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Designing Assessment, Learning Strategies, and Obstacles in Facing Computer-Based Madrasah Exam on the English Subject

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Abstract

The objectives of this study were to describe how teachers design the Computer-Based Madrasah Exam (CBME) questions for English subjects, to investigate learning strategies students use, and to explore the obstacles the students face in this exam. Questionnaires and interviews were used as the instruments to collect data for this study. A number of 95 ninth-grade students and two English teachers of Madrasah Tsanawiyah Negeri No. 1 (MTsN 1; this school level is equivalent to junior high schools) in South Aceh, Indonesia, participated in this study. The data were analyzed quantitatively and qualitatively using thematic analysis. The results revealed that in designing the assessment of CBME, the teachers used four strategies which were preparing for the change in the final exam model, selecting sources in designing the exam questions, preparing students to face the exam in the new model, and resolving obstacles in developing the exam questions. Meanwhile, the students used five strategies in facing the exam, they are managing time, motivating themselves, creating study groups, practicing, and strengthening basic abilities. Furthermore, the obstacles that the students faced in the exam are a lack of skill in using a

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computer for the exam, slow internet access, limited computer availability, limitation of vocabulary mastery, taking time to understand questions, and peers' interventions. Thus, this study suggests that more training is still needed for teachers in designing the assessment model of CMBE and the school also need sufficient facilities before they enforce CMBE to their students.

Keywords: Computer-Based Madrasah Examination (CBME), EFL students, English subject, strategies, assessment design.

1. INTRODUCTION

Along with the development of information technology and communication, many schools carry out their learning evaluation activities using information technology resources. Technology information and communication have an essential role in current and future activity rates; one of them is in the element of education (Haleem et al., 2022). The role of information and communication technology in the government system, especially for implementing education, is considered essential to better support the quality of education. Nevertheless, it cannot be denied that students still find it challenging to do examinations via computer, and this is due to their limited ability to use the computer, especially in Indonesia (Muslem et al., 2018; Silviyanti & Yusuf, 2015).

Assessment is one mechanism that always exists in a language teaching process. Brown (2003) stated that assessment in language teaching is an ongoing process encompassing a much broader domain. In Indonesia, the National Exam (NE) has been changed to the Minimum Competency Assessment (MCA) this year. However, the Minister of Education and Culture, Nadiem Makarim, has released an appeal (Letter Number 1 of 2021) of eliminating final examinations in an emergency case during the spread of Corona Virus Disease (COVID-19) at the time (Zulfikar, 2022). Many people complain that students in rural areas were not receiving the same treatment as those who study in urban areas (Kusuma, 2022; Luthfiyyah et al., 2022). Schools in urban areas have better and adequate facilities for teacher-student teaching and learning processes compared to remote areas. No matter how the educational system works, students all over the country, whether in urban or rural areas, must face final exams in various subjects including English. Consequently, students in rural areas had been obtaining lower scores in National Exams (NE) (Arnista, 2015), and these scores were used as the standardized educational decisions in whether students passed or not in these exams to graduate junior and senior high schools (Sugianto, 2016).

Thus, based on the Minister of Education and Culture's appeal, starting in 2023, the final examination is carried out by each school, known as the computer-based exams. These exams are conducted by public and private schools, including *madrasah*. *Madrasah* are public and private schools from the elementary to the senior high levels that based their curriculum more on Islamic teachings. Hence, students' graduation is determined based on the report card scores of each semester on attitudes and exams held by the school, respectively. The efforts to improve students' abilities can be seen before students take the exams. Usually, they are given additional lessons on the subjects that are to be assessed at the end of every semester. It is done consciously as

an effort to help students prepare for the exams. The examination is also used to evaluate the quality of schools by the Ministry of Education and Culture. Every school has different entry requirements, but the exam results are highly considered.

Based on the researchers' preliminary observation at one of the *madrasah* in a remote area in South Aceh, Indonesia, teachers, and students still struggle with the computer-based exams, especially in the English subject. Many of the students informed that they mostly answered the exam questions in English through "guessing". Moreover, after the exams were completed, the correct answers were never provided by the teachers, in which the students expected that these answers could help them learn from their mistakes. Meanwhile, in CBME, students must achieve the Minimum Mastery Criterion (MMC), which is a score of 70. If not, this will hinder their effort to enter the next level of the school, such as high schools for junior high students or the university for senior high students. Of course, the implementation of CMBE is different from the previous model of exams where the current one applies technology. Accordingly, this study investigates on describing how teachers design the Computer-Based *Madrasah* Exam (CBME) questions for English subjects at this *madrasah* in South Aceh, and further studies the learning strategies students use and the obstacles they face in following this exam model. Thus, the research questions proposed for this research are:

1. How do the teachers design Computer-Based *Madrasah* Exam (CBME) questions for the English subject?
2. What learning strategies do students use in facing the CBME?
3. What are students' obstacles in facing the CBME?

