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Outcome-Based Education in Open Distance Learning: A Study on Its Implementation Amidst the Pandemic

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ABSTRACT

The noble Malaysian Qualification Framework (MQF) has been established by the Malaysian Qualification Agency (MQA) to emphasise the obligation to apply Outcome-Based Education (OBE) for higher education in Malaysia, with the revised version of MQF introduced in the year 2019 to assure the quality of higher education continues to be on par with the current global demand. A year after the launching of the revised edition, the momentum of OBE implementation was interrupted by the unforeseen pandemic crisis, resulting in major disruptions for all higher education institutions. This study intended to explore how OBE has been implemented in a Higher Education Provider (HEP) that offers Open Distance Learning (ODL), as well as its challenges and quality improvement approaches when the implementation was impacted by the unprecedented event. The study applied a qualitative research design and adopted a purposive sampling method to select four participants to join a one-to-one semi-structured interview. Data collected were transcribed and analysed via ATLAS.ti software by using a thematic approach. The finding revealed that the ODL-HEP well-applied the updated version of the framework to achieve the ultimate goal of OBE. However, there were both positive and negative perspectives about OBE in higher education. In addition, four themes namely psychomotor domain, alternative assessment, learning outcomes achievement, and dropout of students were discovered in the OBE implementation challenges amidst the pandemic. The results for the continual quality improvement aspect also revealed five important themes to illustrate how the HEP responded to the challenges and change.

Contribution/Originality: This paper contributed to the existing literature about Outcome-Based Education (OBE) implementation in Malaysia. The results of this study provided a greater knowledge of the difficulties associated with outcome-based implementation, particularly during the pandemic crisis, as well as the actions made by the Higher Education Provider (HEP) to comply with the new framework's standards.

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1. Introduction

The world of mankind had been profoundly impacted by the global virus pandemic in the year 2020. The novel virus detected on 31 December 2019 in Wuhan city, China prior to its outspread worldwide, was characterised as a pandemic on 11 March 2020 by World Health Organisation (WHO, 2020). The first Covid-19 virus landed and was spotted in Malaysia on 25 January 2020 before a Movement Control Order (MCO) was announced by Prime Minister on 18 March 2020, after an exponential rise of cases was reported in the country on 16 March 2020 (Elengoe, 2020). Apart from giving a serious threat to public health, the pandemic had caused major disruption to the social, economic, and well-being of humankind, including the education sectors globally.

Upon declaration of the pandemic worldwide, higher education providers (HEPs) prepared for campus shutdowns and cancellation of physical classes. In Malaysia, the first advisory note was issued by the Malaysian Qualification Agency (MQA) to urge both public and private higher institutions in Malaysia to change all teaching activities to remote settings after viewing a spike in positive cases. The Malaysian Qualifications Agency (MQA) is the statutory body in Malaysia that was established on 1 November 2007 under the Malaysian Qualifications Agency Act 2007, which accredits the academic programmes of HEPs and implements the national framework known as Malaysian Qualification Framework (MQF). The MQF sets the requirement of implementing Outcome-Based Education (OBE) for higher education in Malaysia since the year 2011, with the revised version of MQF to be enforced on new programmes and existing programmes to be accredited commencing April 2019 and April 2020 respectively.

Reiterating the contents of advisory note 1/2020 dated 29 March 2020, the advisory note 4/2020 dated 29 May 2020, the advisory note 2/2021 dated 8 February 2021, and the advisory note 5/2021 dated 17 August 2021, the higher education providers (HEPs) in Malaysia were given the flexibility by MQA to modify face-to-face teaching and learning activities including the practical components to fully online, through microlearning or other appropriate methods as long as the modified pedagogical and assessment methods are able to address the learning outcomes (Malaysian Qualifications Agency, 2021a; Malaysian Qualifications Agency, 2021b). The advisory notes highlighted the predominant achievement of five clusters of learning outcomes when designing and carrying out the alternative mode of teaching and learning activities amidst the pandemic. In addition, HEPs were also reminded to ensure the alternative assessment methods applied in the academic programmes during the pandemic period possessed unwavering integrity and security for ensuring good validity, fairness, and transparency.

Nonetheless, when teaching and learning activities in HEPs were rapidly shifted to online mode, some recent studies revealed numerous challenges that impacted the learning experience of students in Malaysia such as poor internet infrastructure (Chan Paul Leong, 2021; Husin, Sedek & Abdullah, 2021; Rashid, Othman & Yusop, 2021; Ramayah & Kumar, 2020; Tukiman, Khalid, Onn, Foong & Amran, 2020), academic performance (Chan Paul Leong, 2021), psychological well-being (Husin et al., 2021; Mustapha, Mahmud, Burhan, Awang, Sannagy & Jafar, 2021; Vasudevan, Kiat & Paramasivam, 2021), and engagement (Mustapha et al., 2021; Ramayah & Kumar, 2020). According to Lo, Ngai, Chan, and Kwan (2022), learning experiences and motivation directly influence the achievement of learning outcomes of students. In OBE implementation, the attainment of intended learning outcomes is paramount. From the review of literature, there is still a knowledge gap to understand how OBE was managed and implemented in HEPs in Malaysia during

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the pandemic to ensure the learning outcomes achievement are not compromised. Hence, this research paper intended to explore the OBE implementation in a HEP that conducts Open Distance Learning (ODL) in Malaysia. According to UNESCO (2022), ODL is defined as learning that separates teacher and learner by space and time (or both), with two-way communication and group communication via the network, as well as incorporating the use of media and technology for a more personalised educational experience. This research study was designed to answer the following Research Questions (RQs):

i. What is OBE in a higher education setting?
ii. How has OBE been applied in the open distance learning and curriculum?
iii. What were the issues or challenges in OBE implementation amidst the pandemic?
iv. How did the institution or department continuously improve and support the achievement of learning outcomes amidst the pandemic?

2. Literature Review

2.1. The Architectural System of Outcome-Based Education (OBE) in Malaysia

In Malaysia, the Outcome-Based Education (OBE) system had been introduced to all levels of education in higher education institutions in the year 2007 with the establishment of the Malaysian Qualification Framework (Malaysian Qualifications Agency, 2017). Revisiting the history of OBE, OBE was discovered to have invaded Malaysia's education system in the early 1950s (Mohayidin et al., 2009). Following the intention of the Board of Engineers Malaysia (BEM) to join the signatory member of the Washington Accord (WA), the engineering programmes in higher education were the pioneers to implement the OBE system commencing in the year 2004. All engineering programmes in Malaysia, bachelor level and above are accredited by the Engineering Accreditation Council (EAC). Thus, EAC plays the role of the main accreditation body of engineering programnmes delegated by the BEM.

