

## AUTHENTIC ASSESSMENT FOR AFFECTIVE DOMAIN THROUGH STUDENT PARTICIPANT IN COMMUNITY SERVICES

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### ABSTRACT

An authentic assessment is expected to have a positive impact on students' learning and motivation. One strategy to provide practical assessment for authentic tasks is by engaging the students to the community where they are familiar and comfortable. The students' involvement in community services is able to effectively provide vibrant existence information for improving the sense of responsibility among students before they become part of the community. However, evidence from the community services' activities complicated the assessment process where many documents need to be checked and verified. In our work, we designed an online authentic assessment framework of students' involvement in the community activities in terms of the affective domain. The affective domain addresses the grasp of attitudes and values that fuels teaching and learning (T&L) processes. Our assessment tool aims to provide a clear assessment guideline to evaluate the students' ability on analyzing real issues. It also makes the assessment process easier where the evaluation materials can be assembled, previewed, edited and published instantly through online. We hope that the incorporation of student involvement in community services into course assessment shall make the learning process more inspiring.

Keywords: student assessments, community services, affective domain.

### INTRODUCTION

Assessment which involves a real situation requires further counts on its operational process for reviewing, analyzing, and gathering any amount of raw data into pertinent reporting formats or evidence. The authentic assessment is a form of evaluation process towards real-life learning that encourages learners to provide and strategies on real solutions. It enables the learners to manipulate real situation factors and observe different outcomes (Chang & Huang, 2018; Krathwohl D. R. et.al, 1973; Habibi A. et.al 2018; Hussin M. & Fouzi N. H. M., 2018). Such an assessment process does not necessarily get positive or good results as in conventional exams. It is more for gaining and adapting new experiences. In authentic assessment, the students learn and solve problems that are based on real life situations. One approach to provide a feasible authentic assessment is to engage the students in its community where they are most accustomed and content. It allows the learners (students) to give back to their community and contribute towards the development of their society (Huda, M. et.al, 2018). Knowledge and experiences gained through social services are expected to make them matured and ready to be part of society while contributing necessary input for improving the quality of life in the society. According to the authors in (Iozzi, L. A., 1989; Gelmon, S. B. et.al, 2018), the affective domain focuses on both self-efficacy and emotions when dealing with the learning

environment. In fact, it has been found that “emotionalizing learning experiences” increased knowledge and learning retention while creating a positive atmosphere. For students to be able to tap into their affective domain, they need to engage much more beyond a teacher-student involvement. There are several ways to assess affective domains. For instance, group work, interactive lectures and personalized questions can be the way to draw the student into learning (Gelmon, S. B. et.al, 2018; Garbarino, J., 2017). One way to consider using the affective domains is through personal reflections and reflective learning. This allows students to relate their own experiences which help to fortify their learning into long-term memory. Based on this finding, we have chosen the affective domain as the assessment criteria in evaluating students’ know-how by incorporating community service as case study. Community services can be considered as a good case in the context of lifelong learning and communication skills as it represents real situations and real people. Students’ participation in community services as a form of authentic learning has been adapted in higher learning institutions a long time ago (Gelmon, S. B. et.al, 2018; Thorhallur O, F., 2015; Habibi, A. et. Al, 2018). Particularly, the community case which can be chosen from a wide range of community service activities, for instance, raising funds by donating used goods, environmental projects, work with the local health department, school mentoring and so forth. In order to evaluate the students’ capability in such activities, there are several methods of assessment and reporting mechanisms i.e., document report, presentation, video. There is also a need to match the course learning outcome and the activity rubrics for ensuring the students’ meet the course objectives. However, the authentic assessment is based on real experiences and can be made up through various activities; hence the rubrics are tight to be clearly set up. In this work, we developed the online authentic assessment tool for evaluating students’ participation in community services; called “Online Performance Evaluation Tool for Assessing Student Participants in Community Service (OPEACS)”. This online application is designed to be used by the lecturers and students. OPEACS managed 2 group project submissions for courses that opted to choose community services as part of course assessment. Structurally, OPEACS is divided into five phases that matched the components of affective domain (i.e., receiving, responding, valuing, organizing and internalizing values). The marks are then automatically calculated in the tool; further the lecturer can add comments at assessment remarks. The total marks calculated is represented in a radar chart where it shows the level of students’ embraces the affective components.