2. LITERATURE REVIEW

2.1 Assessment

The process of gathering data to support decisions about students, curricula, programs, schools, and educational policy falls within the broad definition of assessment. According to Ioannou-Georgiou (2003), all methods used to learn more about a learner's knowledge, ability, comprehension, attitudes, and motivation are together referred to as assessment. In addition, Hall and Sheehy (2010) said that while assessment might mean different things in various situations, it is inextricably linked to attitudes, values, beliefs, and occasionally prejudices.

Chappuis and Stiggins (2002) mentioned that assessment is one of the ideas in which learners should be part of the assessment process. They proposed three critical components of assessment for learning (Chappuis & Stiggins, 2002). The first one is the assessment of the students' involvement. Here, students are actively involved in the assessment process; they decide what constitutes a successful performance, construct the assessment, and learn how to score using teacher-provided scoring models. Teachers are the models for students to learn something meaningful in their performance (Thoonen et al., 2011). Thus, feedback should be clear, descriptive, and illustrated to students by teachers. The last assessment is the skill of self-assessment. Besides receiving guidance from the teachers on how to give their peers feedback, they should also be guided on how to evaluate themselves (Hattie & Timperley, 2007). This issue ought to encourage learners to engage in self-directed learning that calls for self-

evaluation. Students should be prompted to consider their objectives, level of proficiency, and how they might collaborate. Self-evaluation and feedback are essential components of this process.

Since it establishes whether or not educational objectives are being met, assessment is a crucial component of instruction (George Lucas Educational Foundation, 2008). Grading, placement, career development, curricular selections, instructional needs, and occasionally financial decisions are all impacted by assessment. Due to the fact that it aids in learning, assessment is a crucial component of instruction. It is possible for students to assess their understanding of the course material when they can monitor their performance in class (George Lucas Educational Foundation, 2008).

2.1.2 Tests

A test is one of the assessments to measure students' knowledge and skill. Brown (2004) stated that a test measures a given domain's ability, knowledge, or performance. In addition, a test is an instrument that is used to measure a condition by a specific rule (Arikunto, 2013; Sugianto, 2016). A test may be given orally, on paper, on a computer, or in a predetermined location, and it requires test-takers to demonstrate or carry out a particular set of skills.

Test also has some types. There are four different types of tests (O'Malley, 2015). The first one is diagnostic testing. This testing is like 'diagnosing' what students know and do not know. This test happens at the start of a new phase of education such as when the students start learning a new unit (Shoyzokovich & Dilnur, 2023). Formative testing is the second type of testing. During a lesson, this type is used to monitor student learning and is intended to help students show that they have grasped the subject (Dandekar, 2020). This type of test happens continuously, and students' performance on formative testing tends to get better as a lesson progresses. The next one is benchmark testing, which checks whether students have mastered a unit of content (Shoyzokovich & Dilnur, 2023). The last type of testing is summative testing. This test serves as a checkpoint at the end of the course year to gauge the overall amount of content students acquire. (Dandekar, 2020).

2.2 Learning Strategies

A learning strategy is a way that explains how a student learns or how each one focuses on the process and masters new and difficult information through various viewpoints (O'Neil, 2014). Learning strategies can then be described as how people understand and remember information. According to Nisbet and Shucksmith (2017), learning strategies are generally defined as absorbing, organizing, and processing information. A person's learning strategy is a combination of methods to absorb information and then organize and process that information. This implies that every student has different ways or habits of learning, especially in matters relating to information systems (Fletcher-Wood, 2021).

It is common that students at times face some difficulties in preparing for their tests (Sherratt, 2014). Sometimes, the problems faced by the students in preparing for the examination is in developing their fundamental skill such as managing study time,

motivation, creating a study group, practicing, and strengthening basic abilities. These strategies are such as explained below.

2.2.1 Managing study time

Preparing for exams takes time and hard work for most students (MacCann et al., 2012). This leads to stress and anxiety (Gibbs, 2006; Misra & McKean, 2000; Natarajarathinam et al., 2009). According to Pressley et al. (1997), some other difficulties students face in preparing for exams are a lack of preparation of appropriate kinds and misplaced focus on the course material. The key to accepting and dealing with this final exam is time management (Claessens et al., 2007). This arrangement can help them to be more optimal, such as using a blank weekly planner to organize the study period. Setting realistic limits on the number of studies and the segments that the students can do is also important. This breaks down large tasks into smaller components and gives students small goals to achieve. They may only require themselves to study up to six hours in one day (Bassett et al., 2020). They may only plan to study subjects for up to one hour (Drach-Zahavy et al., 2022).

Gibbs (2006) mentioned that to facilitate the arrangement of study time; students can also make learning packages based on topics and material. They may already understand the material but need help when they meet a simple and slightly different question (Stanley, 2000). Teachers should teach them to be aware of every material, and also provide simple sample questions. Gibbons (2003) added that students must focus on completing learning packages with weekly targets.

2.2.2 Motivation

Students can motivate themselves with positive consequences to prepare for their exams (Sherratt, 2014). They also can motivate themselves by taking a break and giving rewards to themselves. Students can set clear daily targets to achieve (Konrad et al., 2014). After the target is reached, students can provide rewards for themselves.