Thereafter, the Malaysian Qualification Agency (MQA) was established in the year 2007 under the Malaysian Qualification Agency Act 2007. The establishment has given the entire higher education curriculum in Malaysia a new life with better quality control and programme standardisation for all private and public higher institutions. The introduction of the Malaysian Qualification Framework (MQF) in the year 2007 which emphasised the OBE system was fully implemented in the year 2011 for unifying the education system across the nation. One of the apparent reformations in the OBE system is that it has changed the conventional educational system that was in an instructor-centered setting to a student-centered approach. Succeeding the release of the Malaysia Education Blueprint 2015-2025 by the Ministry of Higher Education, the significance of preparing Malaysian youth with 21st-century skills to thrive in this complex, fast-paced and uncertain environment has been highlighted. The global workplace demands individuals who are equipped with 4Cs skills, namely critical thinking, collaboration, creativity, and communication (Stauffer, 2021). Furthermore, HEPs have been experiencing a major shift with the massive application of digital technologies in teaching and learning for enhancing the 21st-century skills of students. Thus, the revision of MQF to version 2.0 was enforced in higher education and training sectors in Malaysia in the year 2019 for ensuring its quality and relevance to the 21st-century ecosystem (Malaysian Qualification Agency, 2017).

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The primary aim of implementing the OBE system for higher education in Malaysia is to produce graduates who are holistic and employable for fostering the nation's economic growth. This move is aligned with the Tenth and Eleventh Malaysia plan of boosting human capital development. Apart from that, the recent Twelfth Malaysia Plan (12MP) (2021-2025) has also highlighted the topics of science, technology, engineering, and mathematics (STEM) for fostering digitisation and accommodating the IR 4.0 agenda (Chin, 2021). After being plagued by the 'bad dream' of the Covid-19 pandemic, the 12MP looks forward to resetting the nation's economy by developing the domestic human capital through reskilling, upskilling the present workforce, and reforming the present education system. The labour-intensive approach will soon be replaced with new technologies or high-tech approaches to boost the productivity and the Gross-Domestic Product (GDP) of the nation. Hence, the present agenda of reinvesting in education is mandatory for preparing students with a skill set that is aligned with global demands. This will also ensure they are future job-ready in this rapidly changing environment in the 21st century.

2.2. Outcome-Based Education (OBE): Quality Assurance via MQF 2.0 in Malaysia

OBE focuses on learners to achieve the intended learning outcomes. The father of Outcome-Based Education (OBE), William Spady, asserted outcomes are what learners can do with what they have learned or a tangible application of what has been learned (Spady, 1994). Malaysian Qualifications Agency (2017) defined learning outcomes are assertions about what students shall know, comprehend, and be able to perform after successfully completing a course of study, which will eventually lead to a qualification or part of a qualification. Instead of completing the syllabus of courses, the OBE focuses on how much and how well the learners have acquired and can do at the culminating point (Spady & Marshall, 1991). Thus, Spady and Marshall (1991) argued that the curriculum and instructional methods shall inherently be designed backward from the culminating demonstration (outcomes) in the OBE system.

In Malaysia, the Malaysian Qualification Framework (MQF) is an integral part of quality assurance practice for higher education when implementing OBE. MQF is defined as:

> *...an instrument that develops and classifies qualifications based on a set of criteria that is agreed upon nationally and benchmarked with international practices, and which clarifies the academic levels learning outcomes, and credit system based on student academic load* (Malaysian Qualifications Agency, 2018, p.4).

Talib (2011) described that OBE implementation in higher education curricula involves five significant stages. In stage 1, having a good understanding of the big picture of achieving continual quality improvement (CQI) in OBE implementation is essential. To continuously assure the quality of higher education programmes in Malaysia, the Malaysian Qualification Agency (MQA) has established programme standards, qualifications standards, guidelines for good practices, and various codes of practices as guidelines to achieve this inherent objective. The predominant big picture is to assure the provision of quality higher education and to produce graduates who are competent and ready for global demand which is rapidly changing, such as the agenda of the fourth industrial revolution. This requirement is highlighted in Area 1 in The Code of Practice for Programme Accreditation (COPPA) and The Code of Practice for Open and Distance Learning (COPPA-ODL), in which the Higher Education Providers (HEPs) are required to

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conduct a needs assessment for their academic programme to ensure it constantly meets the market and societal demand, including specifying the career prospects and further studies options (Malaysian Qualifications Agency, 2019).

Meanwhile, stage 2 covers establishing objectives, outcomes, domains, and taxonomies. This stage involves stating the programme education objectives (PEOs), programme learning outcomes (PLOs), course learning outcomes (CLOs), teaching and learning strategies, and assessment. HEPs must ensure PEOs are consistent with their vision and mission statements, while the statement of PLOs is relevant to the five clusters of learning outcomes stipulated in MQF 2.0. These clusters are (1) knowledge and understanding; (2) cognitive skills; (3) functional work skills (practical skills, interpersonal skills, communication skills, digital skills, numeracy skills, leadership, autonomy, and responsibility); (4) personal and entrepreneurial skills, and (5) ethics and professionalism. These educational outcomes are aligned with the objectives of the National Education Philosophy 1961, the Malaysia Education Blueprint 2013–2025, and the Malaysia Education Blueprint 2015–2025.

In stage 3, mapping between outcomes and objectives is conducted. The code of practice asserts that there must be a constructive alignment among PEOs, PLOs, CLOs, teaching pedagogies, and assessments. The programme learning outcomes must be mapped to MQF level descriptors and the MQF learning outcomes domains. In MQF 2.0, there are eight MQF levels of descriptors, namely certificates at levels 1-3, diploma and advanced diploma at levels 4-5, and levels 6, 7, and 8 for bachelor, master, and doctoral qualifications respectively.

Moving into stage 4, this phase is about delivering and assessing the OBE courses. The teaching and learning methods and assessment methods must be aligned with the desired learning outcomes, as well as consistent with the MQF level. A variety of assessment methods must be made available to assess the competencies of learners, and the assessment results such as continuous and final assessment results must be communicated to the learners prior to the commencement of a new semester. All these standards are also presented in Area 2 of COPPA and COP-ODL.

