Application of semester credit system curriculum in high school in Indonesia: Opportunities and challenges in the industrial age 4.0

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Abstract

One of the innovative efforts made to improve the quality of education in Indonesia during the industrial era 4.0 is the application of the Semester Credit System. The research objective in implementing the Semester Credit Unit system is intended to stimulate creativity and train children's intelligence in the learning process so that those who can complete it quickly, precisely and efficiently. This type of research is field research. The method used in this research is qualitative research. The kind of approach used is descriptive analysis with a phenomenological approach. The subjects of this study amounted to nine people consisting of the principal, vice-principal of the curriculum field, class teachers and students. The data analysis technique uses data reduction procedures, data presentation and data interpretation based on important collected themes. The findings of this study have three points. First, the Semester Credit Unit system learning application innovations can increase children's enthusiasm for learning, thus spurring students to complete on time. Second, the existing supporting factor is the extraordinary support from the government, especially the Ministry of Religion. Third, the constraining factor in implementing the Semester Credit System at Madrasah Aliyah (MA) Negeri 3 Palembang in facing industrial revolution 4.0 is overstressed and stress that accumulates in the students of MA Negeri Palembang so that it hurts their learning achievement. This research is theoretically expected to help increase intellectual treasures, especially in studying the Islamic education curriculum at MA. Meanwhile, practically, this research is expected to help prepare strategic plans for curriculum development. There are still many limitations in this research. Subsequent analysis can be minimised with more in-depth study.

Keywords: Innovation, challenges, opportunities, semester credit units.

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1. Introduction

Madrasah Aliyah (MA) is a formal education unit as a continuation of Madrasah Tsanawiyah, characterised by Islam (MoR, 2013). As an academic unit at the level of Public High School, which is characterised by the Islamic religion. Then the implementation of MA education aims to produce graduates or outputs who believe in Allah SWT, have a noble character, and have expertise in the job market's needs or continue their education to higher education (Latipah, Kistoro, et al., 2020).

MA has distinctive characteristics compared to equivalent levels of education. Because seen from the aspect of the curriculum is also different (Abdullah, 2019). On the one hand, the curriculum applied must be relevant to the needs of the world of work and the dynamics of society (Arlinwibowo et al., 2021a, 2021b; Arlinwibowo, Kistoro, et al., 2020; Arlinwibowo, Retnawati, et al., 2020). However, on the other hand, MA, as part of the education system, must remain committed to its identity as an Islamic-based education (Shobri, 2018).

For this reason, the MA curriculum looks at religious, socio-cultural, artistic and science-technology aspects. So the content of the MA curriculum is integrated between the achievements of Islamic sciences, science and technology, which are given the 'spirit' of Islamic values and piety (Abdullah, 2019). MA as a sub-system of education is inseparable from the challenges of the industrial revolution era 4.0 (Rozi, 2020). The industrial revolution 4.0 that emerged around the 2010s was marked by intelligent engineering and the internet of things as human and machine connectivity (Priatmoko, 2018). In the framework of facing the industrial revolution 4.0, one of the visions of Making Indonesia 4.0 is to make Indonesia one of the top 10 countries with the most robust economy in the world by 2030.

This is where it seems that efforts to improve the quality of MA Negeriusia resources become a top priority and at the same time become a challenge for MA, which in curriculum design is not only oriented to the aspect of Islamic science. But it is also oriented towards Science, Technology, Engineering, the Arts, and Mathematics or STEAM (Arlinwibowo, Kistoro, et al., 2020; Arlinwibowo, Retnawati, et al., 2020). In other words, it is necessary to harmonise the design of the MA curriculum, which is oriented to the national education curriculum (Ministry of Religion of the Republic of Indonesia) with the needs of the industrial world. The skills that MA must possess in the 4.0 industrial revolution era include leadership, digital literacy, communication, emotional intelligence, entrepreneurship, global citizenship, problem-solving, team-working (Arlinwibowo et al., 2021a; Marsigit et al., 2020).

One of the efforts that MA can compete in the industrial revolution 4.0 era is by applying the Semester Credit System learning (Supriyanto, 2016). Since the 2015/2016 academic year, MA Negeri 3 Palembang, as one of the schools that have implemented this program, has implemented a learning model using the Semester Credit System as an innovative effort to improve the quality of education in Indonesia. Implementation of the Semester Credit System at MA Negeri 3 Palembang based on the Decree of the Director-General of Islamic Education Number 3274 of 2015, which stipulates that MA Negeri 3 Palembang use the Semester Credit System. With this decree, MA Negeri 3 Palembang, including 29 MA in Indonesia, was designated as the Semester Credit System learning program organiser.

The application of the Semester Credit System at MA Negeri 3 Palembang can be an alternative for MA Negeri 3 students interested in entering accelerated classes. In addition, the Semester Credit System is a form of service provided to students who have a variety of talents, interests and intelligence. So that students of MA Negeri 3 can follow the educational process according to their abilities. Application of the Semester Credit System learning the learning load at MA Negeri 3 Palembang is expressed by lesson hours (JP) with an overall load at the MA level of at least 306 JP. The learning load of 1 JP generally consists of 45 minutes of face-to-face activities and a minimum of 60% (about 27 minutes) for structured

assignments and unstructured independent assignments. In particular, the 1-hour face-to-face learning activity in the learning load for students who have a learning speed above the average, the duration of 1-hour lesson can be carried out for 30 minutes.

