Pontian	5	
Segamat	5	
Kluang	5	

2.2 Interviews

A set of interview protocols has been developed for data collection to record information during interviews session. The interview consisting of seven open-ended questions generated based on research questions so that the participants can give the best voice of their experiences unconstrained by any perspectives. One-on-one interviews were done towards the participants. One-on-one interviews are choosing due to this approach is popular in educational research and the researcher can ask questions to and records answers from only one participant in the study at a time (Creswell, 2015). The main purpose is to explore participants' understanding on teachers' problems in handling classroom assessment

processes in general, difficulties in conducting the classroom evaluation process, difficulties in the process of classroom assessment and classify resources used by teachers to help students in the classroom assessment process.

2.3 Data Analysis

Data were thematically analysed according to a category based on each of the questions answered by the participants. At an early stage in qualitative analysis, the data organized into file folders and computer files. Then, the transcription process was done where all recordings audiotape was converted into text data. A pre-coding was followed by classifying each participant’s statement into a particular code, then developing a matrix table were used to reduce the themes. A frequency analysis was used to determine reliable information and a suitable coding scheme have been formed through content analysis and the frequency of words or themes rose by the repetition of classroom assessment process problems raised by many respondents then been calculated. Besides, inter-rater reliability have been used for the reproducibility or consistency of decisions between two reviewers and is a necessary component of validity.

3. Result

Based on the raw data obtained, each category will be classified according to the theme arrangement code generated by the researcher. There are several classifications of themes that have been categorized according to the four main interview questions that have been given to the respondents. The first question related to the teachers’ problems in handling classroom assessment processes in general. Table 2 shows the results of these study that been divided into three thematic categories which are insufficient resources, unsuitable assessment, and low levels of student assessment.

Table 2 - Teachers’ problems in handling classroom assessment processes in general

No.	Theme	Frequency of Encoding Scheme	Number of Samples
1.	Insufficient resources	55	20
2.	Unsuitable assessment	36	19
3.	Low levels of student assessment	23	11

The main teachers’ problem in handling classroom assessment processes in general identified due to insufficient resources with 55 frequency coding schemes we re recorded from 20 samples. One of the problems that exist is when the training courses that have been provided doesn’t cover on topics that teachers should teach. The text of respondents’ answers to the theme of insufficient resources were as follows:

"Besides ... the teachers are following the training course called, but the content of the course are still not enough." (Instructor 3)

Next, the problem on unsuitable assessments were also identified with 36 frequency coding schemes from the 19 samples. One of the hitches with this theme is that the course provided does not direct to the topics that the teacher should teach. The text of respondents’ answers to the theme of unsuitable assessments were as follows:

"It's not for the students only, teachers are still learning because we are from different fields." (Instructor 22).

Other problem that been identify were on low levels of student assessment with 23 frequency coding schemes out of 11 samples. Teachers need to provide more information to weak students, especially from the lower class. The text of respondents' answers to the theme of low levels of student assessment were as follows:

"But for the weaker students, we have this problem so many times. When this happened, I have to repeat the information many times and I have to ask them about it." (Instructor 12).

Meanwhile, for the objective on difficulties in conducting the classroom evaluation process, the interview question were divided into two which is about teachers thought on classroom evaluation and the issues that arise among the respondents in conducting the classroom evaluation process. Table 3 is the results of the study to identify the teachers thought on classroom evaluation while table 4 shows the resulted of the difficulties in the classroom evaluation process.

Table 3 - Teachers thought on classroom evaluation

No.	Theme	Frequency of Encoding Scheme	Number of Samples
1.	Evaluate students	12	11
2.	Planned assessment	11	8
3.	Assessing the development level of student	3	3

The results of the study found that there were three classifications theme that been interpreted on respondents thought on classroom evaluation. First on the matter of evaluating students with 12 frequency coding schemes recorded from 11 samples. The most teacher will evaluate the students after each of the learning topics have been completed. Next, on the matter of planned assessment with 11 frequency coding schemes from 8 samples that state teachers' sanction about assessment process on students can't be given at early stage. This is because these students will learn reliant on their environment and communication with a classmate. Then, on the issue of assessing the developmental level of students with 3 frequency coding schemes recorded from 3 samples. It has been identified that the evaluation process was based on the development of students' knowledge and skills and according to the teacher's own planning.