Finally, closing both the inner and outer loops is highlighted in the final stage. There must be established policies, procedures, and mechanisms for regular review and updating of programme structures and core activities to achieve CQI. For instance, the academic department must have a Quality Assurance (QA) unit for internal quality assurance and to work hand-in-hand with the QA unit of the HEP. Furthermore, the department's review system shall actively engage external stakeholders such as alumni, employers, and external experts for ensuring relevancy and currency. Other CQI approaches include academic staff evaluation, academic staff development, student performance analysis, progression analysis, attrition analysis, graduation, and employment rates.

3. Methodology

For producing graduates who are equipped with 21st-century skills, it is vital for Higher Education Providers (HEPs) to transform the curriculum and promote learner-centered learning. In other words, an educational model that focuses on the measurement and achievement of learning outcomes, which is in line with the directives of the Ministry of Higher Education Malaysia (MOHE) and the requirements of the Malaysian Qualification Agency (MQA) shall not be neglected. Thus, this study aimed to explore the OBE

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implementation in a HEP that conducts online distance learning (ODL) in Malaysia amidst the pandemic period. In addition, the challenges of OBE implementation during the pandemic period and its continuous quality improvement approach were studied and analysed. Considering the purpose of this research study is to gain an understanding of OBE implementation in a HEP that offers ODL, the research design used was a qualitative case study approach. This research design allows the researcher to explore or describe a phenomenon in context using a variety of data sources (Baxter & Jack, 2008). According to Yin (2014), a qualitative case study method examines a current phenomenon (the "case") in depth and within its real-world context.

For addressing the four research questions, a semi-structured qualitative interview was adopted. The questions designed in the semi-structured interview method were open-ended for eliciting views and opinions from participants to address the research objective (Creswell & Creswell, 2018). In this research study, Carspecken's (1996) interview protocol was adopted. According to Carspecken (1996), formulating two to five lead-off questions that are concrete before an interview is more than adequate. The purpose of designing lead-off questions is to commence a topic domain that the researcher wishes the participant to address. In the context of this study, four lead-off questions were designed to address the research questions. A list of items or 'covert categories' for each topic domain or lead-off question was also created to guide the interview so that the topic domain can be addressed. Carspecken (1996) recommended 'covert categories' to be set in the researcher's mind so that anything important will not be missed out during the interview. In addition, this interview protocol also involved the design of a set of possible follow-up questions for each topic domain.

A purposive judgment sampling method was used to select four suitable interviewees or participants from a HEP that conducts ODL. This sampling method enabled the researcher to address the research questions involving desired participant's criteria based on his professional knowledge (Etikan & Bala, 2017). Firstly, the researcher ensured the participants were the course coordinators or lecturers in an ODL-HEP. Secondly, the participants shall have experience in planning and managing OBE during the pandemic period. By fulfilling these criteria, the researcher could understand and explore the phenomenon accurately when addressing the research questions.

A few weeks before the interview, each purposively selected participant was contacted, invited, and briefed on the purpose of conducting this study. The confidentiality of the data collected was assured to make sure the participant felt at ease with the sharing of personal views and any possibly sensitive information. For protecting the participant's identities in this qualitative research, each participant is assigned a pseudonym. Upon the voluntary acceptance of participation in this study, a separate session of the one-to-one interview was carried out via Google Meet platforms respectively in the month of July 2022.

A day before the actual interview session, a reminder message was sent through WhatsApp to remind the participant of the date and time of the interview. During the interview, the sequences recommended by Robson and McCartan (2016) which included an introduction, warm-up, main body interview, cool-off, and finally closure was applied. In the beginning, the participant was informed of the purposes of the interview, the confidentiality of collected data, and their rights in this study. Their rights as the research participants and how the responses would be used in this study were also informed. The researcher requested permission from the participant to record the entire interview

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session to enable the recorded data to be reviewed repeatedly for writing out the textual documents to perform content analysis and discussions. With permission for recording granted by the participant, the researcher started the interview with simple questions to collect demographic details. Subsequently, the researcher commenced asking the main questions by referring to Carspecken's (1996) interview approach. A straightforward question to check whether the participant would like to add or know more about the research was asked prior to concluding the session. The interview ended by thanking the participant for his/her valuable input and participation. Each interview session lasted approximately 30 to 40 minutes in this study.

The collected qualitative data in this study were analysed using the thematic analysis approach via ATLAS.ti software, a Computer Assisted Qualitative Data Analysis Software (CAQDAS). The content thematic analysis applied the three general phases mentioned by Creswell and Poth (2017): (1) data preparation and organisation; (2) data reduction to themes with coding condensation; (3) interpretation of the results. For the first phase, a repetitive full reading of empirical data or transcribed verbatim data was performed after these documents were imported to ATLAS.ti software. Next, quotations were marked from the imported transcripts, and coding was created accordingly. The application of Code Manager in ATLAS.ti enabled code validation, code retrieval, and the building of the final coding families. In the final stage, the raw data were processed to make them appear meaningful by using tables, figures, or diagrams with discussions.

4. Findings & Discussions

4.1. Demographic Details of Participants

Four participants who serve a HEP that conducts open distance learning (ODL) were purposively selected by the researcher to participate in this study. These participants were sourced through the HEP website. The researcher only managed to select the final four participants to take part in this study after contacting six course coordinators or lecturers from this HEP to fulfill the purposive sampling criteria. The findings revealed that the selected participant owned a minimum of 3 years of teaching experience and a maximum of more than 10 years. In addition, all the participants had experience in managing Outcome Based Education (OBE) both pre- and post-pandemic. The brief demographic details of the participants who were selected to participate in this study are presented in Table 1 below.

Table 1: Brief demographic details of participants

Name	**Dr Tan (Pseudonym)**	**Dr Kim (Pseudonym)**	**Dr Ru (Pseudonym)**	**Dr Hash (Pseudonym)**
Position	Course Coordinator / Lecturer	Course Coordinator / Lecturer	Course Coordinator / Lecturer	Course Coordinator / Lecturer
Teaching Experience	More than 10 years	7	3	4
Experience with OBE Pre-pandemic	Yes	Yes	Yes	Yes
Experience with OBE Post-pandemic	Yes	Yes	Yes	Yes

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4.2. Perspectives about OBE in ODL

By applying the three phases of content thematic analysis by Creswell and Poth (2017) via ATLAS.ti software, the open coding method has established a total of six themes for the perspectives of OBE in ODL. From the findings, the first three identified themes are regarded as positive perspectives, namely domains and skills, job-ready graduates, and curriculum standardisation. Meanwhile, another three themes are considered negative perspectives, which have been coded as readiness, meaning, and adaptability. The detailed findings about the perspectives are presented in the following subsections.

