INSTITUTE OF TEACHER EDUCATION TRAINEE TEACHERS' PERFORMANCE THROUGH ONLINE ASSESSMENT DURING THE COVID-19 PANDEMIC

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ABSTRACT

The global COVID-19 pandemic has impacted a change in activities involving almost all levels of educational institutions including Teacher Education Institutions. Although virtual educational activities are already quite common before the pandemic, this practice has been fully implemented in a new norm at a time when the world is facing a pandemic. This paper aims is to analyze the practice of alternative assessment on trainee teachers of the Bachelor of Teaching Programme (PISMP) in the field of Islamic Education. Using data analysis method collected based on courses offered to these trainee teachers during the 2015-2020 academic sessions, the data findings were analyzed descriptively. The results of the analysis showed that the mean achievement of the trainee teachers through online assessment was inconsistent. Results related to the trainee teachers achievement grades obtained through face-to-face and online assessments are dominated by only one grade, which is A.

Keywords: alternative assessment, learning and teaching, online assessment.

INTRODUCTION

The current pandemic situation has directly impacted the operation of Educational Institutions including the Institute of Teacher Education (ITE) throughout Malaysia. To curb the spread of the pandemic, all conventional face-to-face educational activities ceased operation and was completely disallowed. In addition, all physical meetings, seminars, and educational programmes were conducted remotely via virtual information and communication technology (ICT). The use of internet networks with the role of computers, tablets and smartphones became more widespread. In this regard, to ensure that educational activities continue and that learning and teaching can be delivered effectively via online platform, lecturers and students must have a good mastery in the use of ICT.

Background

Many previous studies have agreed that online learning is the best and most effective way to operate education especially when the world is facing a pandemic (Aristovnik et al. 2020; Bao et al. 2020). This includes educational activities involving assessment for the purpose of assessing students' performance. Although online assessments were long practiced before the outbreak (Gaytan and McEwen.2007; Kim, Smith, and Maeng. 2008; Soesmanto and Bonner 2019: Tan 2019), this method is no longer seen as an option but a need to be implemented especially in the context of the operation of an educational institution.

At the Institute of Teacher Education (ITE), the consideration of lecturers in the implementation of *the Alternative Assessment in a hybrid* manner for the purpose of assessment has directly reduced the trainee teachers' reliance on the final examination in measuring the learning outcomes of a course. Trainee teachers were instead given assignments such as essay writing, presentation, article writing, quizzes and other assignments online with a certain period

according to the Student Learning Time (SLT) which has been set according to the Course Information. During the Covid-19 period, all the tasks given by lecturers were conducted almost entirely online via *the Google Classroom* platform.

Prior to the Covid-19 pandemic era, trainee teachers' performance for almost all courses in the Bachelor of Teaching Programme (PISMP), will be measured through continuous assessment as well as final exams in each semester. The situation slightly differ after the outbreak when the top management of the Institute of Teacher Education Malaysia (ITEM) had decided to adopt several strategies as an alternative assessment to replace the face-to-face final examination. The THE *was the* first to be implemented in place of the final examination in May 2020. The assessment through THE was carried out involving all areas and courses offered at all 27 ITE campuses including Islamic Education. The implementation of THE as an alternative to replace the final examination has been carried out until the December 2020 examination.

Based on the feedback received from lecturers and trainee teachers on the implementation of THE after several cycles, ITEM has decided to replace the THE with another type of alternative assessment, which is the *Open Book Test* (OBT). It was suggested that OBT be conducted online via the *Google Classroom* platform to replace the final examination which was scheduled in May 2021. To this day, OBT has replaced THE as an alternative assessment in place of the final examination to measure the achievement of learning outcomes and the performance of trainee teachers in all 27 ITE campuses.

PROBLEM STATEMENT

The trend of online learning and teaching continues to increase every year involving at least one course across colleges and universities both locally and abroad (Guangul et al. 2020). Similarly, in Malaysia, in line with the demands of 21st century learning, ITE has also participated in adapting online education as one of the face-to-face mixed teaching and learning *(hybrid)* delivery strategies since before the COVID-19 pandemic. However, to prevent the pandemic from spreading further, all educational activities through the lecture rooms that were previously practiced have been completely disallowed. All the face-to-face education programmes have been replaced by distance teaching methods through virtual spaces. The process of monitoring and evaluation by lecturers has also changed through the new normal method.

Past studies have talked a lot about face-to-face learning and distance learning online as well as the relationship with student performance at a time when the world has not been hit by the pandemic yet. The findings of their study have led to a comparison of learning and teaching between these two methods. (Driscoll et al, 2012; Fortune, Shifflett, & Sibley, 2006; Herman & Banister, 2007; Koory, 2003; Means et al., 2009; Tallent-Runnels et al. 2006; Helms. 2014; Warren & Holloman 2005; Weber & Lennon, 2007; Paul and Jefferson (2019).