Besides that, students should use new methods based on their perspective to understand the material they will learn. Cooperstein and Kocovar-Weidinger (2004) mentioned that students should not feel they have a limited learning method. They can learn new and exciting information to improve their understanding and exam scores. They can search for the most exciting topics, then find a simple method that can be carried out. This can further motivate them to understand the materials in their way. For instance, a change from paper-based to computer-based learning and assessment can empower students' motivation (Perry et al., 2022).

2.2.3 Creating a study group

Forming study groups can benefit students (Jaques & Salmon, 2006). Before the final exam, group learning becomes an alternative for the students to learn and understand the materials together (Knight & Pye, 2005). According to Susanti (2015), group studies give access to more information and maximize learning. Susanti (2015) also mentioned that by having study groups, cooperation is developed; learning alone has limitations in terms of grasping concepts to be learned, but in groups, students work together to understand the materials being studied. In group learning, they can

discuss all the materials and find solutions to difficulties encountered (Muslem et al., 2022; Susanti, 2015). Relaxation is gained when they know that they have each other in the study group, and thus, this reduces stress levels in preparing for exams.

2.2.4 Practicing

Practice is essential when facing exams. Yin et al. (2022) suggested that students try to do a peer assessment to test their knowledge and understanding of the materials and skills. It is better to clarify in advance what they are doing and not knowing, and what they can and cannot do, rather than finding this for the first time in an actual test. Only by testing themselves and identifying gaps can they know what to do. They can try to replicate as much as possible the conditions of the exam situation to strengthen their preparation for exams (Silverman, 2021).

2.2.5 Strengthening basic abilities

Strengthening abilities in facing exams increases confidence and motivation in achieving goals. For example, in the English subject, there are four skills to master, they are writing, reading, listening, and speaking (Appelbaum & Honegger, 1998; Hvalshagen et al., 2022). When students have a firm grasp of these skills, they will be more self-assured during the exam. Grammar is another important skill to strengthen in facing English exams. This skill is especially dominant in computer-based tests in which grammar plays a big role in their comprehension of texts.

2.3 Computer-Based Madrasah Exam

A Computer Based Test (CBT) is an educational evaluation system that is carried out using computer software which is later used to present test questions, accommodate participant responses to the test and then store and analyze electronically (Rosidin et al., 2019). A CBT is also directly connected to the internet network, often called an online test.

CBT aims to help teachers carry out assessments, scoring, and implementation of tests. Through CBT, teachers can further evaluate the effectiveness and efficiency of its implementation (Darmawan & Harahap, 2016; Saukah & Cahyono, 2015). CBT is developed based on Computer Assisted (CAI) (Burns & Bozeman, 1981; Kaye & Ehren, 2021), which specializes in instruction or remediation presented on a computer. Implementing a CBT is similar to learning with CAI, in which all activities use a computer. CBT is carried out in a class or laboratory that has an internet network connection and the system to run it (Beatty, 2013; Chow et al., 2008; Soe et al., 2000).

Tilaar (2006) informed that the Indonesian government's efforts to evaluate education nationally are by setting the standardization of national education. CBT is also part of an effort to map educational problems to formulate policies for National Education. The use and utilization of computers as instructional media, following the instructional process, are planning, organizing, scheduling teaching, and conducting student assessments (tests), collecting data about students, performing statistical analysis of data learning, and making notes of the learning progress.

3. METHODS

This study employed a qualitative method in nature. The qualitative means whereby the data collected were analyzed using thematic analysis.

3.1 Research Site and Subjects

This study was conducted at Madrasah Tsanawiyah Negeri No. 1 (MTsN 1; this school level is equivalent to junior high schools) in South Aceh, Indonesia. The subjects of this study were 95 ninth-grade students and two English teachers at the school. The students were divided based on their exam scores starting from the highest to the lowest. The English teachers were those who designed the questions for the Computer-Based *Madrasah* Exam (CBME).

3.2 Research Instrument

To obtain the data for this study, two instruments were employed: an interview and a questionnaire. The interview was conducted with the two English teachers. A number of 10 questions were asked, and they were adapted from [McNamara \(1999\)](#) which inquired about designing CBT in general and then revised to suit the CBME of the English subject in specific. The results from the interview were to answer the first research question.

Meanwhile, the questionnaire that contained 35 items was adapted from the Perspectives Questionnaire: Measuring Propensities by [Baryla et al. \(2019\)](#) to take the viewpoints of the agent or recipient to find out deep responses from the students on their learning strategies and obstacles in facing CBME. The data from the questionnaire aimed to answer the second and the third research questions

3.3 Technique of Data Collection

The interview with the teachers was conducted during school hours. Each interview lasted for about 20-30 minutes and the sessions were recorded. In this article, the first English teacher is coded as ET1, and the second English teacher is coded as ET2. Meanwhile, the questionnaire was in Google Forms and distributed to the students via WhatsApp messenger group. Filling in the forms took about 15-20 minutes of the students' time. They were given three days to return the questionnaire to the researchers.