4.2.1. Domains and Skills

Most of the participants highlighted the importance of OBE in developing universally accepted cognitive, affective, and psychomotor skills for students in higher education institutions in Malaysia. OBE has been viewed as the framework for all educators to emphasise the achievement of learning outcomes in teaching, learning, and assessment, which has been set as mandatory under the Malaysian Qualification Framework (MQF) (Malaysian Qualifications Agency, 2017). Some of the responses quoted,

> *It means what we want our students to become at the end period of their study. Let's say, we want the student to become an engineer. What kind of knowledge or skills do we want the graduates to have at the end period of their study? That's why we need to equip them with technical skills and soft skills… (Dr Hash, Line 38-32)*

> *It is a curriculum design that has three domains, which involve cognitive, affective, and psychomotor skills. For all the syllabus and the assessment, we must look into these three domains. The focus is like in a course, we have specific learning outcomes and we target to address these three domains. (Dr Ru, Line 26-30)*

> *They try to be able to make the learning objectives to be more clear and more quantifiable. There is more focus on delivering certain outcomes that we need for the institution, and also for the country. (Dr Tan, Line 30-33)*

4.2.2. Job-Ready Graduates

In line with Malaysia's plans of boosting human capital development, OBE gives guidelines for HEPs to design programme curriculum that is student-centered and industry-relevant in preparing students for future employment in the fast-changing environment amidst the challenge of the fourth industrial revolution (4IR). The participants described,

> *I think OBE is a guide for the lecturers. The existence of this OBE has its pros and cons. The pro part is it makes sure that the syllabus, contents, and documents are up to date and reliable based on the present demands. All this information shall have been advised by the practitioners out there to make sure our students are sellable upon graduation. (Dr Kim, Line 27-31)*

> *It is because it ensures we can prepare our students or our graduates holistically in terms of their skills, like psychomotor skills, and also in terms*

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of their attitude. These are to prepare them to serve the industry well later. (Dr Ru, Line 32-35)

In the meantime, the adoption of OBE is able to prepare and boost the confidence of students to deal with people in the workplace which is complex and demanding in the present era. One of the participants described,

That's why we need to equip them with technical skills and soft skills. In engineering, they need to know how to talk to their client or their vendors. (Dr Hash, Line 31-33)

While embracing the challenges caused by the wave of digital technology and innovation in the 21st century, students are also benefited as they are trained and exposed to the updated digital software application in the curriculum under the OBE system,

…we need to make sure the contents that they learn, from our side, are about what is in demand nowadays, and in another five years. So, we make sure that our students are exposed to the latest software. All these are very important for us to follow in the OBE system. (Dr Kim, Line 33-37)

They start to have something called digital outcome, about digital skills! So that one may be able to align to the digital era. (Dr Tan, Line 52-53)

4.2.3. Curriculum Standardisation

Prior to the establishment of MQF in Malaysia, there were multiple qualifications systems such as National Accreditation Board (LAN) for private HEPs, whereas the polytechnics and community colleges were required to comply with requirements set by the Quality Assurance Division (QAD) under the Ministry of Education (MOE) in Malaysia. Thus, there were multiple qualification systems with varied players in the public and private HEPs. The establishment of MQF has unified the education system for HEPs in Malaysia with better quality assurance and for driving the OBE system. One of the participants quoted,

It standardises the way we look at education. Before that, we have our own way of interpreting it. This is a top-down approach, but it really standardises the way how you teach the students, and how to deliver the objectives to the students. That is helping because there is a standard and more unified. (Dr Tan, Line 38-41)

4.2.4. Readiness

Although the OBE system has been widely acknowledged by all the participants in this study, the researcher managed to identify a few negative perspectives about the OBE system from the thematic analysis. The first identified theme is the readiness aspect. Undeniably, with the first phase of MQF full implementation in the year 2011, and the improved or second version in the year 2019 (Malaysian Qualification Agency, 2017), some participants were discovered to express their worries about "catching the train" of rapid change in the framework and requirements. They expressed,

I think the con is that what has been requested in OBE is too much until we are not fully prepared for that, sometimes, we need more time. For example,

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BIM! Not all the lecturers have been exposed to BIM during their study time. But now it is very important for students to learn BIM. We need to prepare ourselves before we can go for it. (Dr Kim, Line 38-42)

…the difficulty that we are facing is that for higher education, there are "circulars" (translated from Malay "pekeliling") and these "circulars" keep changing. Although these "circulars" are good, the inconsistency in the content somehow imposes difficulties in implementation. (Dr Hash, Line 43-36)

4.2.5. Meaning

The second negative viewpoint found was the awareness of students about the presence and values of the OBE system. Although students were briefed about OBE in ODL, the participants responded that OBE remains "invisible" for the majority of the students, unless they are from the educational-related academic programme. They described,

Students are a bit invisible. They don't even know, most of them, what is that? But of course, we also try to instill something, this is the learning outcome. But most of them, I don't think they really look at it. The way we cover the questions is about OBE, but the student just takes it as a question. (Dr Tan, Line 44-47)

When the students entered university, we briefed the student about OBE. What is OBE? PEO? PLO? CLO? Because most of the students do not understand what OBE, PEO, PLO is, and so on. Usually, they just understand they need to register the subject and pass the subject. (Dr Hash, Line 67-70)

4.2.6. Adaptability

The third negative theme that emerged was the adaptability of OBE under a standardised framework. Participants commented the implementation of OBE requires massive documentation efforts for fulfilling the required quality assurance and accreditation purposes. In addition, a fixed framework sometimes limits the creativity of HEPs to apply teaching and learning pedagogies that evolve faster than the educational framework revision. The responses quoted,

The idea is very noble, but the process we go through is very manual. That creates some problems for educators because it becomes a radical world of administrative work. When the work is more, then the real objective is very hard to achieve. (Dr Tan, Line 33-36)

There are some teaching methods that are reliable, for example, Coursera, and Linkedin learning… these can actually be used as part of the learning materials. However, because we follow OBE, it's not tally and contradictory with the document requirements, these are difficult to be absorbed into our curriculum. (Dr Kim, Line 43-47)

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4.3. Implementation of OBE in ODL Curriculum

In answering the second research question, the thematic findings from ATLAS.ti revealed four important themes to understand how the OBE system has been applied in the ODL context in the selected HEP in this study. The four identified themes are presented in the following subsections.