In the context of research related to the comparison of student achievement through assessment, Coates et al. (2001) in his study stated that the scores of students who answered the examination questions using the online format tended to score lower. This view is further strengthened by Lang's finding (2013) that students' anxiety when completing answers by facing the possibility of technical problems during the examination process can also have a negative score effect on their performance (Lang, 2013). Next, Rutgerz (2021) also agrees that online exams are often seen as stressful for students. According to him, not all students have the convenience of online learning tools. In addition, the need for students to have better computer or mobile phone facilities to consistent internet access is also a challenge that students need to overcome (Siti Azura

et al. 2021). Other issues also include technical, materials, time management, study space and motivation (Mahmud & German 2021).

For lecturers, the lack of knowledge and expertise in using the e-learning platform for monitoring and evaluation purposes can also affect the effectiveness of the online educational process. The stress and disruption families face while working online can also affect their productivity and quality of work (Haryati, 2013). In addition, the lack of online interaction between lecturers and students can also lead to leakages in the delivery of learning, thus affecting the achievement score (Zhong. 2020).

Whatever the challenge, any educational activities should continue and should not be postponed. In this regard, all forms of educational activities including assessment and evaluation continue to be carried out to ensure that the educational process in ITE continues smoothly without any hindrance even if face-to-face activities for evaluation purposes are no longer allowed. In this regard, this study aims to identify the achievement of student performance using a full online medium to comply with the standards as a Higher Education Provider (HEP) to ensure that this new norm assessment method really helps the evaluation process in measuring learning outcomes on students.

Purpose of Study
1. Identify the mean percent level of students' performance through the results of the Final Face-to-Face Examination, (F2F), *Take Home Exam (THE)* and Open Book Test (*OBT) results.*
2. Analyze the mean difference in students' performance obtained through the Final Face-to-Face Examination, (F2F), *Take Home Exam (THE)* and *Open Book Test (OBT).*
3. Analyze students' performance grades in the Face-to-Face Final Exam, (F2F), *Take Home Exam (THE)* and Open Book Test (*OBT).*

LITERATURE REVIEW

The relatively limited, less flexible face-to-face learning facilities and the demands of rapidly evolving technology and communication directly impact the need for online learning. In addition to its easily accessible functionality, this medium is also considered the best because its capabilities can also have a positive effect in education. Planned training support and proper use of technology can produce the same student performance as face-to-face student learning performance (Lorenzo-Alvarez et al. 2019; Pail & Jefferson, 2019; Soesmanto & Banner, 2019; Tan 2019).

Online Learning and Teaching Interaction
The Movement Control Order announced by the National Security Council in mid-March 2020 led to the closure of many institutions in the education sector including Teacher Education Institutions. The transition of face-to-face mediums in learning and teaching sessions has shifted to online completely. In contrast to face-to-face learning which usually relies on lectures, online learning requires lecturers to act as facilitators in organizing activities. Online learning requires careful planning to create an environment that can stimulate active communication between lecturers and students as well as among the students themselves (Nor Aidawati & Mazidah 2021).
This sudden change in learning and teaching delivery has a direct impact on the willingness and ability of institutions and lecturers to effectively manage and deliver online teaching (Bibi Noraini & Jihan 2020; Garcia & Weiss, 2020). As for students, they need to overcome the

challenges of virtual learning by improving their self-skills in using existing digital platforms for learning purposes (Nor Aidawati & Mazidah, 2021).

Undoubtedly, the provision of technological equipment such as certain devices and internet access to follow the process of teaching and learning online has put some stress and burden. This can lead to concerns for students who lack the resources of facilities and lack of skills in the face of virtual learning sessions. These challenges can lead to less obvious problems and the lack of focus of students on a course taken in turn can affect their achievement and performance in the course (Norsaliza et al. 2019). This view is in line with the Munirah et al (2021) study that ineffective online learning can interfere with students' motivation. In this regard, the high readiness among students towards online learning needs to be in line with the internet access and suitable device facilities for educational activities to be successfully realized (Munirah et al.2021).

In other studies, Gonzeloz et all. (2020) found that the shift in teaching and learning interaction methods that occurred during the COVID-19 pandemic has had a positive impact on the achievement of their autonomous students is seen as achieving more objectives as the Movement Control Order period imposed on students has changed their learning strategies resulting in them being more focused and able to complete all the tasks given well. A different situation was obtained through the findings of a study conducted by Mahdy (2020) on the impact of COVID-19 on a total of 1392 veterinary students and researchers. A survey conducted by him on *Google Form* found that a total of 96.7% of study participants had stated that the effects of COVID-19 closures had affected their academic performance. Many of them are not able to continue learning practically. The constraints faced make it difficult for them to master their skills and improve efficiency in the veteriner field if they only receive education online.

