Framework of Outcome-Based-Education (OBE) for Massive Open Online Courses (MOOCs) in Islamic Finance Education

Nashirah Abu Bakar[1], Sofian Rosbi[2]

[1]Islamic Business School, College of Business, Universiti Utara Malaysia, Kedah, Malaysia
Email: nashirah@uum.edu.my
[2]School of Mechatronic Engineering, Universiti Malaysia Perlis, Arau, Perlis, Malaysia
Email: sofian@unimap.edu.my

Abstract— *This paper present framework of outcome-based-education (OBE) for massive open online courses (MOOCs) in Islamic finance education program. The framework that integrated outcome-based-education (OBE) with Bloom's taxonomy needs a clear explanation in developing a reliable delivery method of course in MOOCs. Therefore, this study developed continuous quality improvement framework, deep learning Bloom's taxonomy framework and MOOCs implementation framework with integration of outcome-based-education (OBE). This paper provides significant contribution of providing framework that reliable and robust for implementation of teaching procedure in massive open online courses (MOOCs) with integration of continuous improvement and outcome-based-education (OBE) approach.*

Keywords— ***Massive Open Online Courses (MOOCs), Outcome-Based-Education (OBE), Islamic Finance.***

I. INTRODUCTION

Outcomes based education (OBE) becomes most important terms in measuring the performance of students in higher education institutions in Malaysia. It was attracts most researchers to investigate the impact of OBE implement in higher education institutions. Besides that, the development of technology was influenced the education system in Malaysia especially on implementing online education system. Therefore, higher education institutions of Malaysia must have a good framework in implement online learning.

Malaysian universities are developed online teaching and learning platform known as Massive Open Online Courses (MOOCs). MOOCs offered core modules and students from other public universities can participate in those courses through MOOCs online learning platform. The students from public and private universities can access by register under MOOCs online learning platform. Initial higher education institutions of Malaysian offer courses by MOOCs online learning are ICT Competency course led by Universiti Malaysia Sarawak; Introduction to Entrepreneurship course led by Universiti Teknologi MARA; Ethnic Relations course led by Universiti Kebangsaan Malaysia; and Islamic Civilization & Asian Civilization course led by Universiti Putra Malaysia (Fadzil, et al., 2015). This system was attracted most students from Malaysia and worldwide to participant on

the MOOCs online learning platform. However, there are several problem faced by lecturer in implement MOOCs online learning such as process of deliver and measuring the performance of students engaged on the MOOCs online.

In the global innovation in education field, OBE are looking as a good platform in measuring the performance of students. OBE is depends on a shift in focus from inputs to outcomes and on greater accountability for results (Chase Furman, 1995). Therefore, this study was presented a framework of OBE for MOOCs online learning in Islamic finance education program. The framework is integrating OBE with Bloom's taxonomy. There are many study in Islamic Finance fields (Abu Bakar and Rosbi, 2019; Abu Bakar and Rosbi, 2018; Abu Bakar and Rosbi, 2017; and Abu Bakar and Rosbi, 2016), but researches on the implementation of OBE for Islamic Finance education program are scarce. Thus, this study tries to fulfill the gap by presented a framework of OBE for MOOCs online learning in Islamic finance education program. The implementation of OBE in Malaysian university, especially on the courses that offer MOOCs online learning is still have a space for improvement.

II. LITERATURE REVIEW

In recent decades there is a widespread interest in the outcomes of educational experiences and how those

outcomes meet a variety of social needs (Tam, 2014). With the continuous development and penetration of the internet, there have been vast amounts of changes to the traditional method of classroom teaching. MOOCs have become one of the eminent online learning platforms provided in higher education of Malaysia. MOOCs is known as open online learning courses that offer free learning to entire students that register under MOOCs platform. The main purpose of online learning is to offer its learners an access to education materials at their own pace and time as well as lowering the average educational learning cost (Ahmad Fesol, et. al., 2017). MOOCs show a significant combination of network information technology and educational resources (Zheng, et. al., 2018).