4.3.1. MQF 2.0 Adoption

Apparently, the HEP has adopted the newer framework to comply with the instruction given by the Malaysian Qualification Agency (MQA) in the year 2019. Changes have been made accordingly by the HEP to migrate from MQF 1.0 to MQF 2.0 that highlighting the achievement of five clusters of learning outcomes. One of the responses quoted,

> *Now we are implementing some changes from MQA01 and moving to MQA02. The numbers of PLO are also different, before this was 8, then we changed to 9. Now we are changing to 11 PLOs. (Dr Hash, Line 62-64)*

4.3.2. Personalised Learning

Consistent with the requirements of the Malaysian Qualifications Agency (2019), in which at least 80% of the student learning time (SLT) for an ODL course must be delivered via open and distance mode to promote personalised learning, the findings revealed that the HEP mostly adopts the ODL delivery approach via a learning management system (LMS) to promote self-directed learning. Moreover, tutorial sessions are conducted by tutors to support students and facilitate discussion in the ODL curriculum, including the practical works. They described,

> *…for an ODL university like us, we assume the student will engage in self-learning through the LMS and other types of media. Since they are all adults, we assume they will learn at their own pace and in their own free time.*
> *…students need to come to the design lab at each learning center to conduct their lab work. (Dr Hash, Line 76-69; Line 91-92)*

> *We expect the students to go through these materials during their free time. We have the tutorial session, and students are going join face to face classes physically or virtually with the tutor. During tutorial sessions, we are expecting the students to have a discussion with the tutor, no more learning because they shall have gone through all the contents on LMS. (Dr Kim, Line 52-56)*

4.3.3. Learning Outcomes Focus

Furthermore, it was found that the curriculum delivery of the HEP is outcome-oriented and congruent with the educational framework that focuses on OBE. Instead of applying an instructor-centered approach, the teaching and learning activities are learner-centered and designed to address the attainment of desired learning outcomes, such as cognitive, psychomotor, and affective domains. They described,

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> *…with the OBE approach, we start to look at the CLO, and mostly, one course will have 3 CLO. So, the emphasis has slightly changed, we don't look at powering the knowledge of the full materials, but at meeting the programme outcomes. In that part, I think it's a more real-world thing rather than you have to stop the student to understand every material that we give to them. (Dr Tan, Line 64-69)*

> *…in our undergraduate programme, we have a surveying course. When we talk about psychomotor skills, the syllabus must involve the use of surveying equipment. Students must handle this equipment by themself. From here, the lecturers can ensure that the students really know how to handle the equipment and we can assess their psychomotor skills. Other than that, we are teaching the students to share the equipment with others. Apart from testing their psychomotor skills, indirectly, we are also testing their cognitive skills and attitude. (Dr Ru, Line 44-51)*

4.3.4. Constructive Alignment

OBE focuses on the achievement of learning outcomes. Merely stipulating the learning outcomes alone will not guarantee the success of the OBE system. In this study, one of the themes established from the thematic analysis is called constructive alignment. According to Biggs (1996), constructive alignment is a design for teaching in which the intended learning outcomes have been specified prior to commencement of teaching, and the teaching activities are designed to engage learners to achieve those outcomes, cum with suitable assessment approaches to measuring the level of attainment of those outcomes. Hence, this finding revealed that HEP has applied two lines of thinking, which are thinking about teaching and learning in ODL curriculum implementation. The responses quoted,

> *…the assignments, we align to the course learning outcomes…*
> *… instead of covering the whole materials, we start by going into the questions and problems set inside the assignment because it is set according to the CLO. From the assignment, students have the purpose to go and search within materials or outside materials for the answers. In that case, it will be more objective-based rather than covering the whole unit. (Dr Tan, Line 71-72; Line 74-79)*

> *For every question that we are going to assess the student, we need to fulfill the requirement from the learning outcome. The question is for which CLO, PLO, Bloom's Taxonomy, and so on. (Dr Kim, Line 62-64)*

4.4. Challenges of OBE Implementation Amidst Pandemic

For addressing the third research question, the challenges and issues faced due to pandemic disruption were studied, particularly in the OBE implementation. The thematic analysis from ATLAS.ti discovered four major themes in this study, namely psychomotor domain, alternative assessment, learning outcomes achievement, and dropout of students. The detailed findings are presented in the following subsections.

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4.4.1. Psychomotor Domain

The first significant challenge and issue that the researcher discovered is the deferment of face-to-face classes. The participants in this study revealed that all tutorial classes that used to be carried out physically in every learning centre were forced to shift to online mode. The suspension of physical classes caused major disruption to courses that require laboratory work practical fieldwork and site visits, which affected the psychomotor domain. Some of these practical activities were replaced with other innovative activities such as practical simulations and video presentations. The following responses quoted,

> *…before the pandemic, there were physical classes and because of the pandemic, all the tutorials have been shifted to online. (Dr Hash, Line 83-84)*
>
> *Because of the pandemic, suddenly everybody moves online. So instead of having tutorial classes in every regional center, we have only one tutor to cover the whole course for all the centres. (Dr Tan, Line 87-89)*
>
> *Because we know that for lab, it involves hands-on and face-to-face. When we do it and change the mode to online or using simulation, it is obviously not the same. (Dr Ru, Line 87-89)*
>
> *…we do have a site visit but unfortunately, we couldn't do that. So, we change to either a virtual video simulation presentation, where the students go through the simulation and explore by themselves, or we request the student to have their own self-site visit. (Dr Kim, Line 113-117)*

However, for those courses that were not able to be replaced with alternative activities, the HEP was found to defer these activities to another semester or when permission to conduct physical classes was granted.

> *…our team in the same faculty for the engineering programmes, there were big issues because they have lots of lab sessions. So, the subjects keep delaying until we got permission to do face-to-face classes. (Dr Kim, Line 122-124)*

Nonetheless, this disruption was found to be temporary for final year students in the first half of the year 2020 as they were permitted to conduct their research activities at a later stage.