Face-to-Face (F2F) Final Examination
Final examinations are commonly used as an assessment tool in measuring the achievement of the learning outcomes of a course in the form of summative tests. Final examinations are more likely to be formal and scheduled. The purpose of the final examination is to obtain information based on the level or scale of the parameters of the effectiveness of the student's learning outcomes in a certain period that is usually implemented at the end of the semester or study (Ahmed et al.2019: Kibble. 2017: Oermann et al. 2016). ITE trainee teachers from all fields and courses are required to sit for the final examination at the end of each semester for the purpose of assessment. The questions presented are structural and essay-reasoning in accordance with the standards alligned with the Table of Specification (TOS) which has been drafted by a team of academic experts. The final examination scores will be determined according to the weightage as stipulated in the Course Information (CI).

Open Book Test (OBT)
Open Book Test (OBT) is one of the alternative approach methods used as an assessment in assessing students through exams by allowing students to refer to primary and secondary resources either on a voluntary basis or online. The implementation of OBT can not only create a student environment rich in information resources, but also help students achieve a level of competency in producing critical answers, robust and accurate arguments as required by the questions given (Francis, 1982; Theophilides and Koutselini, 2000). In addition, students who are usually involved with the OBT assessment are able to push them towards thinking as well as to increase their level of analytical skills (Brightwell et all. 2004). This is because students need to process or process the information obtained from the text critically in writing all the answers to avoid the element of plagiarism. To achieve this, the formulation of the OBT question only involves the measurement of students' cognitive skills to High Level Thinking Skills (KBAT).

Past studies have stated that there are two points that underlie the need for the implementation of OBT as a measuring device at that time. First, an environment of professionalism that requires support, reference and deeper stimulation to students so as not just to give an answer. Second, OBT is necessary to find the answer to the question presented and then be able to solve the problem given (Baillie and Toohey, 1997; Broyles et al. 2005). In this regard, OBT is very suitable in measuring students' achievement as the field of professionalism is not entirely dependent on memory when in the field or at work. However, students need to be given exposure and training in advance so that they are better prepared and understand how best to use the reference materials when facing the OBT exam (Heijine et al. 2008)

Take Home Exam (THE)
The Take Home Exam (THE) has almost the same concept of assessment as the Open Book Test (OBT). This type of examination also allows students to use information and reference sources either text or online. In contrast to OBT, the time given for THE assignment is longer and usually involves more than one day. Students can also answer questions at any location according to the student's preferences and the assignment must be sent back digitally.

The selection of THE as a method of assessment is due to the function of the assignment which requires the setting of a higher level of taxonomy in accordance with the purpose of student engagement to apply knowledge, skills and values in making reasoning and reflection to solve problems, make decisions and be able to create something from the learning outcomes that follow. If the final exam is aimed at giving a determining grade to the overall achievement performance of the student, THE is designed to provide grades as well as real experience for students in the study period (Bengtsson, 2019; Lopez, Sanchez & Fernandez, 2011). Examples of tasks that are often posed in THE are critical thinking, written communication, reports and portfolios.

During the period of difficulties due to Covid-19, all sharing of training materials and tasks related to THE has been fully implemented using the platform online. The e-learning application that has been officially used by the entire ITE campus is through the *Google Classroom* application. However, all forms of educational technology other than those that are suitable and accessible in addition to *Google Classroom* can also be considered for use.

Student Achievement
Several previous studies have shown that there are no significant differences in student performance online or face-to-face (Paul & Jefferson, 2019). Studies show that there is no statistically significant difference in student achievement either face-to-face or online based on gender. The same findings were also obtained from Siti Balqis and Maisurah's (2021) study of students of the MARA Institute of Technology who attended the statistics course and found that students' achievement was not influenced by digital or face-to-face education. In contrast to the results of a study by Chalerm et al. (2020) which stated that students have scored higher scores when answering preferred questions and essays online than face-to-face examinations.

METHODOLOGY

The design of the study strongly emphasizes careful planning in the process of data collection by researchers when conducting research (Creswell 2002; Mc Millan 2001; Noraini 2010). The accuracy and appropriateness of the study design to the purpose is important for the purpose of validity and reliability of the findings produced. Data on the results and achievements of trainee teachers was collected involving the Bachelor of Teaching Programme (PISMP) in the field of Islamic Education. All these data will be analyzed statistically descriptively to get answers on the

level of student achievers in the THE, OBT and F2F examinations. A total of 3905 trainee teachers were involved in the data analysis. The year of student intake required for this study is from 2015 until 2020. Data obtained from respondents is collected and analyzed using a computer through *the Statistical Package for Social Science* (SPSS) version 25 software to assess the average, frequency, percentage, and even frequency.