MOOC also provided opportunities for thousands of learners to participate in free higher education courses online (Yousef, 2015). The first MOOCs started in year 2008 introduced by George Siemens and Stephen Downes. The movement in offering MOOCs spread to Europe where two major autonomous MOOCs projects were initiated: OpenupEd and FutureLearn. OpenupEd was launched in year 2013 and Futurelearn started their first course in September 2015 (Chea, 2016). Wong suggested the factors leading to effective teaching of MOOC revolve six areas according to the stages of course delivery namely, preparation, attraction, participation, interaction, consolidation and post-course support. Drago and Wagner suggest that online students are more likely to have stronger visual and read-write learning styles. Zapalska and Brozik (2006) concluded that the achievement of online learning can be improved by providing instruction in a manner consistent with each student's learning style.

Study by Aharony and Bar-llan (2016) reveal that perceived usefulness and perceived ease of use have major influence on the intention to enroll in MOOCs online learning. Then, Machadao (2016) suggested that learning is the process of acquiring relative permanent changes in understanding, attitude, knowledge, information, capacity and ability through experience. Study by Ahmad Fesol, et al., (2017) found that learning outcome is the best predictor for students' perception towards MOOCs online learning. Mee, et al. (2018) focused on undergraduate's perception of MOOCs in Mandarin subject in fostering their employability skills and found that two employability skills which are 'information gaining skill' and 'system and technology skill' are positive perception.

While study on the OBE reveal that the widespread interest in the outcomes of educational experiences has resulted in a shift away from the teacher-centered model towards the learning-based model focusing on what students know and can actually do (Tam, 2014). Outcomes-based education means focusing and organizing everything in an educational system around what is essential for all students to be able to do successfully at the end of their learning experience (Spady, 1994; Macayan, 2017).

Therefore OBE was advocated by Malaysian Ministry of Education as the basis for higher education institutions in Malaysia. OBE was explained what students can demonstrate at the end of the teaching and learning process. Learning outcomes can be assessed and evaluated through various measurement tools such as examination, quizzes, assignment and others. In Malaysia, the OBE system is implemented by the Malaysia Quality Agency (MQA). The Agency holds the task to improve the quality of human capital in the country from three main aspects namely, knowledge, skills and attitude (Abdul Karim and Yin, 2013).

The basic OBE model considers any curriculum as a structured entity with a set of learning objectives and means to achieve those objectives (Akhmadeeva, 2013). Nasrallah (2014), examine the ambiguity surrounding course learning outcomes and how they are perceived by faculty members, while simultaneously investigating the dominant teaching perspectives, practices and assessment techniques. This study found that faculty members and students withheld similar perceptions when it came to efficient teaching; however, they disagreed regarding the utility of constructive alignment as a proposed teaching-learning model. Deneen, et al., (2013) found that students did not perceive significant differences between OBE and traditionally organized courses. Lack of explicit discussion of OBE with the students may have denied students ability to make fully informed evaluations of OBE innovations. Guzman, et al., (2017) found that the faculty members manifest a great extent of understanding of OBE primarily the active participation of students in the learning activities. While, Cooper (2007) investigates the quantitative case study in Queensland schools and suggested that to achieve an effective understanding of OBE should establishes a relationship between successful implementation of an OBE curriculum and an understanding of the curriculum's intended constructivist learning theory and pedagogy.

III. FRAMEWORK FOR DEVELOPMENT OF OUTCOME BASED EDUCATION IN ISLAMIC FINANCE

The objective outcome-based-education is to meet with two main aims as follow:

a) Ensuring that all students are equipped with the knowledge, competence, and qualities needed to be successful after they exit the educational system.
b) Structuring and operating facilities for education providers to make sure outcomes can be achieved and maximized for all students.

Figure 1 shows the overview process of delivery for massive open online courses (MOOCs) with outcome-based-education. The first step is planning stage that incorporates for program learning outcome and course learning outcome for developing delivery and assessment method for MOOCs.
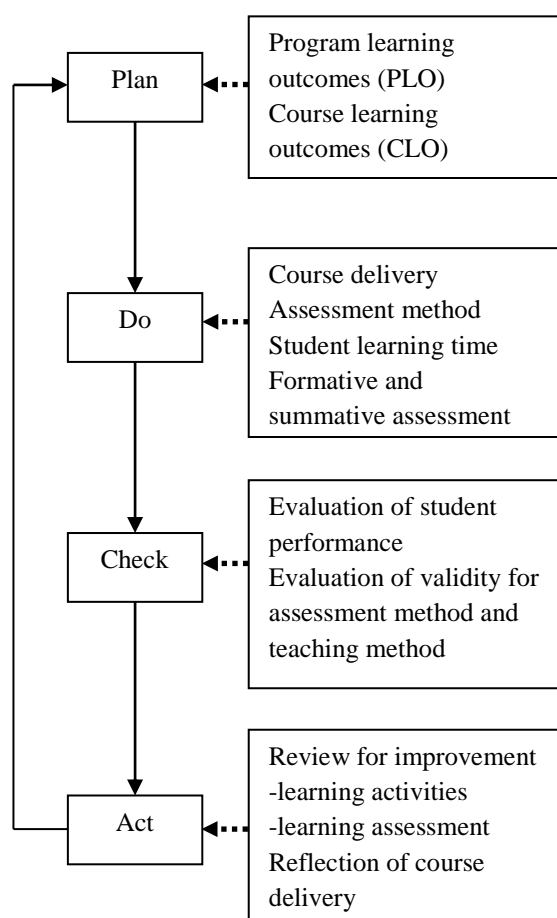