Table 4 - Difficulties in the classroom evaluation process

No.	Theme	Frequency of Encoding Scheme	Number of Samples
1.	Student performance	15	12
2.	Teacher management	11	9
3.	Level of student understanding	8	7

Table 4 shows the results of study difficulties in conducting the classroom evaluation process with three main problems which is student performance, teacher management and students' level of understanding during the classroom assessment process. The main difficulties in conducting the classroom evaluation process identified was student performance with 15 frequency coding schemes recorded from 12 samples. The results showed that the student from bottom class have difficulties to understand explanation given and expected every information been given by the teacher. The text of respondents' answers within the themes of student achievement as follows:

"Teaching weak class is quite difficult because students do not understand on instructions that been given. We have to figure out what the problems is and find the best method to help them understand. But still, they are not good enough to gather the information." (Instructor 5).

Then, the problem on teacher management also been identified with 11 frequencies of coding schemes out of the 9 samples. It seems that teachers faced difficulties in time constraints in the classroom. This were followed by the problems with the student's understanding that occurred with 8 frequencies coding schemes from 7 samples. Based on the interview, students could not gather the information within band three to band six.

Next, on the objective of difficulties in the process of classroom assessment, the interview question also divided into two which is about teachers thought on classroom assessment and the issues that arise among the respondents in the process of classroom assessment. Table 5 shows the result of the study to identify the teachers thought on classroom assessment and table 6 shows the resulted of the difficulties in the process of classroom assessment.

Table 5 - Teachers thought on classroom assessment

No.	Theme	Frequency of Encoding Scheme	Number of Samples
1.	Strategies use for students in the classroom	11	11
2.	Assessment based on learning standards	4	4
3.	Teachers monitoring	3	3

The results of the study found that there were three classifications theme that been interpreted on respondents thought on classroom evaluation. First on the matter of strategies used for students in the classroom with 11 frequency coding schemes recorded from 11 samples. Most teachers have planned the assessment process for student's by spreading the classroom activities through quizzes and assignments before their scores been be recorded by the teacher. Next, on the matter of assessment based on learning standards with 4 frequency coding schemes out of 4 samples that state the assessment implemented by teachers on the topic is based on student's lesson in the classroom. Then, on the issue of

teacher monitoring with 3 frequency coding schemes recorded from 3 samples. It has been identified that teachers will be able to see whether the students were balance in terms of intelligence and personality.

Table 6 - Difficulties in the process of classroom assessment

No.	Theme	Frequency of Encoding Scheme	Number of Samples
1.	Time management	11	10
2.	Student behaviour	17	9
3.	Unable to reach certain level	9	8

Table 6 shows the results of study difficulties in the process of classroom assessment with three main problems which is time management, student behaviour and mismatched curriculum during the classroom assessment process. The main difficulties in the process of classroom assessment identified were time management with 11 frequency coding schemes recorded from 10 samples. The results showed most respondents stated that they could not wait for students to understand everything because they need to finish the syllabus according to time. The text of respondents' answers within the themes of student achievement as follows:

"We have to follow the plans that been made. If I have to wait until the student understands ... that won't be enough time to finish the syllabus." (Instructor 25).

Furthermore, the problem of student behaviour also been identified with 17 frequency coding schemes out of 9 samples. It seems that students often expected answers from teachers and are not interested in exploring it based on their own knowledge. This were followed by the issue with students who unable to reach a certain level with 9 frequency coding schemes from 8 sample. Based on the interview, the students could not create ideas on High Order Thinking Skills (HOTS) questions in their subjects.

Finally, on the objective of classifying resources used by teachers to help students in the classroom assessment process, the interview questions have been divided into two which is about teachers thought on the sources/materials used to assist students and the issues that arise on resources used by teachers to help students in the classroom assessment process. Table 7 shows the result of the study to identify the teachers thought on the sources/materials used to assist students and Table 6 shows the resulted-on resources used by teachers to help students in the classroom assessment process.