STUDY RESULTS

Objective 1:
The mean percentage of student performance through the results of the Face-to-Face (*F2F)* Final Examination can be formulated through Table 4.1 below.

Was	Semester	F2F	Sum	Minimum	Maximum	Min%
1	8	PIMK3163	174	53	95	78.33
2	4	PIMK3083	198	34	94	66.07
		PIMK3093	198	50	97	81.11
3	2	PIMK3033	256	50	100	82.40
		PIMK3043	256	50	99	82.75
		PIMK3052	256	36	98	73.58

Overall, the average percentage of *F2F* examination achievement obtained was on average between 66.07 and 82.75 percent.

Analysis of data relating to the decisions of THE is also stated as stated in Table 4.2 below.

Table 4.2: PISMP Students' Performance: Take-Home Exam (THE)

Was	Semester	(THE)	Sum	Minimum	Maximum	Min
1	8	PIMK3163	188	50	96	79.17
2	4	PIMK3083	256	56	92	79.77
		PIMK3093	256	31	100	83.53
		PIMK3033	572	50	98	83.79
3	2	PIMK3043	572	50	96	79.66
		PIMK3052	572	60	96	83.95

Overall, the percentage of the achievement of the THE Exam obtained was on average between 79.17 and 83.95 percent. As for the achievement of student during the OBT examination, the analysis of the data obtained is as per Table 4.3 below.

Table 4.3: PISMP Students' Performance: Open Book Test (OBT)

| Was	Semester	(OBT)	Sum	Minimum	Maximum	Min
1	8	PIMK3163	198	51	97	81.53
2	4	PIMK3083	573	54	98	81.73
		PIMK3093	573	50	100	79.59
		PIMK3033	1490	40	100	78.10
3	2	PIMK3043	1490	50	100	77.56
		PIMK3052	1490	30	100	77.94

Overall, the percentage of *OBT* exam accomplishments obtained was on average between 77.56 and 81.73 percent. In summary, the level of performance of the percentage of students through the results of the Final Face-to-Face Examination, (F2F), Take Home Exam (THE) and Open Book Test (OBT) is as follows:

1. The mean percentage of student achievement for the overall Face-to-Face Final Examination (F2F) activities for PISMP students ranged from 66.07% to 82.75%.
2. The mean percentage of the Take Home Exam (THE) ranged from 79.17% to 83.95%.
3. The percentage of overall student achievement through the Open Book Test (OBT), the analysis found to be between 77.56% and 81.53%.

Objective 2:

The summary of the mean difference in student achievement through different testing methods can be found in Figure 4.4 below.

Figure 4.4: Comparison of Mean Percentage of Achievement (PIMK3163)
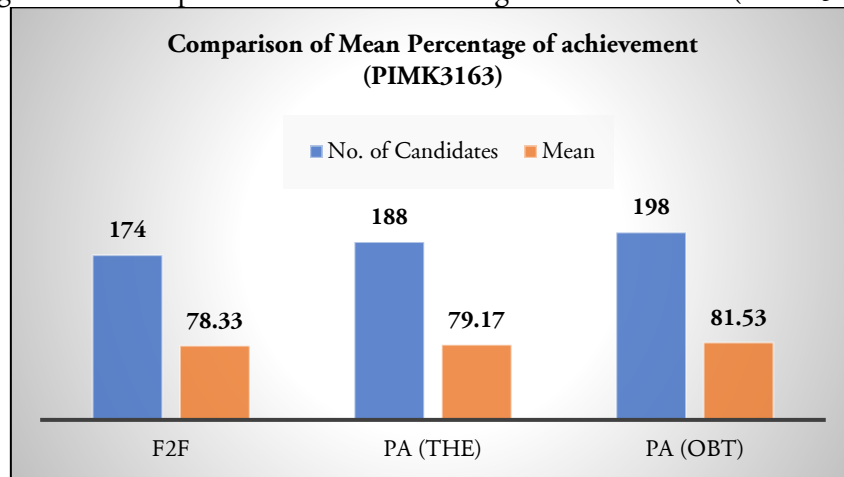
Based on Figure 4.4, the findings show that the mean highest percentage is through (OBT) at 81.53% while the lowest mean percentage is (F2F) at 78.33%. The difference in the percentage of student achievement based on the course code can be illustrated through Figure 4.5 and Figure 4.6 below.