## LITERATURE REVIEW

There are several existing evaluation tools that have been studied along with the OPEACS development. The authors, Wu, W. H., et.al. (2019) used the concept of a massive open online course (MOOC) for assessing their students regarding affective domains. Such web-based learning mechanism has been used for designing and delivering educational services. They tested in a 9-week blended course that was designed to integrate affective learning into their MOOC curriculum. The blended approach occurs after each week of the MOOC session. Their model of affective domain learning activities is conducted through case studies and group discussions. Then, after each session, students are asked to provide written feedback, and it only focuses on the feedback content in the affective domain. In order to effectively analyze the feedback, they converted the five levels of the affective domain into merely three categories: low (receiving and responding), middle (valuing and organization) and high (characterization). However, the affective development analysis is designed for entrepreneurship-based courses. Normally, community involvement involves a complex and subjective concept where it creates challenges on how to evaluate and what indicators can be used to measure the activity progress. This is due to the fact that community services can

encompass a huge range of activities and differ in purpose and nature. The authors, South, J. (2005) have launched their assessment tool for community involvement called the Well-Connected tool. They evaluated their activity progress on community involvement through a series of questions covering six key aspects of community involvement are diversity, procedures, communication, staff support, opportunities and resources. One of the most significant elements of the tool is the inclusion of a scoring system. Their system scoring reflected on three core elements, i) the extent to which there is a strategic approach to community involvement; ii) good practice throughout different areas and levels of the organization; and iii) the range of opportunities and support available to community members and staff. This assessment tool is mainly to cater healthcare services. There is much challenge to assess the students' involvement and progress in the community services because they are tied with the academic syllabus in the classroom. Hence, the community involvement only can be done either during weekend or semester break. According to associate director at Binghamton University's Center for Civic Engagement, Twang A. H. (2018), involvement in community services in any form can benefit students and the community in many ways. He added that through the community experiences, the students are able to develop their professional/leadership and community skills. Community involvement gives the students a chance to apply their knowledge and ideas in real-world settings. Researches stated that participation in community service strengthens students' academic performance, leadership skills and ability to work with others (Guliker, J T. et.al, 2005; Krathwohl D. R. et.al, 1973; Chang & Huang, 2018; Hussin M. et.al, 2019). However, it raises the issue on how to evaluate the student's achievement and outcome after such involvement. Especially, when the outcome from the community service involvement becomes part of the assessment components in the course.

Putra Blended Learning Assistive System and Technology or in short (as in Figure 1), PutraBLAST (PutraBLAST, 2018) owned by Universiti Putra Malaysia (UPM) is the learning management system using Moodle as its platform. PutraBLAST is utilized for information-based structure management. It is able to deliver learning content, teaching and learning (T&L) assessments, tracking and monitoring project's progress for all courses in UPM. PutraBlast offers online project/tasks submission and various T&L innovation approaches. There are a lot of things PutraBLAST did right but assessing student affective components is currently not one of them. Moodle offers an open source Learning Management System (LMS) beneficial to both lecturers and students. For example, Mount Orange School (Figure 2) provides a demo of Moodle's open learning management system (Mount Orange School, 2018). This is where the users can try its features and see some examples on what they can do with the learning management system. The demo provided showcases the roles of each user such as student, teachers, manager, parent and other users. It is very helpful since it offered a glimpse of how the lecturer engages with the system. Edmodo (Figure 3) is Figure 1. Homepage of PutraBLAST 3 another online learning management system (Edmodo, 2018) which offers a modern graphical-user interface and outstanding interactive tool. UPM LAX activities, for instance, used this social learning network to manage the distribution tasks and the assessment of student's grades. Edmodo offered the least cluttered user experience and user interface for its users. However, even with its clean and modern user interface, Edmodo does not provide modules for assessing students' affective components. Table 1 shows the comparison between the existing systems and OPEACS. It is important to note that OPEACS is not meant to replace other major learning management systems. However, its strength lies when the assessment of coursework involves the affective domains of students and related to community services activities. Since there is currently no assessment system that can assess student affective components efficiently, our tool becomes a great addition alongside the current methods of

assessing students' learning capacity in higher learning institutions.