Table 7 - Teachers thought on the sources/materials used to assist students

No.	Theme	Frequency of Encoding Scheme	Number of Samples
1.	Teacher and student needs	8	7
2.	Easy to use	6	6
3.	Sources provided by the school	5	5

The results of the study found that there were three classifications theme that been interpreted on respondents thought on the sources/materials used to assist students. First on the matter of based on teacher and student needs with 8 frequencies coding schemes recorded from 7 samples. Most teachers thought that the resources/materials used have helped them smoothing their teaching process. Next, on the matter of easy to use with 6 frequency coding schemes from 6 sample persons that state these resources play an important role for teachers to use in their teaching and learning process. Then, on the issue of sources provided by the school with 5 frequencies coding schemes out of 5 samples. It has been identified that most schools have provided teaching aids resources but the amount of these resources is very limited.

Table 8 - Resources used by teachers to help students in the classroom assessment process

No.	Theme	Frequency of Encoding Scheme	Number of Samples
1.	Digital sources	19	11
2.	Printed sources	10	6
3.	Financial source	5	5

Table 7 shows the findings of the study which found that there are three categorical themes of resource use/materials that have been categorized as digital sources, printed and financial resources used in the classroom assessment process. The main source used by most respondents was a digital source with 19 frequency coding schemes recorded from 11 samples. Among them are Arduino, electrical and electronic, mobile phones and toy control cars. The following is the text of respondents' responses to digital source themes:

"... like Form 2 students, we teach them electronic topics where these students need to buy materials, like control cars for them to modify." (Instructor 15).

In addition, the issue on printed sources has also been identified with 10 frequencies coding schemes from 6 samples. It seems that these respondents have their own teaching guided handbook for the subject that they teach. This were followed by the issue on financial sources that occurred with 5 frequencies coding schemes out of 5 samples. Based on the interview, teachers receive financial resources from schools and donations from parents to buy teaching materials, while also helping students who cannot afford to buy their own tools.

4.0 Discussion

The findings of the study show that inadequate resources were the major problem for the implementation of classroom assessment. Therefore, teachers must find an initiative through courses outside school to gain extra knowledge on assessment or purchasing learning materials at high prices. According to From, (2017) through the knowledge and skills acquired by these teachers, improvements can be made in their teaching and learning process. Besides, teaching and assessment practices can further enhance the needs within the learning environment through the skills that the teacher possesses further increases student achievement (Wang, 2016).

In addition, the problem on indecorous assessment was also faced by teachers who did not have good knowledge about the new subject. According to Omar, Zahar & Rashid (2020), teachers should understand, dominate and be proficient about the subject to teach students in line with the second ordinary of the Malaysian Teacher Standards. Moreover, problems occur in the student evaluation process when they do not have solid knowledge during primary school, especially students from the weaker classes. Therefore, the teacher not only imparts on knowledge but also act as a facilitator in learning towards increasing students' knowledge (Rahman, 2010).

The study also identified that the main difficulties in conducting the classroom evaluation process were due to student performance because they could not complete the task that had been given by the teacher. This issue occurs when they could not understand on the instruction given by their teacher. Andrade & Brookhart (2020) founded that the process of the assessment conducted on the student, it will give them a sense of responsibility in performing the task given and they will be concentrating more on the teaching and learning process in the classroom. In addition, this allows students to understand their purpose of learning and realize what they need to do to in achieving the learning objective.

Classroom lessons should be run smoothly without disruptive behaviour from students compromising the delivery of instruction. However, there will never be enough time in the day to accomplish the multitude of tasks that come with being a teacher as they will always operate under time constraints. Royo & Fun (2010) pointed out that the time constraints produce the highest level of job stress for many educators compared to other factors. Different levels of student understanding occur because they can choose where they need to start based on their own levels of understanding. Some may start with the basic practice and work through proficiency while others may start with proficiency and work their way through advanced. Therefore, the teacher needs to realize the students' level of understanding first before they can make the decision on the topic that has been explain (Stephanie et al., 2018).