3.4 The Technique of Data Analysis

The data collected were analyzed quantitatively and qualitatively. In analyzing the qualitative data from the interviews, six steps were followed as suggested by [Braun and Clarke \(2006\)](#): (1) familiarizing with the data, which was done by listening to the audio, (2) transcribing them, and (3) re-reading the transcripts. While taking notes, (4) the coding process was done to identify and label relevant data to the research questions, then there were the processes of (5) searching for themes, naming the themes, and deciding how the essence of each theme should be presented, and (6) finally, preparing the research results. In identifying themes, thematic analysis was

employed (Castleberry & Nolen, 2018; Vaismoradi et al., 2013). Thematic analysis is a method for analyzing qualitative data that involves reading through a set of data and looking for patterns in the meaning of the data to find themes. In the meantime, the data from the questionnaire were analyzed quantitatively using percentages (Taylor-Powell, 2003).

4. RESULTS

In this part, the researchers present the study's results and discussion. As mentioned, this study investigates how English teachers design CBME for the English subject at a *madrasah* in South Aceh, Indonesia, and the students' strategies and obstacles in facing the CBME.

4.1 Designing Questions for Computer-Based Madrasah Exam (CBME)

Based on the interviews with the two English teachers, the researchers found four specific themes in relation to their strategies in designing questions for the CBME of their school. They are the change in the final exam model, sources used in designing the exam question, preparing students to face the exam, and overcoming the obstacles in developing exam questions.

4.1.1 The change in the final exam model

The policy change in national exams from paper-based to computer-based examinations has pros and contra (Chow et al., 2008). Upon the appeal from the Minister of Education and Culture, Nadiem Makarim, in 2021 concerning the elimination of the final national examinations and for it to be replaced by the implementation of school examinations through CBT, the *madrasah* education system must form a committee to prepare for the CBT exam. Each committee at the district level selects several teachers who will be the designer of the questions related to the subjects to be tested in the exam. A discussion on the physical facilities (i.e., infrastructure) and non-physical facilities (i.e., Competency Standards and the Minimum Criteria of Mastery Learning, or *Kriteria Ketuntasan Minimal*, abbreviated as KKM) was conducted. Accordingly, MTsN 1 South Aceh selected two English teachers as the question designer for their CBME.

In terms of the suitability of the CBME for their school, the following excerpts were obtained from the two teachers:

- (1) For me, the National Exam (or *Ujian Nasional*, abbreviated as UN) is perfect for measuring students' achievement throughout Indonesia. It can be used as a benchmark for taking the college entrance test. While the exam in the *madrasah*, besides assessments as a benchmark for students' graduation, we also assess students' moral values. For me, these two exams still exist according to their respective functions. (T1)
- (2) After I saw the first results of CBME, I think it is suitable to be further implemented in the school, because last year, the national exams in remote areas experienced difficulties. The questions that are made do not match the conditions of students in these areas. The potential of students in these areas differs from that in the city where teachers and students are provided with lots of tutoring to

improve their knowledge of the learning materials. Implementing CBME is appropriate because it is adjusted to students' abilities in remote areas such as South Aceh. (T2)

Other excerpts from the interviews in relation to this theme are provided below:

- (3) Very good, yes, (I agree) with this breakthrough. It is good that the schools can determine the graduation of their students themselves. Hopefully, this will not decline the Indonesian education system. Schools can continue to compete.
- (4) The government needs to assess in advance to what extent students' abilities are in remote areas and cities. Schools in cities have full preparation with learning tools and technology. Meanwhile, in areas such as South Aceh, remote areas still need to be paid attention to. If future students in remote areas and the cities can compete, then there will be no problem.

From the interviews, both teachers agreed that the CBME was suitable to be implemented in the school, and other *madrasah* as well, because it is adjusted to students' abilities in remote areas such as South Aceh. The CBME in English did not only assess students' ability on language skills based on the KKM but also on students' moral and religious values as required by the curriculum of the *madrasah* educational system. These issues were embedded in the questions for the English subject in CBME. Hence, using a model of suitable testing encourages and empowers students' knowledge and experience in learning (Rosidin et al., 2019). T2 further suggested that the government needs to assess in advance to what extent students' abilities are in remote and urban areas to ensure that both receive fair treatment, in terms of physical and non-physical facilities, from the government.

4.1.2 Sources used in designing the exam questions

Both teachers focused on the rules for making the CBME questions, such as concentrating on level 1 which consists of cognitive level C1 and C2 knowledge of as much as 20% (see Erdiana and Panjaitan, 2023) for the cognitive domain of the revised Bloom's taxonomy employed in the English curriculum in the Indonesian education system). Then, level 2 consists of mental level C3 in skill as much as 50%. And level 3, which consists of cognitive levels C4, C5, and C6, known as a HOTS problems, is as much as 30%. The English materials tested have been given to the students from grades 7-9. Thus, teachers must create suitable materials with relevant indicators (Achmad et al., 2023), and the questions must be within the syllabus and materials taught to the students.