FIGURE 1. Homepage of Putrablast

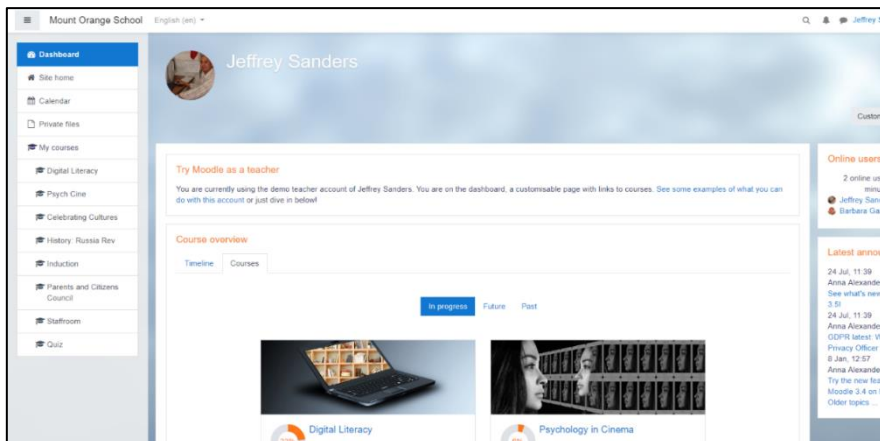


FIGURE 2. Homepage of Mount Orange School

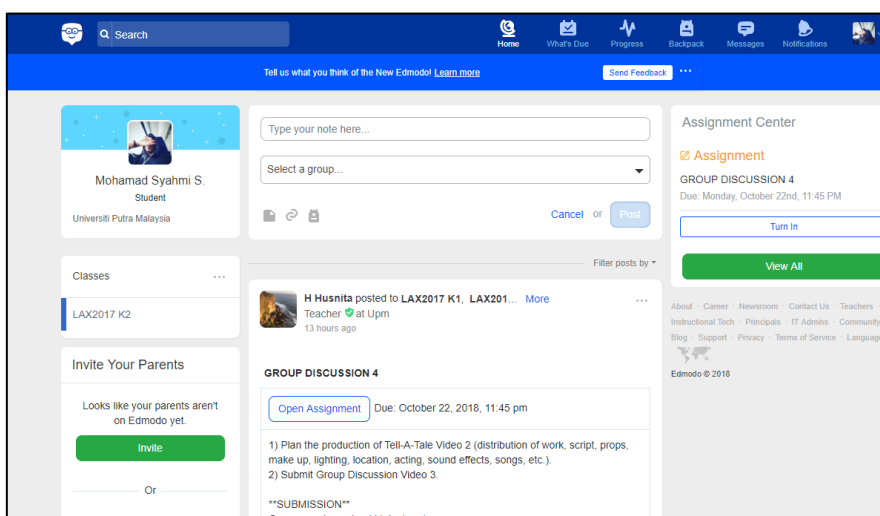


FIGURE 3. Homepage of Edmodo

TABLE 1. Comparison Between Existing Assessment System

COMPARISON	Putrablast	Moodle	Edmodo	OPEACS
Sort the submission parts into respective affective domains for effective evaluation.				✓
Built exclusively to monitor community service involvement between lecturer and student				✓
User friendly user interface.			✓	✓
Email notification features.			✓	✓
Students can view their marks immediately after the submission is graded by their lecturer.				✓
Mobile friendly user interface.	✓	✓	✓	✓

#### ASSESSMENT MODULE

Note that there are several levels in analyzing affective components in the learning process. According to the Bringle, Philips and Hudson (2004), the need for subsequent measurement using standardized scales is necessary for assessing both service learning and civic engagement. Assessing a student's involvement in community is not an easy task for lecturers as the students' experiences on the services might be varied. Normally, the students have been assessed through report documentation while excluding the emotion reflection entity where it is hard to visibly show in the report (Eddy & Lawrance, 2013; Kerimbayev, N. et.al, 2017). Therefore, in our assessment tool, we classified the students' output from their services' activities into several parts that aligned with the level of affective domains. The community service offers one of the best T&L ways by giving the students the opportunity to see the outside world and learn new things. In our work, we use community services' activities as a case study for letting the students get involved in the community. The activities designed must be aligned with the course content. Hence, it allows the lecturers to see whether the students really do understand what they learnt and how they are able to apply or at least share what they have gathered in the classroom. In order to systematically assess their response and experience in doing the community services' activities, we designed the assessment framework according to affective components namely receiving (A1), responding (A2), valuing (A3), organizing (A4) and internalizing values (A5) (Bloom, B. S. et.al, 1956; Iozzi, L. A., 1989). Essentially, receiving and responding levels examined the student's participation in community services. While, at the higher levels of the affective domain which are valuing, organizing, and characterizing normally involve an acquisition of attitudes and values that classify within the processes of emotion. Next, we analyzed the real issues/problems over practical experiments for gathering the criteria, factor and constraints during the activities. Specifically, the five elements of affective domains (Figure 4) are sorted into two categories, which is off site and on-site evaluation phases. Off-site phase includes the element of receiving (A1), responding (A2) elements while the on-site phase comprises element of valuing (A3), organizing (A4) and internalizing values (A5). In order to assess the elements of the affective domain, the students must compile both offsite and on-site evidence and documentations. For instance, there is a