Furthermore, the difficulties in the process of classroom assessment happened when most of the respondents facing time management issues as they don't have enough time to monitor their student's assignments. According to Guskey (2003), assessments that been designed to rank are generally ineffective in helping teachers improve student teaching due to time constraints. The lack of planning time and instructional time, compounded with students' lack of schema, hampered the delivery of engaging and relevant lessons in the classroom.

In addition, teachers will always face student's behaviour problems on their willingness to learn. This statement is supported by Moktar et al., (2018) who state that teachers are critical factors in teaching and learning as students' readiness rely heavily on them to provide greater understanding and appreciation to the subject. Teachers usually filter the curriculum through their own cultural experiences and to teach in much the same way they were taught and seems not suitable in the classroom assessment process as the students were unable to generate ideas through it. This is also supported by Stephanie et al., (2018) who state that when students were asked a quiz question on a new topic, they could not understand the topic and it was evident on students with a lack of knowledge.

The main resource used by teachers to help students in the classroom assessment process was digital resources as teachers may find it useful when attempting to implement technology into their classrooms. According to Mertel (2020), the use of technology can serve as one of the mediums in the teaching approach for students and thus provide the space and chances for students to deeply explore the information.

Printed resources is still the most effective learning medium for many teachers and students as it offers a quiet space away from online distractions and enables them to better focus and absorb what they're reading. The use of modules as printed resources has been effective in improving student learning outcomes as their use must be adjusted to the

characteristics of students (Rahmawati, Lestari & Umam, 2019). School districts frequently are tied to an incredibly limited budget on printer resources and teachers will often take on the financial burden of buying printer ink out of their own pockets. Kaiser et al., (2020) stated that the high financial costs have become the main constraints factor in providing complete equipment and facilities for the learning process. Bringing down these costs will give teachers more room in their budget to get the kinds of things that take their teaching to the next level.

5. Conclusion

Overall, this study has discussed in detail on the problems faced by the teachers during the implementation of the classroom assessment process for Design and Technology subjects focusing on four issues: general problems, assessment, evaluation, and resources used. The results of this study show that the implementation of the classroom assessment process among teachers has not been fully achieved. This is because the teachers' acceptance of the Design and Technology subject is in moderate condition and they have not fully grasped the entire syllabus of this subject. This proves that the implementation of the classroom assessment process can still be enhanced or improved within the needs and challenges faced in the Technical and Vocational Education and Training (TVET) sectors.

Most respondents agree that the main problems with the classroom assessment process are on the resources needed by the teachers and the students were often inadequate and they rely solely on learning the theory from the textbook. However, the concept of learning is easier to understand with the implementation of practical work but requires high financial allocations for each of the materials such as electricity and electronics. Indirectly the implementation of the assessment and evaluation process in the classroom can't be implemented by these teachers because of insufficient resources. Thus, this prevents the teachers from achieving the Ministry of Education goals in raising student achievement in the future.

Thus, this study fictitious as a hope of the teachers who looking forward to the efforts in the improvements that will be done and is being done by the Malaysian Ministry of Education in addressing this issue. Indeed, teachers feel that the burden they have to bear is very heavy where a lot of work has to be done compared to the previous system. Improvements as promised by the ministry to teachers in making the SBA system better must be done immediately so that the burden of teachers can be overcome immediately.

The implementation of the SBA system is not viewed negatively, it just looks negative because the system is less encouraging, causing many teachers to be angry because a lot of their time is interrupted. The action to be taken by the Malaysian Ministry of Education is to ensure that each element of the implementation of the SBA can provide a holistic interpretation of students and at the same time can reduce the workload of teachers who implement it.

Finally, to ensure the effectiveness of classroom assessment process implementation, everyone need to play their part, especially the Ministry of Education, teachers, and students. These classroom assessments can have a significant impact on learning, especially in Design and Technology subjects. The application of human capabilities to TVET as productive capabilities which are located in and concentrate on an intermediate specialized level, the vocational stream which links occupations that share common practices, knowledge, skills and personal attributes