Plan	Program learning outcomes (PLO) Course learning outcomes (CLO)
Do	Course delivery Assessment method Student learning time Formative and summative assessment
Check	Evaluation of student performance Evaluation of validity for assessment method and teaching method
Act	Review for improvement -learning activities -learning assessment Reflection of course delivery

Fig.1: Overview process of delivery for massive open online courses (MOOCs) with outcome-based-education(OBE)

The second step involving implementation of assessment and delivery that already planned in stage one. This step involving delivery lecture, performing formative and summative assessment including calculating an appropriate student learning time.

Step three is about evaluating and reviewing about the attainment of students. The purpose of reviewing is to evaluate the validity for assessment method and teaching method in achieving outcome-based-education (OBE).

Final step is suggesting and performing improvement in attaining better score for outcome-based-education (OBE). The suggestion is focusing on learning activities and learning assessment to create course content that more appropriate for MOOCs that meet with standard of outcome-based-education (OBE).

Deep learning process using Bloom's taxonomy of learning domain

The learning process in outcome-based-education is based on taxonomy level. The taxonomy level in functioning to make sure testing and assessment methods are appropriate to measure students understanding in achieving outcome that specified for a particular course in MOOCs. The Bloom's taxonomy level is using six categories of learning domain as shown in Figure 2.

The first level of taxonomy is remembering which includes student are examines to recall facts and basic concept in course of Islamic Finance that using online platform of massive open online courses (MOOCs). The first level of taxonomy is to list the basic knowledge during learning in lecture session.

The second level of taxonomy is understanding which require students to explains ideas or concepts that involving recognize theories in courses of Islamic finance. This stage involved with interpretation and extrapolation of course content in Islamic finance.

The third level is applying which requires students solves a problem using knowledge and appropriate generalizations. This stage involving students need to illustrate and apply knowledge of Islamic finance to solve issue.

The fourth level is analyzing that indicates students need to breakdown knowledge into parts and shows relationships among the parts in solving an issue. The students need to examine and comparing for analyzing problems in Islamic Finance with integration of theories. The behavioral verbs that represent intellectual activity are to calculate, analyze, differentiate and examine.