need to submit a project proposal including the target community, objectives and type of activity, alongside additional proofs that are taken during on-site activities. On-site proofs such as pictures, videos, interview sessions and audio files are necessary to be added as part of assessment materials. Note that the assessment materials must be matched and met of each affective domain requirements. Once the students inserted/submitted the materials in the OPEACS they are then entitled to be assessed. From this, the students justly have prepared well-documented online basis submissions that are then ready to be marked by the lecturers. The evaluation process becomes easier and further improves assessment integrity.



FIGURE 4. The Five Components of Affective Domain

#### SYSTEM ANALYSIS & DESIGN

The main content of every web page is the most crucial as it showcases the information and functionality application. Specifically, OPEACS is deployed using a web hosting (i.e., Hostinger) that was also used by Kerimbayev, N. et.al. (2017) for collecting feedback of distance learning. In addition to the web server which serves web pages, OPEACS is also designed to receive data from the users. Hence, it requires a dedicated file storage server to cater this need. An FTP server is a necessary component in OPEACS system architecture that helps in exchanging files over the Internet. Figure 5 shows the network architecture of OPEACS. In OPEACS (Figure 6), upon logging into the user account, they will be redirected to the home page according to role (i.e., administrator, student, lecturer). Different user roles have different user homepages which display different menus for them to perform their tasks. It aims to maximize the authorization of information that resides in the OPEACS where the mark/grade of assignment is critical data in the assessment phase.