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References

- Andrade, H. L., & Brookhart, S. M. (2020). Classroom assessment as the co-regulation of learning. *Assessment in Education: Principles, Policy & Practice*, 27(4), 350-372
- Birenbaum, M., DeLuca, C., Earl, L., Heritage, M., Klenowski, V., Looney, A., Smith, K., Timperley, H., Volante, L., & Wyatt-Smith, C. (2015). *International trends in the implementation of assessment for learning: implications for policy and practice*. *Policy Futures in Education*, 13, 117–140. doi/pdf/10.1177/1478210314566733
- Brown, & L. R. Harris (Eds.), *Handbook of human and social conditions in assessment* (pp. 4e56)
- Creswell, J. W. (2015). *Educational Research. Planning, Conducting, and Evaluating Quantitative and Qualitative Research. 2nd Edition*: Pearson Education New Jersey
- Curriculum Development Ministry of Education Malaysia (2018). Classroom Assessment Implementation Guide. <https://www.moe.gov.my/en/soalan-lazim-menu/kurikulum/kurikulum>
- DeLuca, C., LaPointe-McEwan, D., & Luhanga, U. (2016). Approaches to classroom assessment inventory: a new instrument to support teacher assessment literacy. *Educational Assessment*, 21(4), 251–272. doi.org/10.1080/10627197.2016.1236677

- Duraisamy, P., Van Haneghan, J., Blackwell, W., Jackson, S., Murugesan, G., & Tamilselvan, K. S. (2019, May). Classroom engagement evaluation using computer vision techniques. In *Pattern Recognition and Tracking XXX* (Vol. 10995, p. 109950R). International Society for Optics and Photonics
- Dworkin, S. L. (2012). "Sample Size Policy for Qualitative Studies Using In-Depth Interviews." *Archives of Sexual Behavior* 41(6): 1319–20
- Elkatawneh, H., (2016). The Five Qualitative Approaches: Problem, Purpose, and Questions/The Role of Theory in the Five Qualitative Approaches/Comparative Case Study. 1-18
- Examination Board of the Ministry of Education Malaysia (2012). The Concept of School -Based Assessment. Retrieved September 12, 2013 from <http://www.moe.gov.my/lp/files/faq/FAQ%20PBS%202013.pdf>
- From, J. (2017). Pedagogical Digital Competence--Between Values, Knowledge and Skills. *Higher Education Studies*, 7(2), 43-50
- Guskey, T. R. (2003). How classroom assessments improve learning. *Educational Leadership* 60(5), 6-11
- Hashim, S., & Harun, J. (2014, October). CSCL learning approach for students' knowledge construction process in School Based Assessment (SBA) environment: An observation. In *2014 IEEE Conference on Open Systems (ICOS)* (pp. 139-144). IEEE
- Hashim, S., Utami, P., Rahman, M. H. A., Jumaat, N. F., & Phon, D. N. E. (2019). Knowledge Construction Process In An Open Learning System Among Technical And Vocational Education And Training (Tvet) Practitioners. *Journal of Technical Education and Training*, 11(1)