> *…we only allowed final years students to come and do their research in the lab, and no classes for other subjects in early 2020. (Dr Kim, Line 127-128)*

4.4.2. Alternative Assessment

Another challenge that has been identified was the change from physical summative assessment to alternative assessment. In this study, the HEP was discovered to convert their face-to-face final assessment or proctored examination to an assignment. They described,

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> *…because previously we had proctored exams, students have to do face-to-face exams in a specific stipulated time. But due to the pandemic, we have changed these final assessments into assignments. (Dr Ru, Line 72-75)*

> *…before this, students need to come to the learning centre to sit for the final exam. Because of the covid, the student cannot go to the center to take the final exam. So, we are forced to change it to the course assignment. (Dr Hash, Line 101-104)*

For assuring the attainment of learning outcomes of students are not affected due to this change, the HEP designed the alternative assessment to be at a higher cognitive level under Bloom's Taxonomy, which intended to challenge the students to think critically. The following responses quoted,

> *Bloom's taxonomy is highly highlighted in the OBE implementation during the pandemic. (Dr Kim, Line 110-111)*

> *…instead of the exam, now we just have to change our questions. So that the students cannot just copy from anywhere. (Dr Tan, Line 106-107)*

> *…most of the final assessment will be in term of assignment, but it is more on case study, the question is not direct. We also test their cognitive skill, we ask them to analyse the high impact journals, two or three, and extract some important issues from those journals. So, we don't give students direct questions and expect a direct answer. (Dr Ru, Line 79-84)*

4.4.3. Learning Outcomes Achievement

When the proctored examination was replaced with the alternative assessment during the pandemic, the participants in this study revealed that the overall learning outcome achievement had significantly improved compared to the attainment pre-pandemic. Thus, the validity of alternative assessment possesses challenges and shall be examined in detail for ensuring the assessment of the competencies of learners is carried out effectively. The participants described,

> *…in terms of learning outcomes achievement. Let's say before the pandemic, it was around 60 to 70%, but during the pandemic, the achievement was higher like 90 to 95%. (Dr Hash, Line 114-116)*

> *Previously was around 60, 55 over. But during the pandemic, everything goes up until 75…80… (Dr Ru, Line 109-111)*

In addition, the researcher discovered that a longer time limit and open examination settings enabled students to perform better during the pandemic in ODL. Another possible reason could be students could collaborate and discuss the answers with peers in alternative assessments prior to submission.

> *…students will have more time to prepare for the assignment in the alternative assessment, we give them about one month period to prepare for submission. Their results are quite better if compared to the exam. (Dr Kim, Line 80-83)*

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> *When we do assignments, it is open book and there are no specific answers like the proctored exam. So, everything looks good and the achievement is high. When we have the face-to-face exam, obviously, it will be different because it all depends on you as a student to answer, how much can you remember? how much can you interpret? Nobody can help you. (Dr Ru, Line 102-107)*

4.4.4. Dropout of Students

In addition, the pandemic period was found to create another challenge for the HEP which affected the OBE implementation. As students undertaking the ODL programme were working adults, they were reported to drop out or record inactive status during the pandemic due to financial and job issues. One of the participants responded,

> *…there were a lot of students who were unable to attend classes, there were lots of MIAs in 2020. (Dr Kim, Line 84-86)*

However, research also indicated that the student attrition rate is inversely correlated with motivation and satisfaction with the quality of academic support services (Christo & Oyinlade, 2015). Thus, this is another area that deserves a thorough and continual review for maintaining the programme quality which will be discussed in the next section.

4.5. Continual Quality Improvement (CQI)

The fourth and final research question was intended to determine the improvement mechanisms that have been applied by the HEP to continuously enhance the quality of OBE implementation in ODL, in line with the requirements of Area 7 in COPPA-ODL. The improvement mechanism is inherent when the educational management system had been disrupted by the pandemic with unprecedented change and uncertainties. From the thematic analysis, the researcher managed to establish five important themes to answer this research question. The findings are presented in the following subsections.

4.5.1. Student's Performance & Statistics

From the finding, it was discovered that HEP closely monitored the performance of students under the OBE system, such as the learning outcomes attainment trend or its overall percentage. A reporting mechanism with an action plan was mandated to improve any academic areas that showed issues or problems. The response quoted,

> *…we need to fill up some reports, like the percentage of PEO, and PLO this year versus the previous year. So, we can see the changes and also make a comment, on whether the trend is going up or going down. Then, we need to do some recommendations, whether we need to share some more materials (Dr Hash, Line 135-139)*

Consistent with one of the requirements stipulated in Area 7 under the COPPA-ODL by MQA, the HEP demonstrated an effort to review and analyse the problems caused by the student attrition rate amidst the pandemic. The course coordinator played an important role to identify and solve the problem accordingly. One of the responses quoted,

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> *…there were a lot of students who were unable to attend classes, there were lots of MIAs in 2020. I had the duty to contact the related students to find out the causes. (Dr Kim, Line 84-86)*

4.5.2. Learning Support Services

With most of the updated learning materials now available online through various innovative learning platforms, the findings also revealed that HEP has invested in and subscribed to a new educational learning platform to continuously enhance the learning experience of ODL students, which was found to be introduced by HEP during the pandemic period. One participant highlighted,

> *…we need to give them more up-to-date implementation, that's why we implement Coursera. We already subscribed to Coursera for one year to two years. (Dr Kim, Line 138-140)*

Besides, HEP has been empathic towards the learning needs and well-being of students by making sure they are continuously supported in their learning journey to attain the desired learning outcomes. The participants described,

> *As requested by the Sabah and Sarawak students, they prefer to continue to do learning online because they said it makes them much easier to study. This is the good part where we can get more Sabah and Sarawak students and help them to improve their education. (Dr Kim, Line 90-93)*

> *We will look into direct communication with the students because they are more isolated and totally not in the same space with the tutor, not in the same place with the students. It is our duty now to have a group of students which we need to mentor the communication with the students. (Dr Tan, Line 136-140)*

To continuously assuring the goal of the OBE system is achieved, HEP regularly reviews its assessment approach as stated in Area 7 of COPPA-ODL, predominantly when the proctored examination has been replaced with an alternative assessment during the pandemic. One of the participants clarified,

> *The most significant change is the way we set the primary exam. There will be a higher level of thinking and the higher level of taxonomy in the exam. There will be a different approach for the students to answer the questions. (Dr Tan, Line 133)*

4.5.3. Standard Operating Procedures (SOPs)

Other findings also revealed that HEP adopted a proper mechanism or SOP to monitor the OBE implementation to ensure continual quality improvement. The academic results of students will be reported in a bottom-up sequence. One of the responses quoted,

> *After the exam department has released the results, there will be an exam board meeting. After this meeting, the exam department will send out the results to the lecturers, and the lecturers will prepare the reports. After this, an endorsement will be made by the school board, and we'll send the report*

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> *to the management. Meaning the management will know the course progress. So, let's say if the PLO or CLO achievement is less than 50, the deputy vice-chancellor academic (DVCA) will call the related lecturer to justify why the learning outcome achievement is very low, and how to overcome this problem. (Dr Ru, Line 141-149)*

Besides, it was found that the achievement of learning outcomes of ODL students is reviewed, commented and monitored each semester and this process is conducted in a cyclical mode.