Moreover, in designing the CBME questions, the teachers must follow the instructions given by the Ministry of Religion, especially on *madrasah* education. They must prepare question grids, question banks, and sources of questions to be tested.

- (5) In the previous year for the religious and Arabic lessons, the grid had been given by the Ministry of Religion. Meanwhile, additional questions were made at the regional level. After that, it was given to the local schools. Here come the role of the teacher to further develop the questions according to the existing grid. These grids can be shared with students for learning materials at school or home.

- (6) The exam questions are taken based on the benchmarks of last year's exam, the national exam questions. It is done by combining past and present English subject materials. The materials are combined and taught in schools so students can learn to better understand them.

The teachers' responses on making a question bank prepared to be selected for the CBME are shown below:

- (7) Yes, there is. From the question bank of each question maker, then we can sort out which questions are appropriate to use according to their cognitive level. (T1)
- (8) Of course, there is, every new school academic year, we, as teachers, are obliged to prepare a question bank to facilitate the preparation of test instruments and the assessment with a computer system. We make the questions based on books of teaching materials, especially English according to their level from grades 7 to 9. In addition, these sources are coupled with previous teaching experiences. (T2)

Based on the interviews, it can be concluded that the English teachers prepared the grid of questions, and make question banks for the CBME. These questions are sourced from the teachers' own question banks, textbooks, other teaching materials, and even experiences while teaching English from grades 7 to 9. Nevertheless, they all must abide by the instructions and the basic source of the grids given by the Ministry of Religion, especially on *madrasah* education.

4.1.3 Preparing the students to face the exam

In facing the CBME, the teachers have prepared some guidelines for successful exam results. Challenging questions especially in English, which is treated as a foreign language in Indonesia, and heavy learning burdens made teachers to be creative in guiding students. The teachers must pay attention to the standard and basic competency as laid out in the English syllabus and curriculum (Erdiana & Pandjaitan, 2023). In addition, they must be aware of the English materials that must be taught to the students from grades 7 to 9.

- (7) We must pay attention to the cognitive level. It is stated in the rules for making the CBME questions. It is our main concern in making questions. And so, we teach and prepare the students so they fulfill all the cognitive levels required by the Ministry. (T1)
- (8) Of course, every student has different abilities. From there we see and analyze students' abilities. When making questions with HOTS, LOTS, and MOTS levels, we have to study how to analyze, understand and adjust the given questions to students' abilities. We must also understand what to do to improve students' abilities in English exams. (T2)

The teachers also informed that it was not likely for them to include questions not taught to the students from grades 7 to 9 in the CBME. All English materials provided in the schools abide by the English syllabus and curriculum (Achmad et al., 2023), and the teachers claimed to have completed the materials by the time the students completed grade 9. To help students in studying for the exam, especially those who are left behind in terms of materials being taught in classes, the teachers made after-school lessons one month before the CBME was conducted.

- (9) The chances are minimal because the CBME questions are taken from materials for grades 7, 8, and 9. So, we make a grid of questions worthy for the CBME, all materials that have been studied by the students. (T1)
- (10) Alhamdulillah [praise to Allah], starting from grades 7, 8 to 9, the materials have been taught and the CBME questions contain only those taught in these grades. We also give extra lessons to students after school, maybe one or two hours, three days a week...one month before the exam so the students are much more prepared for the exam...Insyaallah [if Allah wills], the students are ready to face the exam. (T2)

4.1.4 Overcoming the obstacles in developing the exam questions

Commonly, in implementing something new, there are always obstacles to face and resolve. Nevertheless, the teachers who were in charge of designing the CBME questions for the *madrasah* of MTsN 1 South Aceh claimed that they did not face any obstacles in developing the exam questions.

- (11) Alhamdulillah, there are no obstacles in making the CBME questions.
- (12) So far, there are no significant obstacles, and the test is ready to be carried out.

This is not typical, since many studies have found that enforcing new assessment models or breakthrough for schools exhibit challenges and problems for teachers and students (Aji & Basthomi, 2022; Beleulmi, 2022; Mohmmmed et al., 2020; Kurniati et al., 2023). Nevertheless, this research only interviewed two teachers, and future related research perhaps should include more teachers to probe for more evidence in this matter.

4.2 Learning Strategies Students Use in Facing the Computer-Based *Madrasah* Exam

The result of the second research question is displayed in Table 1 to Table 5.

Table 1. Learning strategies in managing time.