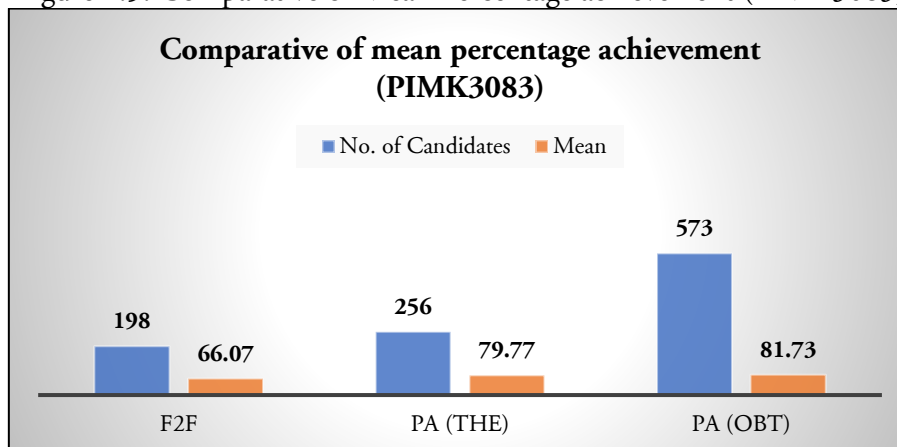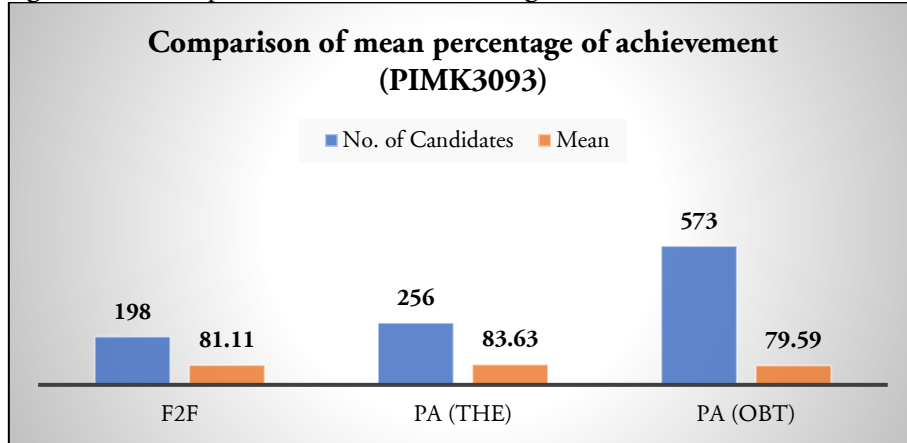Figure 4.5: Comparative of Mean Percentage achievement (PIMK3083)

Figure 4.6: Comparison of Mean Percentage of Achievement (PIMK3093)

Comparison of mean percentage of achievement (PIMK3093)

No. of Candidates   Mean

	F2F	PA (THE)	PA (OBT)
No. of Candidates	198	256	573
Mean	81.11	83.63	79.59

Information on the difference in the percentage of achievement based on the course code can be illustrated in Figure 4.7 to Figure 4.8 below.

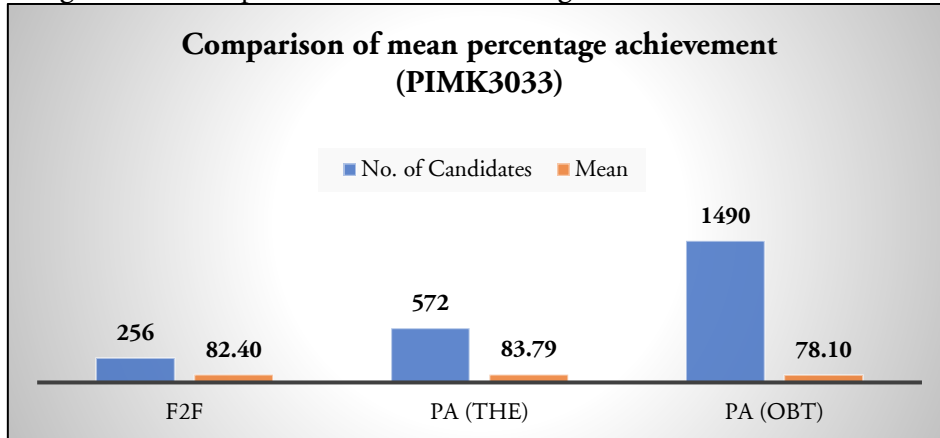Figure 4.7: Comparison of Mean Percentage Achievement (PIMK3033)

Comparison of mean percentage achievement (PIMK3033)

No. of Candidates   Mean

	F2F	PA (THE)	PA (OBT)
No. of Candidates	256	572	1490
Mean	82.40	83.79	78.10

Figure 4.8: Comparison of Mean Percentage Achievement (PIMK3043)

Comparison of mean percentage achievement (PIMK3043)