- Ibrahim, B. B., Mohamad, N. H. B., Aziz, A. B. A., Kadir, M. B., & Hamid, Z. B. A. (2020). A Look at Grit: A Study towards Malaysian Technical Instructors Performance Retention. *International Journal of Psychosocial Rehabilitation*, 24(1)
- Johor Strategic Growth Plan (PPSJ) 2016-2020. (2018). Retrieved from <http://ppsj.johor.gov.my/pelan-ppsj-2016-2020/dokumen-pelan-pertumbuhan-strategik-daerah>
- Kaiser, T., Lusardi, A., Menkhoff, L., & Urban, C. J. (2020). *Financial education affects financial knowledge and downstream behaviors* (No. w27057). National Bureau of Economic Research
- Kasim, A. Y. (2011). *Pengetahuan pedagogikal kandungan (PPK) pengajaran akidah guru cemerlang Pendidikan Islam: Satu Kajian Kes* [Content pedagogical knowledge of Aqidah teaching of outstanding teachers of Islamic Education: A Case Study]. Tesis Dr. Fal, Universiti Kebangsaan Malaysia
- Khan, A., Mohd, A. B., Abd Aziz, M. S., & Stapa, S. H. (2019). Examining the Factors Mediating the Intended Washback of the English Language school-based Assessment: Pre-service ESL Teachers' Accounts. *Pertanika Journal of Social Sciences & Humanities*, 27(1)
- Klenowski, V. (2013). *School-Based Assessment, Standards, Teacher Judgement and Moderation: Messages from Research*. Cambridge Horizons School-based Assessment: Prospects and Realities in Asian Contexts
- Lam, K. W., & Hassan, A. (2019). Factors Influencing Instruction Competencies as Perceived by Technical and Vocational Education and Training Students in Malaysia. *International Journal Of Academic Research In Business And Social Sciences*, 9(12)
- Lebar, O. (2018). *Penyelidikan Kualitatif Pengenalan Kepada Teori dan Metode* [Qualitative Research Introduction to Theory and Methods]. Edisi Kedua: Penerbit Universiti Pendidikan Sultan Idris Tanjong Malim, Perak. 130-145
- Lee, H. (2004–2005). *Developing a professional development program model based on teachers' needs*. *Professional Educator*, 27(1–2), 39–49
- Lembaga Peperiksaan Kementerian Pendidikan Malaysia (2012). *Konsep Pentaksiran Berasaskan Sekolah* [The Concept of School-Based Assessment]. Diperoleh September 12, 2013 daripada <http://www.moe.gov.my/lp/files/faq/FAQ%20PBS%202013.pdf>
- Lim, H. L., Wun, T. Y. & Chew, C. M. (2014). Enhancing Malaysian teachers' assessment literacy. *International Education Studies* 7(10): 74-82
- Mason, M. (2010). Sample size and saturation in PhD studies using qualitative interviews. *Forum: Qualitative Social Research*, 11(3) [Article No. 8]
- Mertel, K. C. (2020). Heidegger, Technology and Education. *Journal of Philosophy of Education*, 54(2), 467-486
- Metin, M. (2013). *Teachers' difficulties in preparation and implementation of performance task*. *Energy Education Science and Technology: Theory & Practice* - 13(3). 1664-1673. Retrived from <https://files.eric.ed.gov/fulltext/EJ1017658.pdf>