No.	Statement items	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	I schedule definite times and outline specific goals for my study time.	0%	0%	8%	64%	28%
2	I begin studying at least 5 days in advance of the exam.	0%	4%	18%	48%	30%
3	I study where it is quiet and has few distractions.	0%	0%	14%	26%	60%
4	I study for a length of time and then take a short break before returning to studying.	2%	6%	22%	46%	24%
5	I study during my personal peak time to increase my concentration level.	0%	8%	14%	42%	36%

Table 1 displays the learning strategies for managing time. Here, 92% of students agreed to Item 1 that they ‘schedule definite times and outline specific goals’ for their

study time. This indicates that the students greatly appreciated managing time for studying. Next, Item 2 inquires about whether they ‘study at least 5 days in advance of the exam’. About 78% of the students concurred with the statement. This means that they did study a few days before the exam to prepare themselves. Regarding Item 3 ‘I study where it is quiet and has few distractions’, 86% of students acknowledged this statement. This insinuates that the students all studied in quiet places without much noise and distractions. This can become an input to the school to provide more study rooms in schools for students to prepare for the exams. Moreover, Item 4 states that the students ‘study for a length of time and then take a short break before returning to studying’, and this was conceded by 70% of students. This shows that taking deliberate breaks from studying is essential to recharge the mind and body and boosts energy, productivity, and capacity to concentrate. Lastly, Item 5 inquires whether students’ study ‘during their personal peak time to increase their concentration level’. This is agreed by 78% of students. It indicates that 22% of students can study almost anytime, while 78% need to find their peak time to increase their concentration.

Time management is essential in undertaking examinations through computer-based, and it takes good preparation (MacCann et al., 2012). It is not easy for students to take tests through CBME and they will likely get nervous and anxious (Gibbs, 2006; Misra & McKean, 2000; Natarajarathinam et al., 2009). If they cannot manage their time carefully and precisely, they will have problems undertaking the exam based on the given time (Drach-Zahavy et al., 2022). Time is essential so that they can answer the questions precisely and correctly to obtain good scores (Gibbons, 2003). In addition, the best time to study also should be taken into consideration. Preparing themselves before the exam date is paramount (Bassett et al., 2020). Besides, studying during peak times to increase students’ concentration levels is also essential (Golshan-Shirazi & Guiochon, 1989).

Table 2. Learning strategies in motivation.

No.	Statement items	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
6	I study enough to face the exam.	2%	8%	12%	32%	46%
7	I feel confident that I prepared for the exam.	0%	4%	22%	38%	36%
8	I am calmly able to recall what I know during an exam.	0%	2%	50%	32%	16%
9	I think I finished my exams in the allotted time.	0%	4%	22%	50%	24%
10	I think I will be satisfied with my grades.	2%	2%	36%	34%	26%

Table 2 shows the learning strategies used in motivation. Most students agreed to Item 6 which state that the students had ‘studied enough to face the exam (78%)’. Following this item in Item 7, which says the students were ‘confident in preparing themselves for the exam’ (confirmed by 74% of students). These two items indicate that most students in this study believed that they had studied enough for the exam and were confident about their preparations. Nevertheless, for Item 8, half of the students (50%) were neutral about ‘calmly being able to recall what I know during the exam’ and another half of the students believed that they were serene about it. This means that anxiety and nervousness still took place in the students while taking the CBME. Next is Item 9 which claims the students ‘to finish their exams on time’ (74% agreed’) and Item 10 about their satisfaction with ‘their

grades' (60% concurred). This means that despite most students (74%) did finish their exams on time, only 60% of the students were satisfied with their grades.

Motivation in preparing for the exam is essential to make it run smoothly. Previous research has found that CBT promotes student learning, engagement, and motivation (Perry et al., 2022). The findings in this study showed that most students were encouraged to prepare themselves to take the CBME of the English subject. Odanga (2018) has mentioned that students who can motivate themselves with positive consequences to prepare for their exams will achieve better. Learning regularly to face exams positively affects students (Konrad et al., 2014). They should also find various strategies to motivate and increase their scores in undertaking examinations (Cooperstein & Kocavar-Weidinger, 2004).

Table 3. Learning strategies in creating study groups.

No.	Statement items	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
11	I study with a classmate or a group.	0%	2%	24%	40%	34%
12	I get help from classmates when I don't understand something.	0%	4%	12%	32%	52%
13	I try to use different strategies with classmates in group activities.	0%	4%	36%	46%	14%
14	I participate in meaningful group discussions for more interaction.	0%	2%	18%	50%	30%
15	I try to reduce problems and anxiety during the study group.	0%	2%	24%	52%	22%

Table 3 shows the learning strategies students use in creating study groups. Item 11 sounds out that students 'study with a classmate or a group' which received 74% of positive responses, and Item 12 enunciates that students 'get help from classmates when they do not understand something/materials' which received 84% of confirmation. This reveals that a majority of these students preferred and conducted group studies to individual studies. It was one of the solutions for students who have yet to be able to manage time effectively. Subsequently, Item 13 'I try to use different strategies with classmates in group activities' got 60% of agreement. Thus about 40% were either neutral or did not agree with this, meaning that not many students attempted to employ different learning strategies in their study groups. 'I participate in meaningful group discussions for more interaction' is part of Item 14 which mostly received positive outcomes (80%). Meanwhile, the last item in Table 5 'I try to reduce problems and anxiety during the study group' had 74% of acceptance. This confirms that the students were less stressed when they were able to study in groups with their peers for knowledge sharing and moral support in facing the CBME exam in the English subject.