No. of Candidates   Mean

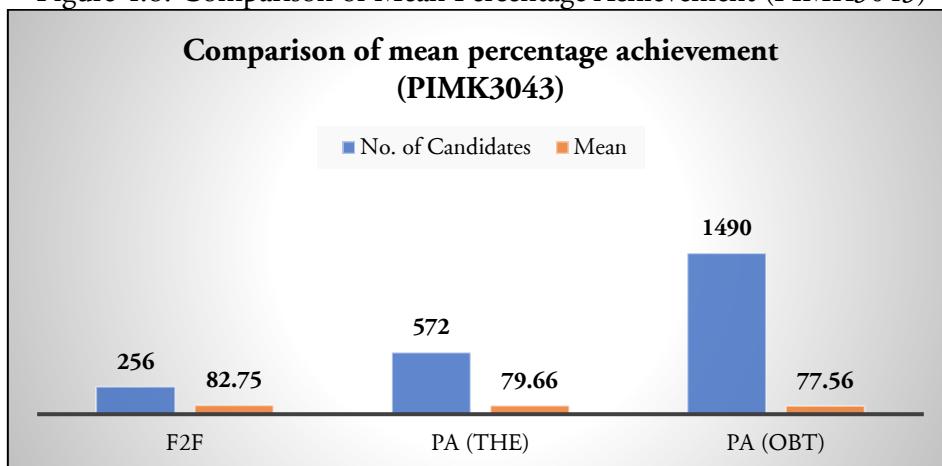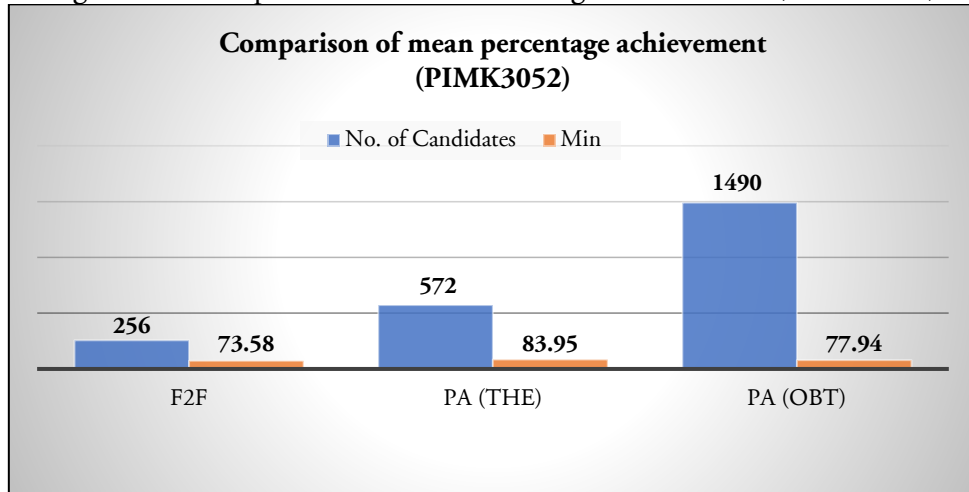|	F2F	PA (THE)	PA (OBT)
No. of Candidates	256	572	1490
Mean	82.75	79.66	77.56

Figure 4.9: Comparison of Mean Percentage Achievement (PIMK3052)

Overall, the results of the analysis showed that the mean through three testing methods of all three course codes was uneven and variable. This proves that the highest mean percent of achievement obtained from Take Home Exam (THE) through PIMK3033 (83.79%) and PIMK3052 did not indicate the same situation as the course code PIMK3043 (79.66%). The same situation is also reflected in the mean percent of the lowest achievement. The results of the analysis found that the lowest percentage of achievement was obtained through the final face-to-face examination (F2F) at 73.58% for the PIMK 3052 course. The lowest mean percent of achievement was also obtained for the Open Book Test (OBT) through course code PIMK3033 (78.10%) and PIMK3043 (77.56%).

Objective 3:

Referring to the overall diagram, it can be formulated that the percentage of grade A was found to have dominated the student's achievement compared to the rest of the grade.
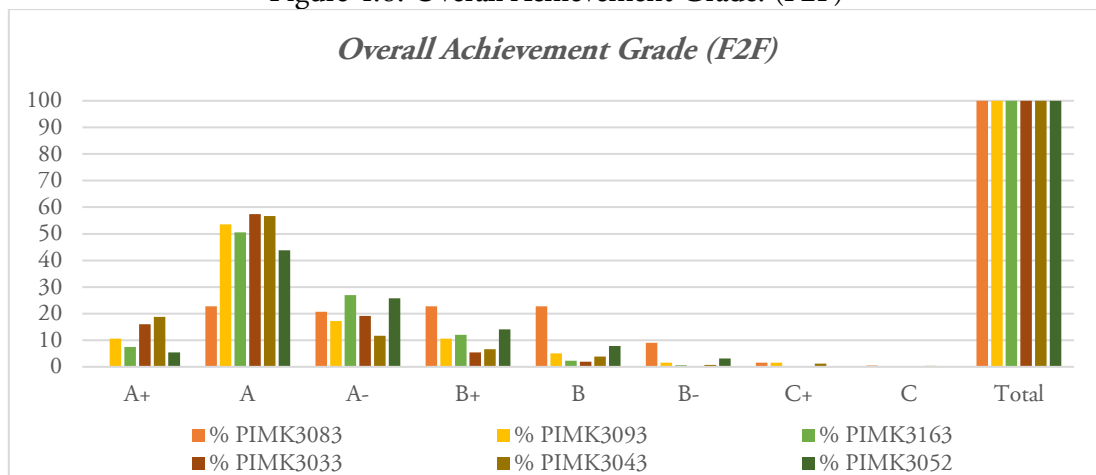
Figure 4.6: Overall Achievement Grade: (F2F)