- Ministry of Education. (2013). *Malaysia Education Development Plan (PPPM) 2013-2025*. Retrieved October 18, 2013 from <http://www.moe.gov.my/userfiles/file/PPP/Preliminary-Blueprint-ExecSummary-BM.pdf>
- Ministry of Education. (2018). Guide to the implementation of classroom assessment. Putrajaya: Curriculum Development Division
- Ministry of Higher Education. (2017). Technical vocational education & training (TVET) in Malaysia: Selected works. Malaysia, Malaysia Citation Centre, Department of Higher Education
- Moktar, S. N. A., Hanapi, Z., Tee, T. K., Mohamed, S. & Rus, R. C. (2018). "The Willingness, Acceptance and Operation of Design and Technology Teachers on Practice in School Based Assessment." 3: 89–94
- Moodie, G., Wheelahan, L., & Lavigne, E. (2019). Technical and Vocational Education and Training as a Framework for Social Justice
- Nichols, S. L., & Harris, L. R. (2016). *Accountability assessment's effect on teachers and schools*. In G. T. L
- Nimehchisalem, V., Kai, E. F. S., & Nowrouzi, S. (2019). English as a Second Language Learners and Teachers' Conceptions of Language Assessment. *Journal of Asia TEFL*, 16(4), 1348
- Omar, M. K., Zahar, F. N., & Rashid, A. M. (2020). Knowledge, skills, and attitudes as predictors in determining teachers' competency in Malaysian TVET institutions. *Universal Journal of Educational Research*, 8(3C), 95-104
- Othman, J. (2019). REFORM IN ASSESSMENT: TEACHERS' BELIEFS AND PRACTICES. *Journal of Teaching English for Specific and Academic Purposes*, 501-512
- Pelan Pertumbuhan Strategik Johor (PPSJ) 2016-2020. (2018). [JOHOR STRATEGIC GROWTH PLAN (PPSJ) 2016-2020], Retrieved from <http://pspj.johor.gov.my/pelan-ppsj-2016-2020/dokumen-pelan-pertumbuhan-strategik-daerah>
- Pembangunan Kurikulum Kementerian Pendidikan Malaysia. (PKKPM) (2018). Panduan Pelaksanaan Pentaksiran Bilik Darjah. [Classroom Assessment Implementation Guide]. <https://www.moe.gov.my/en/soalan-lazim-menu/kurikulum/kurikulum>
- Rahman, A. & Ali, Z. (2010). Pelaksanaan Pentaksiran Kerja Kursus Kemahiran Hidup Bersepadu Di Sekolah Menengah Luar Bandar Daerah Kuantan, Pahang. [Implementation of Work Assessment of Integrated Life Skills Course in Rural Secondary Schools in Kuantan District, Pahang] <http://eprints.utm.my/10757/>
- Rahmawati, R., Lestari, F., & Umam, R. (2019). Analysis of the Effectiveness of Learning in the Use of Learning Modules against Student Learning Outcomes. *Desimal: Jurnal Matematika*, 2(3), 233-240
- Royo, M. A & Fun, W. S. (2010). *Faktor-Faktor Yang Mendorong Tekanan Kerja (Stres) Di Kalangan Guru-Guru Sjk(C): Satu Kajian Di Tiga Buah Sekolah Di Wilayah Persekutuan*. [Factors That Drive Work Stress (Stress) Among Sjk Teachers (C): A Study In Three Schools In The Federal Territory]. Fakulti Pendidikan, Universiti Teknologi Malaysia
- Said, M. M., Haron, Z. & Surat, S. (2018). *Kesahan Dan Kebolehppercayaan Instrumen Literasi Pentaksiran Bilik Darjah Melalui Model Pengukuran Rasch*. [Validity and Reliability of Classroom Literacy Assessment Instruments Through the Rasch Measurement Model] : 24–35 Seminar Antarabangsa Isu-Isu Pendidikan (ISPEN2018)
- Stephanie, H., Anna, K. P., Natalie, F., Inga, G. F., & Karina, K. (2018). "Teachers' Assessment Competence: Integrating Knowledge-, Process-, and Product-Oriented Approaches into a Competence-Oriented Conceptual Model. *Teaching and Teacher Education* 76: 181–93
- Tan, A. M. (2010) Pentaksiran Berasaskan Sekolah (PBS) di Malaysia. Kesiediaan Guru, Isu dan Panduan Pelaksanaan. [School -Based Assessment (SBA) in Malaysia. Teacher Readiness, Issues and Implementation Guidelines]. Gerak Budaya Enterprise, Kuala Lumpur. *Tesis Doktor Falsafah*. Universiti Kebangsaan Malaysia, Bangi
- Wang, C. C. & Ahmad, C. N. C. (2016). Kajian pengintegrasian persekitaran pembelajaran konstruktivis dan kemudahan pendidikan dalam bilik darjah Sains. [A study of the integration of constructivist learning environments and educational facilities in Science classrooms]. *Journal Sci. Math. Lett. UPSI*, 1 (2013): 18-27. Dimuat turun pada 20 April 2016, daripada <http://ejournal.upsi.edu.my>
- Wong, L. L., Osman, K. Maat, S. M. (2018). Analisis Faktor Pengesahan Bagi Instrumen Pengetahuan Guru Matematik Sekolah Rendah Dalam Pentaksiran Berasaskan Sekolah. [Analysis of Validation Factors for the Knowledge Instrument of Primary School Mathematics Teachers in School -Based Assessment]. *Jurnal Pendidikan Malaysia* 43(3): 11–20
- Yin, X. & Gayle A. Buck. (2019). Using a Collaborative Action Research Approach to Negotiate an Understanding of Formative Assessment in an Era of Accountability Testing. *Teaching and Teacher Education* 80: 27–38. <https://doi.org/10.1016/j.tate.2018.12.018>
- Yip, D. Y. & Cheung, D. (2005). *Teachers' concerns on school-based assessment of practical work*. *Journal of Biological Education*, 39(4), 156-162

Zamri, M., Nasyimah, I. & Wan, M. R. (2015). *Kemahiran berfikir aras tinggi dalam pembelajaran komponen sastra dalam kalangan pelajar sekolah menengah*. [High -level thinking skills in the learning of the literary component among high school students]. 7th International Seminar on Regional Education 1: 613-622