> *For CQI, we will monitor it at the end of the semester. Let's say, for the May semester, the result of the final exam will be out in August. So, after August, we got an exam meeting. By September, we need to produce a report for the upcoming semester, The cycle continues for every student at the end of each semester, and this will be repeated again and again. (Dr Hash, Line 148-152)*

4.5.4. Quality Assurance Unit

Furthermore, the findings from thematic analysis also showed that the HEP has a well-established quality assurance unit to continuously uphold the internal quality assurance of the ODL academic programmes. This quality unit organizes regular meetings to review and improve the existing curriculum, as well as the teaching and learning activities. Participants responded,

> *Like our schools, of course, the result always goes through the school board. We will set up our own QA Committee. There is a QA committee in each school, mainly to focus on the courses that we deliver. (Dr Tan, Line 143-146)*

> *We have a quality assurance team for every school. This team usually will have a meeting every fortnight in a month. From there, we'll see the current policy and implementation is okay or not. If not, we will do a revision. This is to make sure that the OBE implementation is maintained and achieved. (Dr Ru, Line 123-126)*

4.5.5. Stakeholders Involvement

The final theme established in this study about CQI is the involvement of stakeholders in academic quality improvement. From the responses, the participant asserted that there is a constant collaboration between the academic staff, academic board, and top management in promoting quality education in ODL. One respondent stated,

> *I could say the CQI implementation is a cooperation between lecturer and school for delivering the best to the students, while DVCA will monitor the implementation. (Dr Ru, Line 154-157)*

In addition to that, ODL students also play a vital role as one of the important stakeholders to give feedback to HEP. This ensures they are continuously satisfied with the learning environment and be constantly supported to address the desired learning outcomes.

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> *… we have feedback from the students. To look at which course is going better, which course has some problems. So, that's the way we always monitor and try to improve on it. (Dr Tan, Line 146-148)*

Furthermore, benchmarking practice with other higher institutions was also implicitly discovered in the interview finding of this ODL-HEP.

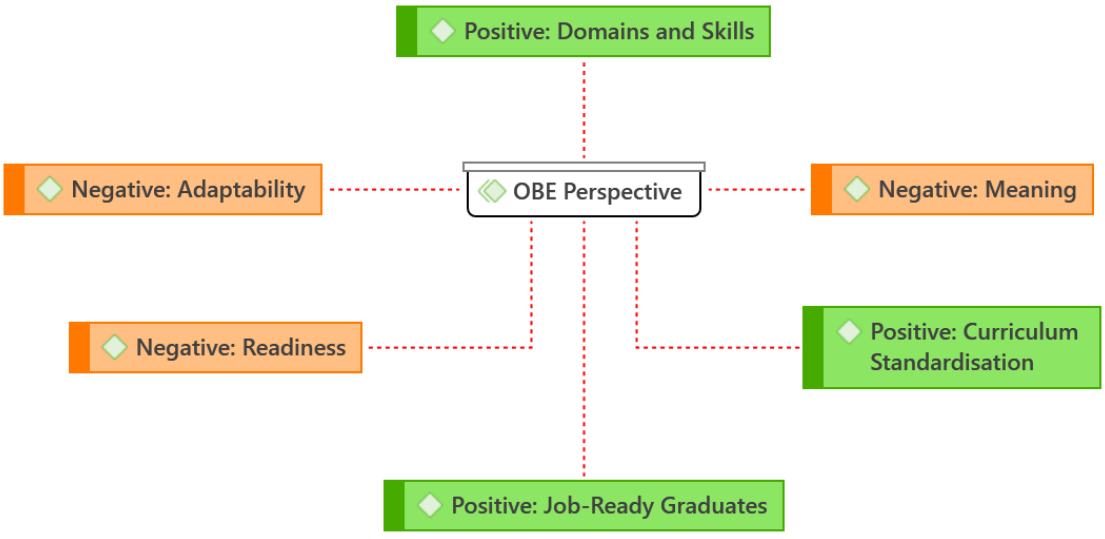
> *… we need to benchmark our university with other universities. (Dr Hash, Line 56-57)*

5. Conclusion and Recommendation

Outcome-based Education or OBE is an approach that highlights the achievement of learning outcomes of students through programme curriculum development, effective teaching, and appropriate assessment to measure the mastery of students on the desired domains and skills. In Malaysia, OBE implementation is incorporated into the noble qualification framework. However, it is vital to know that the standards and requirements in the qualification framework are not perpetual and these require constant revision or dynamic change to cope with the ever-changing and complex environment in the 21st century, including addressing the demand of the nation's educational policies and blueprints. The current trend for all public and private higher education providers (HEPs) in Malaysia is to comply with the requirements set in the Malaysian Qualification Framework version 2.0 or MQF 2.0, which was introduced in the year 2019 after its first mandated enforcement in the year 2011.

When all HEPs are in the midst of transforming the old curriculum to a new curriculum by embracing MQF 2.0, the sudden and unforeseen invasion of the Covid-19 pandemic a year after created massive challenges for a smooth and successful OBE implementation. In the context of this study, the researcher intended to address the four research questions (RQs) through a qualitative research design that purposively selected a HEP that provides an ODL curriculum. The findings to address RQ1 revealed that perspectives of the HEP about the OBE system were both positive and negative, with six emerged themes shown in the network diagram generated through ATLAS.ti in Figure 1.