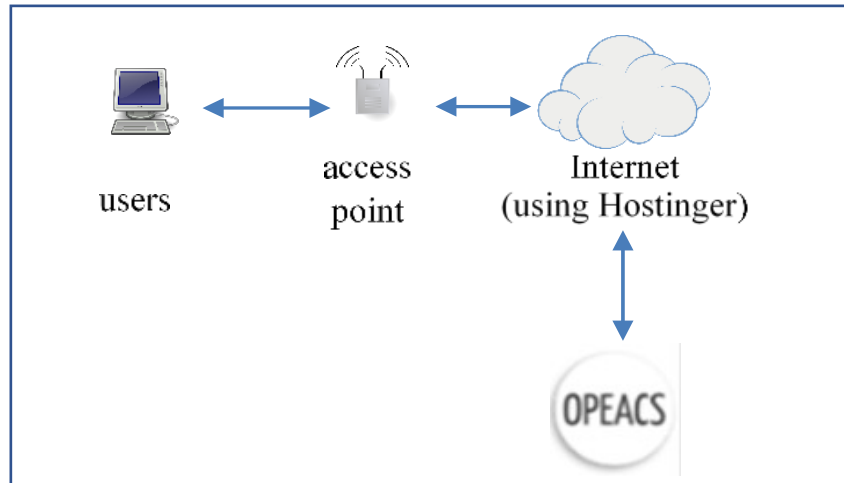


FIGURE 5. OPEACS System Architecture

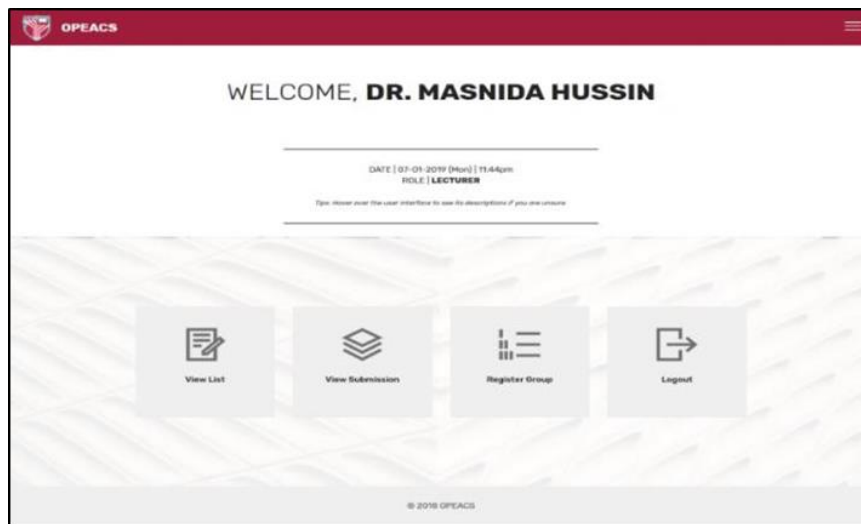


FIGURE 6. Homepage of OPEACS for Lecturer

The major part in OPEACS is the marking process. Specifically, once the students have submitted their evidence/report, the lecturer automatically received the notification through email about the submission. Hence, the evaluating process is done by the lecturer by assessing the student (group of students) submission. In OPEACS, due to the reporting style is according to five levels in affective domains, hence it makes the evaluating process much easier where the students' submissions have already split up parts. It further gives advantage to the students as they can focus on suitable evidence/documents to be uploaded on parts that matter. It reduces conflicts of subject matters and redundancy in data and information. In addition, the main difference between OPEACS and other assessment systems is in grading presentation. In order to create a visual report once the lecturer has evaluated student submission, we included a chart which summarized marks of each affective component gained by the student. By using this chart (Figure 7) both lecturer and student can see the affective components that the students have achieved from the group project. In order to ensure the evaluation integrity remains intact, the evaluation process towards the submission happens only one time. Furthermore, OPEACS also allows the lecturers to give comments on each portion of student group reports when they are assessing the student submission. Specifically, there is a section in OPEACS that the

suggestion can be entered by the lecturers and retrieved by the students. It aims to improve on each component individually. By incorporating it this way, the student can improve their next community activities submission.

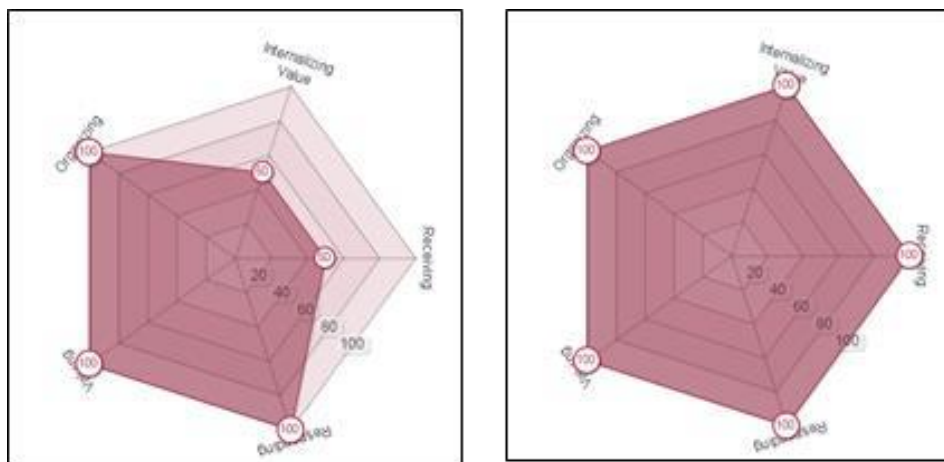


FIGURE 7. The radar chart from each report summary

It indirectly motivates the students to apply what they learnt and gain in the university into real life situations. The lecturers, on the other hand, are going to be positively affected by OPEACS because there is no longer needed to deal with the hassle of evaluating the paperwork by hand manually. By separating the student performance into each component of affective allows for the lecturers to really see on how well the student’s authenticity in performing the project activities. Technically, since everything runs on the cloud server, it contributes toward green technology in the long run which can save the earth.