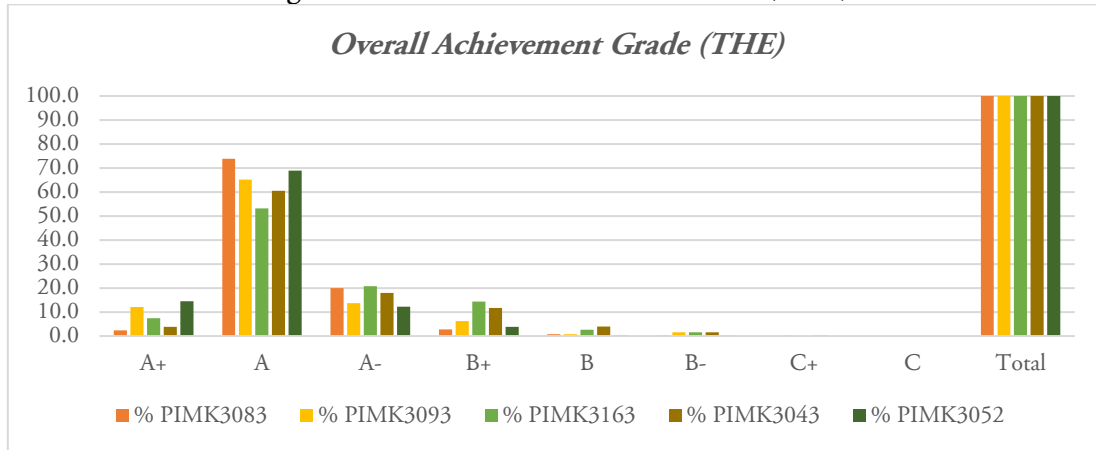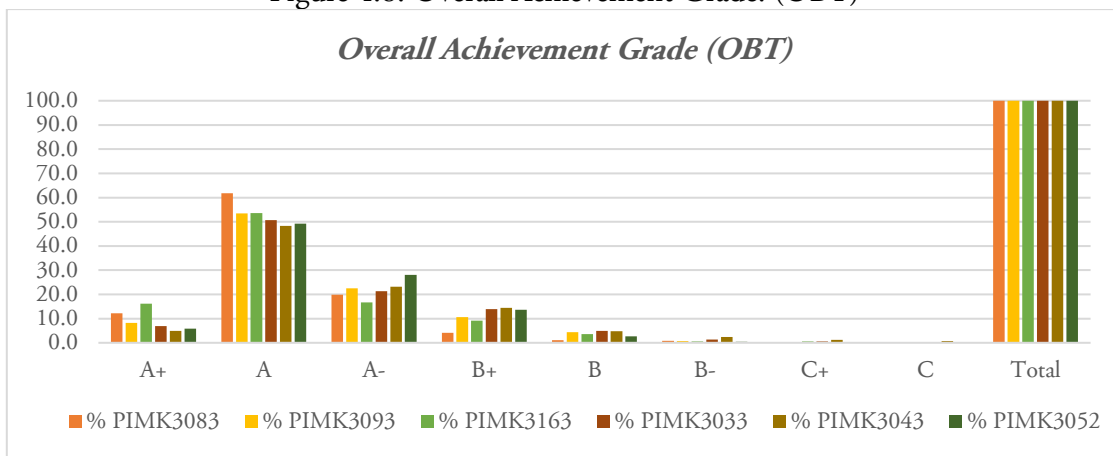Figure 4.7: Overall Achievement Grade: (THE)

Figure 4.8: Overall Achievement Grade: (OBT)

In summary, for students' grade achievement obtained through the final Face-to-Face Examination, (F2F), Take Home Examination (THE) and Open Book Test (OBT) is grade A is as follows:

1. The highest percentage of A grades obtained through the final Face-to-Face Examination (F2F) was 57.4%.
2. The highest percentage of A-grades for the Take Home Examination (THE) was 73.8%.
3. The highest percentage of A-grades through open Book Test (OBT) was 61.8%.