The fifth level of taxonomy is evaluating. The level of evaluating requires students to shows judgement about value of materials and methods for given purposes. This level asks students to appraise and evaluate issue in Islamic finance with proper support and defend of justification.
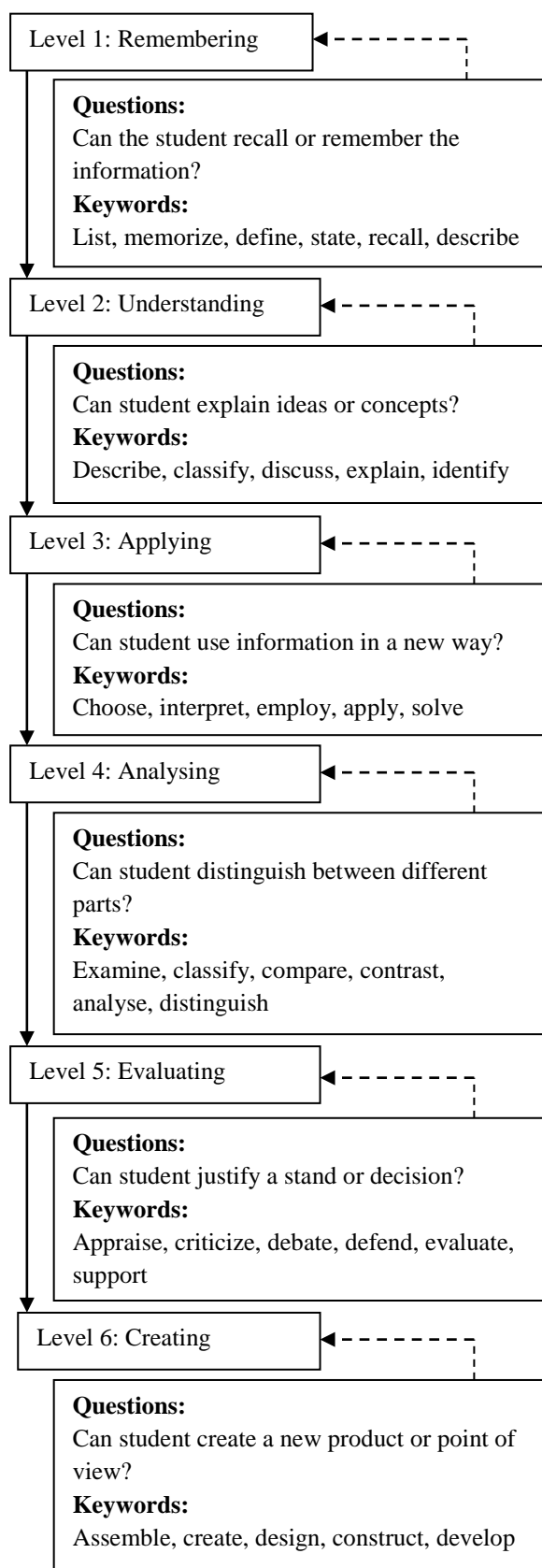
Level 1: Remembering

Questions:
Can the student recall or remember the information?
Keywords:
List, memorize, define, state, recall, describe

Level 2: Understanding

Questions:
Can student explain ideas or concepts?
Keywords:
Describe, classify, discuss, explain, identify

Level 3: Applying

Questions:
Can student use information in a new way?
Keywords:
Choose, interpret, employ, apply, solve

Level 4: Analysing

Questions:
Can student distinguish between different parts?
Keywords:
Examine, classify, compare, contrast, analyse, distinguish

Level 5: Evaluating

Questions:
Can student justify a stand or decision?
Keywords:
Appraise, criticize, debate, defend, evaluate, support

Level 6: Creating

Questions:
Can student create a new product or point of view?
Keywords:
Assemble, create, design, construct, develop

Fig.2: Deep learning using Bloom's Taxonomy

The sixth level of taxonomy is creating cognitive ability. The creating is defined as a type of critical thinking that focuses on putting parts together to form new and original whole. The behavioral verbs that represent intellectual activity are design, create, formulate, develop and construct.

Integration of three main domain of Bloom's Taxonomy

Learning domain for outcome-based-education can be divided to three groups namely cognitive, psychomotor and affective. Figure 3 shows integration of three domains of learning assessment in outcome-based-education (OBE).
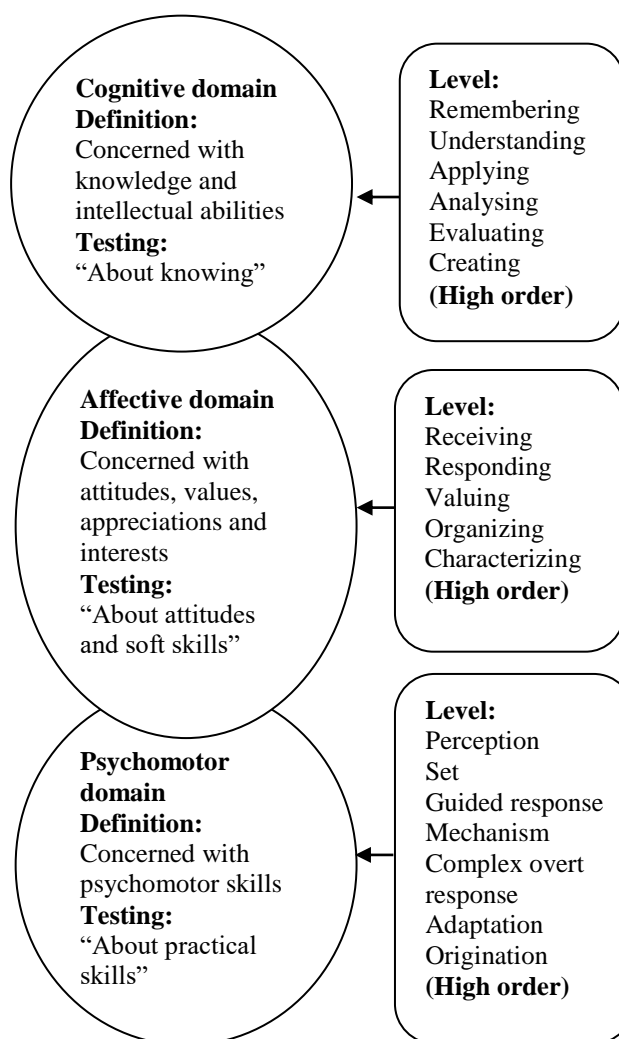
Cognitive domain
Definition:
Concerned with knowledge and intellectual abilities
Testing:
"About knowing"