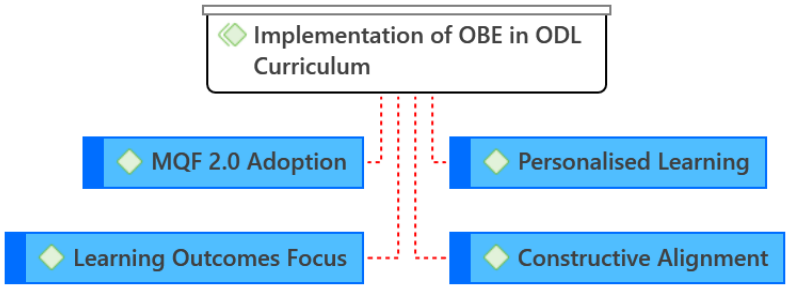
Figure 1: Perspectives about OBE in higher education by ODL-HEP (RQ1)



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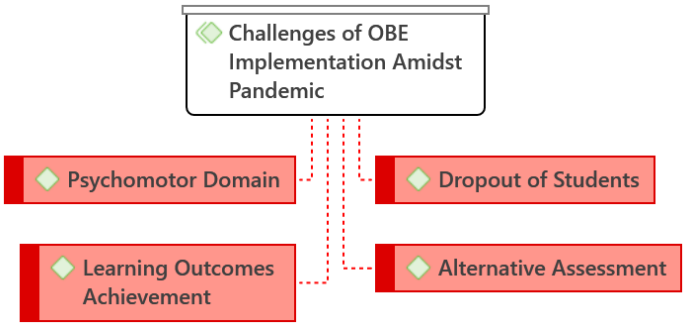
Meanwhile, the OBE implementation of HEP was found to be consistent and aligned with the requirements of the established and noble framework. The HEP has adopted the latest framework of MQF 2.0. The ODL curriculum, delivery, and assessment approaches were designed to address the intended learning outcomes specified in the framework. The findings to answer RQ2 about the OBE implementation of the ODL-HEP are presented in Figure 2 with four emerged themes.

Figure 2: Implementation of OBE by ODL-HEP (RQ2)



Owing to the pandemic, the challenge of addressing the psychomotor domain was reported to be apparent when physical classes were suspended. In addition, the application of alternative assessment possessed potential challenges and questionable effectiveness when the attainment of learning outcomes appeared to be less consistent as reported by the participants in this study. In addition, the issue caused by the high attrition rate also deserved attention and an immediate action plan to curb this scenario. The overall findings to address RQ3 about the OBE implementation challenges impacted by the pandemic are presented in Figure 3.

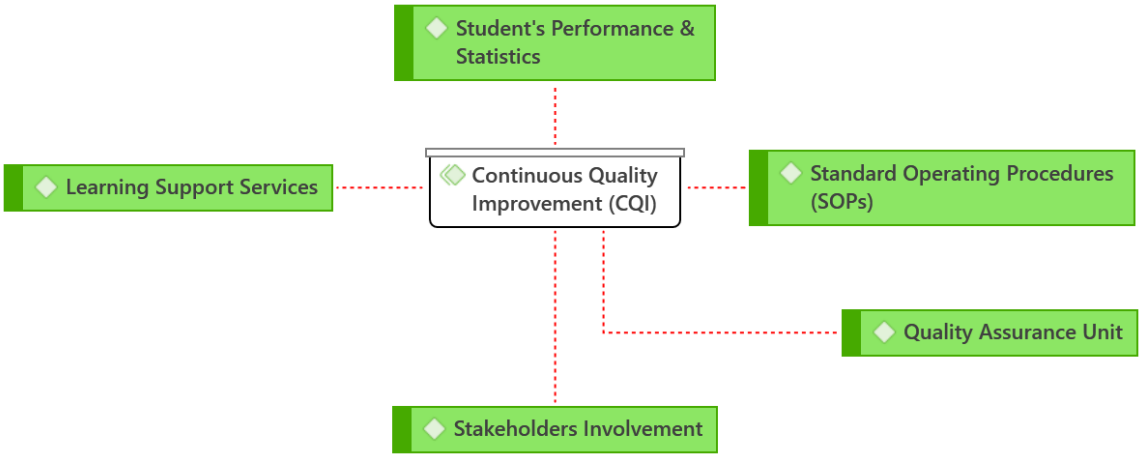
Figure 3: OBE implementation challenges faced by ODL-HEP (RQ3)



Despite the numerous challenges and emergence of areas of concern, the ODL-HEP was also found to set up a well-structured quality assurance unit to continuously review, monitor, and enhance the quality of OBE implementation in its academic programme, which is as shown in the network diagram in Figure 4 to answer RQ4. In addition, there were good mechanisms within the HEP to support continual quality improvement in ODL.

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Figure 4: CQI implementation by ODL-HEP (RQ4)



In sum, the findings from this study revealed that the ODL-HEP, although not being investigated in sequence, has generally covered the five significant stages when implementing the OBE system in their academic programmes, as highlighted by Talib (2011). Furthermore, the noble framework or MQF is found to have become the nucleus for standardising and guiding the curriculum implementation for HEPs in Malaysia. However, there is still a performance gap or potential room for improvement to fully optimise the ultimate goals of the OBE implementation under this noble top-down framework. For effectively implementing the entire framework or any other future educational models, it is recommended that consistent collaborations among various internal and external stakeholders in the higher education ecosystem with continuous discussions, regular monitoring, and feedback reviews are essential. Additionally, it is important for policymakers and HEPs to improve students' quality literacy about OBE and responsibility through workshops and active participation. Within the HEP itself, it is always believed that strong support and regular training provided by the top management can help to prepare and enhance the knowledge of instructors in designing all-inclusive pedagogies and assessment strategies, particularly to be more resilient and more equipped to deal with any future crisis. The pandemic crisis has reminded us that internal risk management for educational organisations shall go hand in hand for continual quality assurance. It is wise for us to realise that when the future is uncertain, there is a risk!

5.1. Limitations of Study

The findings of this OBE implementation were derived based on the cross-sectional qualitative data collected from four participants of a HEP that conducts ODL. The researcher would like to highlight that the results cannot be generalised to a larger population due to the small sampling size in the selected HEP without considering the saturation aspect. However, the researcher applied qualitative research design because the main intention was to gain a deeper knowledge of how the HEP that conducts ODL has implemented the OBE system in the current period of time and when the educational management has been affected by the unforeseen pandemic crisis. This study intended to explore the said phenomena rather than focusing on numerical representativity. Nonetheless, data source triangulation can be enhanced and considered in the future study to congregate information from several sources, such as including more academicians of all levels, committees of quality assurance from the same institution, or

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other institutions that offer ODL for acquiring more views and validating the data collected (Carter, Bryant, DiCenso, Blythe & Neville, 2014).

Ethics Approval and Consent to Participate

All procedures performed in this study involving human participants were conducted in accordance with the ethical standards of the institutional research committee. Informed consent was obtained from all participants according to the Declaration of Helsinki.

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Conflict of Interests

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