The results in Table 3 depict that learning with classmates in groups resulted in a more significant impact on students' results in examinations. When learning together, knowledge, experiences, and strategies can be shared from each other from classmates and friends (Ashman, & Gillies, 2003; Jaques, 2000; Jaques & Salmon, 2006). It is also essential to participate in meaningful group discussions for more interaction so students can do better in the examination. This finding confirmed a previous study by Knight and Pye (2005), where networking and learning in a group benefits students. Reducing problems and anxiety during the study group can also be resolved. In this case, most students claimed that their anxiety was reduced and their

problems were better solved when learning in a group. Accordingly, a group project is designed to minimize free-riding and promote active learning (Swaray, 2012).

Table 4. Learning strategies in practicing before the CBME.

No.	Statement items	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
16	I do review questions or practice problems.	2%	4%	26%	36%	32%
17	I try to imagine possible questions during my preparation for the exam.	0%	6%	10%	52%	32%
18	I answer practice questions to test my knowledge.	0%	0%	14%	48%	38%
19	I follow directions carefully before taking an exam.	0%	0%	10%	48%	42%
20	I try to use online media such as computers for exam trials.	0%	8%	26%	36%	30%

Table 4 displays the learning strategies in practicing before the CBME. Most students agreed to Item 16 that they ‘do review questions or practice problems’ (68%). Item 17 on ‘imagining possible questions during their preparation for the exam’ revealed that 84% of students did so. Afterward, Item 18 asked whether they ‘answer practice questions to test their knowledge’ (86% of students did practice) and Item 19 inquired whether they ‘follow directions carefully before taking an exam (90% confirmed) and asserted that almost all students did practice to their best before they had to face the CBME. The last item in this strategy is Item 20, the students who tried ‘to use online media such as computers for exam trials’ gained many positive results, with 66% in the category of agreement.

Practicing before taking a computer-based examination is also essential. If students want to succeed, they need to practice. Yusuf et al. (2021) reported that practicing language skills to improve performance is essential. Reading, understanding, and following directions carefully before taking an exam is necessary to obtain positive results (Lu & Ramamurthy, 2011). The current finding also found that students used online media such as computers for exam trials. However, some did not use this media for practice. Hence, this was not surprising as the students were from rural areas, and not all were privileged to have access to the Internet and other technological tools as they were costly to them (Muslem et al., 2018).

Table 5. Learning strategies in strengthening basic abilities in facing the CBME.

No.	Statement items	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
21	I have made study guides for the exam.	2%	10%	16%	54%	18%
22	I take courses for exam preparation.	4%	20%	24%	34%	18%
23	I attend review sessions when offered.	2%	4%	20%	44%	30%
24	When learning a unit of material, I summarize it in my own words.	2%	2%	20%	52%	4%
25	I try to use text, the internet, or library resources in preparing for the exam.	0%	0%	14%	52%	34%

Table 5 is the students' responses on strengthening their basic abilities in facing the CBME. More than half of the students agreed with Item 21 that they 'made study guides for the exam' (72% did so), Item 23 that they 'attended review sessions when offered' (74% did so), Item 24 that they 'summarized the learning materials in their own words' (56% did so), and Item 25 that they 'used text, the internet, or library resources in preparing for the exam' (86% used this media). This confirms their determination in strengthening their abilities to face the CBME exam. For Item 22 on 'taking courses for exam preparation', only half of the students agreed with this statement (52%), while the other half were either neutral (16%) or disagreed with it (24%). This shows that only half of the students took extra courses outside of school to prepare for the CBME. As the school was situated in a rural area, there was a possibility that not all students could afford to take additional courses outside of school. Most of the students' parents were farmers or cattlemen.

Empowering basic knowledge and abilities in the CBME was very important to the students, especially when the implementation of this model of the exam was still at the initial stage. The students should read and review topics related to the examination to get basic knowledge and power (Appelbaum & Honegger, 1998; Hvalshagen et al., 2022). This current study reports that most students did make strategies to empower their basic abilities, such as making study guides for the exam, taking courses for exam preparation, attending review sessions when offered, summarizing materials in their own words to reinforce their comprehension, and trying to use text, the internet, or library resources in preparing for the exam. These were attempts that students took and went through to promote their basic concepts and metacognition (Tanner, 2012).

4.2 Students' Obstacles in Facing the Computer-Based *Madrasah* Exam

Table 6 presents the analysis of results for students' obstacles in facing the CBME.

Table 6. Students' obstacles in facing the CBME.

No.	Statement items	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
26	I do not participate in the exam simulation or try out by using a computer.	2%	14%	20%	42%	22%
27	I get nervous before or during an exam.	6%	10%	40%	36%	8%
28	I have difficulty operating computers and internet systems.	8%	36%	20%	14%	5%
29	I have to bring a handphone because of the limitation of school computers.	0%	4%	12%	40%	44%
30	I have to wait for a long time to log in to the exam because the server is slow to respond.	0%	12%	26%	40%	22%
31	I am uncomfortable when the server system error during the exam progress.	0%	14%	30%	46%	10%
32	I have difficulty understanding English vocabulary in the exam.	0%	12%	26%	50%	12%

Table 6 continued...