Level:
Remembering
Understanding
Applying
Analysing
Evaluating
Creating
(High order)

Affective domain
Definition:
Concerned with attitudes, values, appreciations and interests
Testing:
"About attitudes and soft skills"

Level:
Receiving
Responding
Valuing
Organizing
Characterizing
(High order)

Psychomotor domain
Definition:
Concerned with psychomotor skills
Testing:
"About practical skills"

Level:
Perception
Set
Guided response
Mechanism
Complex overt response
Adaptation
Origination
(High order)

Fig.3: Level of cognitive, affective and psychomotor domain

Framework for implementation outcome-based-education (OBE) in massive open online courses (MOOCs).

In ensuring quality of delivery and assessment in online learning using massive open online courses

(MOOCs) platform, an integrated approach need to be developed. Outcome-based-education (OBE) is an approach to education in which decisions about the curriculum are driven by learning outcomes that students should display at end of the course.

The principle of OBE is consisting of four main principle, as follows:

(a) Clarity of focus about outcomes:
The culminating exit outcomes are set as focus of learning. In this situation, student-centered learning is developed which students are aware about what is their expected outcome for specific course and curriculum.

(b) Designed backwards:
The curriculum is designed backward using major outcomes as the focus and linking all activities including planning, teaching and assessment decisions directly to desired outcomes.

(c) Consistent and high expectation of success:
OBE implemented to ensure students to succeed and providing them to engage deeply with the issues they are learning and to achieve high challenging standard set.

(d) Expanded opportunity:
The curriculum is developed to encompass students to learn at their own pace according their own competency. The OBE is functioning to address individual need and differences with utilizing available time and resources to attain the course outcome at the end of particular course.

Figure 4 indicates the process flow of implementation outcome-based-education (OBE) with quality improvement method in delivering and assessing online courses of massive open learning courses (MOOCs). The process starts with preparing all materials for a course from perspective of course learning outcomes (CLO) and program learning outcomes (PLO). Then, implementation is performed using online platform. If the understanding of students, does not achieve at required level, close monitoring need to be perform. At the end of semester, evaluation and improvement is needed to close loop of OBE system.