## RESULT / FINDING

In OPEACS, the approach of authentic assessment is intended to make the T&L process enjoyable and easier where there is minimal formal instructions and rubrics needed to follow and assemble. Further, the students are free to design and run their own activity. Implicitly, it reveals their creativity in the learning process. Due to the good response on the prototype from the respondent during the testing phase, we had implemented the OPEACS as a trial version in some courses at Universiti Putra Malaysia (UPM). Mainly, it attempts to investigate functionality of OPEACS in handling real courses and cases/issues. Besides that, we tried to analyze the users’ feedback on how OPEACS is able to help the lecturers in evaluating student’s capability (i.e., in affective domains). Meanwhile, it aims to investigate students’ acceptance towards OPEACS in helping them to strategize task requirements and submission in a timely manner. Specifically, we asked the users (i.e., lecturers, students) to give indication on their satisfaction by using a rank; A for Impressive, B is for Satisfy and C for Not-satisfy, respectively. Furthermore, in order to get feedback on each perception; i) lecturer on assessment mechanism and ii) student on submission mechanism, we designed simple and straight-forward questions and collected their response according to a rank; A for Happy, B is for Not Happy and C for Neutral, respectively. Figure 8 shows the answer of all the survey questions. Surprisingly, all students give ‘A for Happy’ for the community service reporting style. Some of them verbally mentioned that this reporting style is much handy and very focused compared to the traditional (essay) reporting format. It is due to the fact that the reporting format is technically more understandable and provides clear perspectives based on the activity’s direction and item.



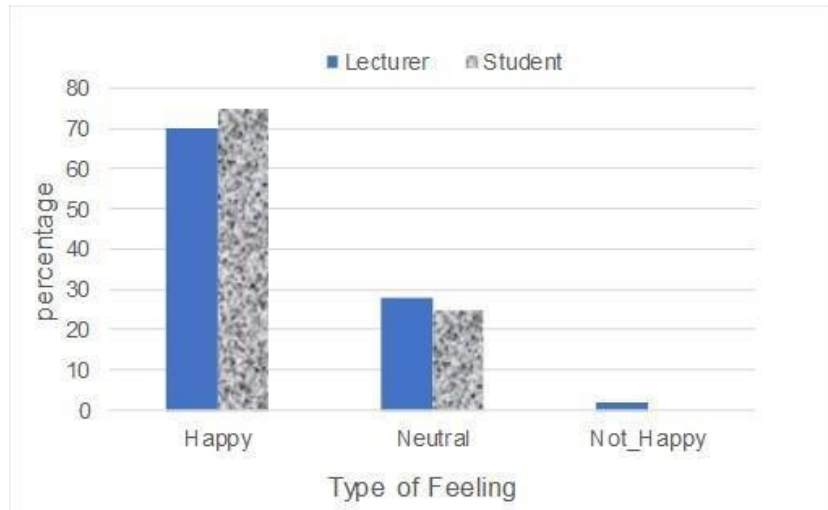


FIGURE 8. Users' acceptance on OPEACS

Besides validating the OPEACS functionality, we further investigated students' perspectives towards involvement of the community services activities into the course assessment. It is gathered and performed by having an oral interview with the students that participated in the community services. In particular, the interview is separated according to several dimensions that are satisfaction, program compactness and learning. In each dimension there are several components that have been evaluated (as shown in Table 2).

TABLE 2. Student perception of involvement in community services

Dimension	Percentage
<b>Satisfaction</b>	
Program Execution	93
Teamwork	63.3
<b>Program Compactness</b>	
Enjoy	73.3
Stress-free	63.6
Difficult	0
Time Management	36
<b>Learning</b>	
Knowledge	100
Skill	93.3

It shows that the satisfaction rate over the community program is 93%. Meanwhile, the satisfaction against teamwork is a bit lesser at about 63%. It might be due to an imbalance in team playing among the group members. For level of program compactness, interestingly it shows more than 70% of students feel enjoy and stress-free during program execution. But there is the lowest percentage in the time management part which shows 36%. This might be due to last minute preparation which makes the planning process a bit in tight time. In the part of knowledge and skill, it shows all respondents are felt they have learned new things and improved their skill (i.e., communication, leadership). Overall, the activities can encourage student reflection towards social competencies such as communication and collaboration.

## CONCLUSION

By introducing community services involvement into the teaching and learning (T&L) process is going to bring the positive impact of authentic learning. Students are able to express themselves out in the community by helping people in need and to shed light into things that matter. They can also train their leadership skills by organizing community service activities which involve various types of people and settings. The OPEACS aims to open its door to higher learning institutions to promote the advantages of incorporating authentic learning into student assessment. It also offers consideration towards improvement in course content in order to be aligned with humanitarian scope.

## ACKNOWLEDGEMENT

This work is supported by a Center for Academic Development (CADE) Universiti Putra Malaysia under Teaching and Learning Grant 9323729 (GIPP 2017).

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