33	I take a long time to read the questions during the exam before starting to answer.	0%	22%	32%	32%	14%
34	I feel disturbed when a friend beside me asks during the exam.	0%	2%	12%	44%	42%
35	I have to take a remedial session because the score does not reach the Minimum Mastery Criterion.	2%	6%	28%	34%	30%

Table 6 shows that three main issues caused the students to face difficulties in facing the CBME. The first issue was related to the facilities needed to conduct the CBME. Despite that the students did not face difficulty in operating computers and internet systems (Item 27 at 19% in agreement), the obstacles in facilities were depicted in Item 26 that the students did not participate in tryouts using computers (64% in agreement), Item 29 that they had to bring a handphone because of the limitation of school computers (84% in agreement), and Item 30 that they had to wait for a long time to log in to the exam because the server was slow (62%). Sufficient facilities to promote ICT (information and communication technologies) throughout Indonesia are still a struggle (Muslem et al., 2018; Silviyanti & Yusuf, 2015). There are still many areas in the country, especially remote ones, that do not have access to them or the privilege to own them (Kusuma, 2022).

The second issue is related to their psychological being, where 56% agreed that they felt 'uncomfortable when the server system error during the exam progress (Item 31), and this probably caused them to be nervous in facing this exam (Item 27 where 44% of students agreed). Then there is Item 34 on being intimidated by their peers; this was agreed by 86% of the students that they 'felt disturbed when a friend beside them asked them questions during the exam'. It is common for EFL learners around the world to have anxiety in language learning. This is because many EFL learners struggle to speak English fluently due to a lack of practice or fear of making mistakes (Erdiana et al., 2020; Hanifa, 2018), and different social settings, social status, relationships between speakers and interlocutors and gender differences are also important factors that cause language anxiety for EFL students (Debreli & Demirkan, 2016; Hanifa, 2018; Limeranto & Subekti, 2021). Again, when this is further bothered by peers during exams, anxiety may increase and affect the outcomes of their exam results.

The third issue is linked to their skills or ability in the English language. For Item 32, 62% of students agreed that they had 'difficulty understanding English vocabulary in the exam', and for Item 33 where 46% agreed that it took them 'a long time to read the questions during the exam before starting to answer'. Item 35 on 'taking a remedial session because the score does not reach the Minimum Mastery Criterion' got 64% of agreement. This exposes that students were still struggling with the English subject. Moreover, it seems that reading skills played a big role in the CBME, and this is true in this case where to understand the questions in the exam, reading becomes the dominant skill that students must master (Appelbaum & Honeggar, 1998; Hvalshagen et al., 2022). Without grasping the concept of reading, they would face some problems in comprehending foreign language texts (Limeranto & Subekti, 2021). It is suggested that this skill be enhanced by the teachers to their students. Consequently, the students'

response does not corroborate with the lecturers who claimed that their effort to help students prepare for the exam was sufficient.

These findings on the obstacles faced by students align with the results by Retnawati et al. (2017). They also reported that the challenges students encounter in computer-based tests or assessments concern the Internet and the electricity supply, the test supervisors who had to learn their duties by themselves, and the students who still need familiarity with the use of ICT. They added that to deal with such challenges, the schools can employ strategies by making efforts to provide standard electronic equipment through collaboration with the students' parents and stakeholders, and further improve the curriculum content by adding ICT as a school subject (Retnawati et al., 2017).

5. CONCLUSION

Based on the results of the study, the first research question on the teachers' design of the CBME, it was found that the teachers agree to the change in the final exam model because it was suitable to the context and situation of each school. They also understood the sources to use in designing the exam questions and claimed to have made sufficient efforts in preparing the students to face the exam. Surprisingly, the teachers claimed that they did not face any obstacles in developing the exam questions. This result needs affirmation from more *madrasah* teachers preparing the CBME and teaching English in Aceh in future related studies.

In relation to the students' learning strategies in facing the CBME, a number of five strategies were investigated, which are time management, motivation, creating study groups, practicing before the exam, and strengthening basic abilities. The students were also found to face obstacles in the CBME. This is related to the third research question. Based on the questionnaire, these obstacles were categorized into three issues, they are related to the facilities to conduct the CBME, the students' psychological being in facing the exam, and finally, their insufficient knowledge, skills, or ability in the English language. In the case of this present study, it is suggested that in the future, before implementing CMBE, the school must first have the necessary facilities and more training for instructors in creating the CMBE evaluation model.

Despite that this study has answered the research questions, it involved only students in one school in a remote area in Aceh, Indonesia. The teachers were also limited to two English teachers at the school under study. Therefore, this study suggests that future research on this topic engages more students, schools, and teachers, not just from Aceh, but from other areas in Indonesia as well. Furthermore, adding more instruments to complement the findings, such as direct observations and interviews with not only teachers, but also the students, principals, and stakeholders would be worthy to administer.

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