The outcome-based education also is highly correlated with constructive alignment of education. Both of these theories are implemented in Islamic Finance education to develop reliable curriculum, teaching method, teaching outcome and assessment. Figure 5 shows constructive alignment for education system in Islamic finance.
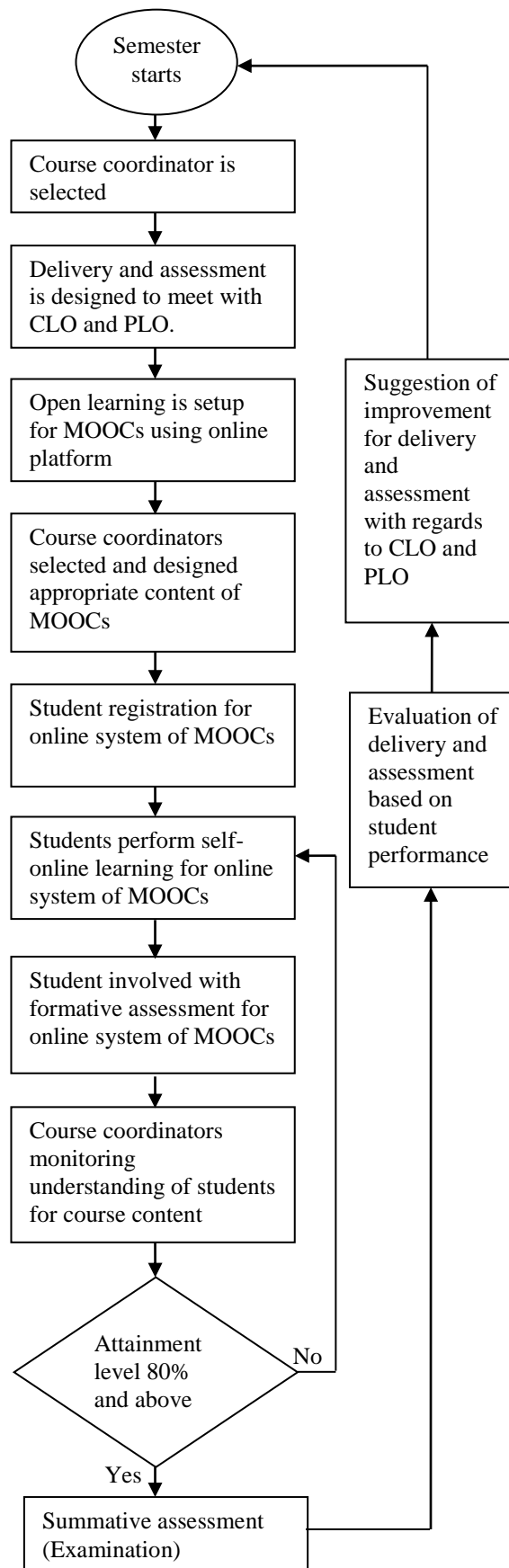

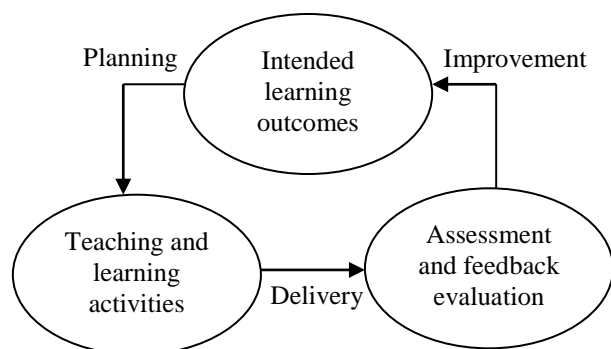*Fig. 4: Process flow of implementation OBE in online course for MOOCs*

Fig.5 Constructive alignment education system

IV. CONCLUSION

The aim of this study is to develop a reliable framework of outcome-based-education (OBE) for massive open online courses (MOOCs) in Islamic finance education. Main conclusions of the outcome-based-education for MOOCs are as follows:

(a) Outcome-based-education is objective and outcome drive, where every stated objective and outcome can be assessed and evaluated systematically with continual improvement. Every learning outcome is intentional and therefore the outcomes must be assessed using suitable performance indicators.

(b) Outcome-based-education is developed using clarity of focus element. Education system need to be organized so that teachers and learners can focus clearly, consistently, systematically and creatively on the important outcomes that learners are to achieve.

(c) Moreover, outcome-based-education (OBE) is system of designing downwards and delivering upwards. The curriculum design must be a clear definition of significant learning that students are to achieve. The important instructional decisions can be made by tracing back from this desired-end-result and identifying enabling outcomes that will assist learner to achieve the broader long-term outcomes.

REFERENCES

[1] Abdul Karim, N.A. and Yin, K.Y. (2013). Outcome-Based Education: An approach for teaching and learning development, *Journal of Research, Policy & Practice of Teachers & Teacher Education, 3*(1), 26-35.

[2] Abu Bakar, N. and Rosbi, S. (2016). Error Diagnostic for Weighted Moving Average to Forecast Sharia-compliant Securities in Malaysian Stock Exchange. *International Academic Research Journal of Business and Technology, 2*(2), 29-37.

[3] Abu Bakar, N. and Rosbi, S. (2017). Impact of the Corporate Structure and Sharia-Compliant Status to Average Degree of IPO underpricing in Malaysia Market. *Advanced Science Letters, 23*(9), 8758-8761.

[4] Abu Bakar, N. and Rosbi, S. (2018). Evaluation of Risk Reduction for Portfolio in Islamic Investment Using Modern Portfolio Theory. *International Journal of Advanced Engineering Research and Science, 5*(11), 27- 34.