DISCUSSION OF FINDINGS

The adaptation of online education is increasingly widely used not only as a medium of teaching and learning delivery, but also implemented on activities involving assessment for evaluation purposes (Guangu et al. 2020). Previous studies have found that there were no significant differences in students' performance in face-to-face or online exams (El-Said, 2021; Warren & Holloman 2005; Weber & Lennon, 2007; Paul & Jefferson 2019; Siti Balqis & Maisurah 2021). This is because all resources and needs of face-to-face teaching can be transferred to students through increasingly sophisticated digital technology. However, there is also a difference in the findings of the study which states that students' achievement through online testing is better than the traditional face-to-face exam (Beal et al. 2014; Chalerm et al. 2020: Lorenzo et al. 2019; Mean et al. 2010; Westhuis et al. 2006).

The results of this study found that the achievement of PISMP trainee teachers in the field of Islamic Education involving all indicated courses is good, with a good percentage and and grades especially in the Take Home Exam (THE) as well as the Open Book Test (OBT). Both types of assesment mentioned have been fully implemented online. The result can also infer that the PISMP trainee teachers are always ready and able to follow all the assessment sessions well. This statement is consistent with the findings of Sewi Surani and Hamidah (2020) which found that 80% of students who are always willing to participate in all educational-related activities despite following them online. Positive results were also obtained by Azura et all (2021) which found that 63% of respondents agreed that the overall activity in online learning had had a beneficial effect on them. In addition to being widely accessible, this strategy also makes students more independent and confident as they are exposed to various information and educational resources across the world and borders.

The findings of this study are seen in line with the discussion of past studies (El-Said 2021; Warren & Holloman 2005; Weber & Lennon, 2007; Paul & Jefferson 2019; Siti Balqis & Maisurah 2021 Soesmanto & Bonner, 2019) which shows that there is no difference in student achievement performance either face-to-face (F2F) or online. The performance obtained by PISMP students through THE and OBT implemented online is also very similar to the achievement obtained through the Final Examination (F2F). The taxonomic level presented through questions from THE and OBT involves High Level Thinking (HLT) skills. In line with the aim of measuring course learning outcomes (CLO) on students as targeted, THE and OBT are also relevant as an alternative method in testing for the purpose of such assessment.

This finding is slightly different from the findings of Adnan and Anwar's (2020) study which found that online educational activities are difficult to produce the impact that is envisioned especially on backward countries such as Pakistan as there are many students in the country facing technical and financial problems such as accessing the internet and equipment facilities. The lack of resources at the academic Institution level directly affects the ability of the institution to respond at the level of the giver and the tendency of marginalization on students to participate in education digitally (Zhong.2020).

In conclusion, the results showed that the average scores and grades of achievement of PISMP students from the Islamic Education field through all the courses involved were good. However, the pattern of increase and decrease in the average percentage score obtained was inconsistent between online assessment (THE and OBT) or face-to-face final examination (F2F). These findings were like the findings of other studies (Hope et al. 2021; Warren & Holloman 2005; Weber & Lennon, 2007; Paul & Jefferson 2019). Based on the results of inconsistent achievement through THE and OBT for example, low internet access capacity and smoothness due to weather disruption or rural location position is said to contribute to the achievement of low grades (Mohd Amzari et al. 2020). In contrast to the view of Schneider et al. (2018), the longer allocation of time through online assessment gives students more time to get more information resources from technology support (ICT) than the Face-to-Face Final Examination (F2F). However, the institution must provide anti plagiarism detection to ensure that cademic integreti continues to be preserved to limit the potential for misconduct on students during the online assessment exercise (Heijne et al. 2008)

SUGGESTIONS

To ensure that the assessment and evaluation at the ITE level can be carried out effectively and productivel; ITE lecturers, students and all academic staffs must have basic knowledge using pre-determined e-learning applications such as the *Google Classroom* application to facilitate the handling of any educational activities either during learning and teaching sessions or for assessment purposes. In addition, the active and positive interactions that occur between lecturers and students online in the distribution of information related to learning and teaching need to be improved from time to time to reduce the concerns of students to perform all the tasks given well.

This study only involves descriptive data analysis for the purpose of looking at the achievements of PISMP students in the field of Islamic Education based on the same course code using different testing methods (F2F, THE and OBT). More detailed studies for the same purpose are proposed to be conducted experimentally involving the same course code, same semester, and different tests (F2F, THE and OBT) so that the findings are more empirical in nature. Other researchers are also advised to involve a wider number of samples and cover the course so that researchers can compare in more detail.

CONCLUSION

The diversity of these views shows that the students' achievement is not solely determined through the knowledge delivery platform used even when it involves changes to the format of the examination. On the other hand, there are also those who are of the opinion that the teaching method presented is the one that affects the student's achievement more (Cindy et al.2010). In this regard, lecturers should believe and be confident that the implementation of online assessment in compliance with certain conditions is also capable of meeting the same standards and standards as face-to-face assessment.

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