[5] Abu Bakar, N. and Rosbi, S. (2019). Mathematical Model Composition of Stock Price Composite Index: A Case Study of Malaysia Stock Exchange. *International Journal of Advances in Scientific Research and Engineering, 5*(3), 57-64.

[6] Aharony, N. and Bar-Ilan, J. (2016). Students' perceptions on MOOCs: An exploratory study. *Interdisciplinary Journal of e-Skills and Life Long Learning, 12*, 145-162.

[7] Ahmad Fesol, S.F., Salam, S. and Shaarani, A.S. (2017). An Evaluation of Students' Perception on MOOC Instructional Design Elements. *Journal of Applied Environmental and Biological Sciences, 7*(10), 173-179.

[8] Akhmadeeva, L., Hindy, M. and Sparrey, C.J. (2013). Overcoming obstacles to implementing an outcome-based education model: traditional versus transformational OBE. *Proc. 2013 Canadian Engineering Education Association (CEEA13) Conf.*, 1-5.

[9] Chan, A. and Chan, C. (2009). A new outcome-based curriculum: its impact on student core competence. *Journal of Applied Research in Higher Education, 1*(2), 24-32.

[10] Chase Furman, G. (1995). Administrators′ perceptions of outcome-based education: a case study. *International Journal of Educational Management, 9*(6), 32-42.

[11] Chea, C.C. (2016). Benefits and challenges of massive open online courses. *ASEAN Journal of Open Distance Learning, 8*(1), 16-23.

[12] Cooper R (2007). An investigation into constructivism within an outcomes based curriculum. *Issues in Educational Research, 17*(1), 15-39.

[13] Deneen, C., Brown, G.T.L., Bond, T.G. and Shroff, R. (2013). Understanding outcome-based education changes in teacher education: evaluation of a new instrument with preliminary findings. *Asia-Pacific Journal of Teacher Education, 41*(4), 441-456.

[14] Fadzil, M., Abdol Latif, L. and Munira, T.A. (2015). MOOCs in Malaysia: A preliminary case study. *E-ASEM Forum: Renewing the Lifelong Learning Agenda for the Future. Bali, Indonesia*.

[15] Guzman, M.F.D.D., Edano, D. C. and Umayan, Z.D. (2017) Understanding the Essence of the Outcomes Based Education (OBE) and Knowledge of its Implementation in a Technological University in the Philippines. *Asia Pacific Journal of Multidisciplinary Research, 5*(4), 64-71.

[16] Macayan, J.V. (2017). Implementing Outcome-Based Education (OBE) Framework: Implications for Assessment

of Students' Performance. *Educational Measurement and Evaluation Review, 8*(1), 1-10.

[17] Machadoa, M.A.S., Moreira, T.D.R.G., Gomes, L.F.A.M., Caldeirad, A.M. and Santose, D.J. (2016). A fuzzy logic application in virtual education. *Procedia Computer Science, 91*, 19 – 26.

[18] Mee, C.K., Sui, L.K.M. and Salam, S. (2018). Undergraduate's Perception on Massive Open Online Course (MOOC) Learning to Foster Employability Skills and Enhance Learning Experience. *International Journal of Advanced Computer Science and Applications, 9*(10), 494-499.

[19] Nasrallah, R. (2014). Learning outcomes' role in higher education teaching. *Education, Business and Society: Contemporary Middle Eastern Issues, 7*(4), 257-276.

[20] Spady, W. (1994). Outcome-based education: Critical issues and answers. Arlington, VA: American Association of School Administrators

[21] Tam, M. (2014). Outcomes-based approach to quality assessment and curriculum improvement in higher education. *Quality Assurance in Education, 22*(2), 1-13.

[22] Yousef, A.M.F., Chatti, M.A., Wosnitza, M. and Schroeder, U. (2015). A Cluster Analysis of MOOC Stakeholder Perspectives. *International Journal of Educational Technology in Higher Education, 12*, 74–90.

[23] Zapalska, A. and Brozik, D. (2006). Learning styles and online education. *Campus-Wide Information Systems, 23*(5), 325-335.

[24] Zheng, M., Chu, C. and Wu, Y. (2018). Online-to-Offline Teaching Reform in China: Outcomes-based Education. *The Future of Innovation and Technology in Education: Policies and Practices for Teaching and Learning Excellence*, 237-252.