Semester Credit System Learning provides a choice of subjects and time to complete the study period, which allows students to determine and manage learning strategies independently. In addition, the implementation of the Semester Credit System will enable students to obtain learning opportunities and achieve optimal levels of ability according to their talents, interests, and ability/learning speed so that it allows students to directly follow the content, subjects or other programs without being constrained by other students.

A semester credit system is a form of accommodation for children who have higher intellectual abilities than in general. This system is expected to be a solution to problems regarding children who have special skills academically. But in reality, its implementation requires many factors that can support the smoothness and success of this program. School readiness in providing facilities and infrastructure, the ability of existing teachers and also other needs in the process of implementing the semester credit system are problems that the school must face. The emergence of this problem requires schools and teachers to prepare the existing capabilities and facilities. The experience of teachers in implementing the credit system this semester will be examined and explained in this study.

Several studies have been conducted related to the evaluation of education with the Semester Credit Unit system. Planning for competency standards is carried out by meeting the criteria for passing subjects and passing criteria for each semester of the teacher council meeting (Pribadi et al., 2022). Many contemporaries want to graduate together, which is contrary to the orientation of the SKS policy (Budiyanto et al., 2020). Students were also identified as lacking in student motivation, enthusiasm, and responsibility (Setyawan & Soesilo, 2019). The blended learning model in high school can be a model for schools that implement a semester credit system to anticipate various problems that occur (Wahjono et al., 2021).

Thus, it is important to define the opportunities and challenges of pilot schools that implement the semester credit system. The new findings that will be obtained from this research compared to other research are the perspectives of opportunities and problems from the point of view of the industrial revolution 4.0. A search based on the point of view of the industrial revolution has a strong urgency because, currently, schools are obliged to follow these developments. The needs of today's graduates must be able to compete in the 4.0 era. This research aims to answer the problem of applying the learning system of the MA Negeri 3 Palembang Semester Credit Unit system, opportunities, and challenges in the era of industrial revolution 4.0.

2. Method and materials

The method used in this study is qualitative research because the data collected is more qualitative in the sense that the data is not in the form of numbers, either interval, ordinal or discrete data, while at the same time trying to describe reality as it is according to the actual truth (Creswell & Lecompte, 2017). At the same time, the type of research approach carried out is narrative or descriptive (Kistoro, 2021), where the experience of the selected informants will provide an overview of the implementation of the credit system program this semester.

2.1. Participant and data collection

Primary data sources are obtained from informants or stakeholders who are directly involved in the implementation of the Semester Credit System at MA Negeri 3 Palembang. The data collection technique

used is in-depth interviews with selected informants. There were nine informants in this study consisting of the Head of Madrasah, Deputy Head of Madrasah Curriculum, teaching staff and students of MA Negeri 3 Palembang. An explanation of the informant's profile can be seen in Table 1.

Table 1
Respondent Profile

Initial	Status	Amount
KH	Headmaster	1
AS	Deputy Principal for Curriculum	1
RK	Classroom teacher	1
AAW	Student	1
KA	Student	1
MAB	Student	1
MIH	Student	1
MRF	Student	1
MB	Student	1
Total		9

2.2. Instruments and procedures

The procedure in this study begins with asking permission from the school to interview research subjects who will be informants. After getting approval, the researcher set the time related to the day and time of the interview. Researchers made interview guides and documentation as instruments for collecting research data. The instrument is designed based on the indicators set to explore the required information. Indicators are formulated based on operational definitions from various literature to ensure quality.

2.3. Data analysis

Research analysis begins with reducing interview data into specific themes based on the critical information obtained. The introductory statements obtained are then presented in a narrative or description according to the informant's experience. The next step in this data analysis procedure is to write the essence of all the phenomena experienced by the informants. The validity of the data was carried out by researchers using source triangulation by testing the validity of the data by comparing different sources (Moelong, 2013).

3. Results

The results showed several significant findings in the application of the semester credit system at MA Negeri 3 Palembang. Among the obtained conclusions is the form of implementation of the semester

credit system, regulatory problems, the importance of mastering information technology (IT), and the obstacles faced.

3.1. *Implementation model, regulatory problems and mastery of information technology*

The implementation of the Semester Credit System so far is not all in line with the provisions contained in the Regulation of the Minister of Education and Culture Number 158 of 2014 concerning the Implementation of the Semester Credit System in Primary and Secondary Education. In the context of aiming to further enhance the strengthening and stabilisation of the implementation program for the Semester Credit System following the 88 provisions and pre-requisites stipulated in the Norms, Standards, Procedures and Criteria, MA Negeri 3 Palembang, which administers the Semester Credit System must pay close attention to the principles that must be adhered to.

First, students determine their learning load and the subjects they follow each semester based on their abilities, talents, and interests. Second, students who have the knowledge and are highly motivated can shorten the time for completing their studies from the specified study period while still paying attention to mastery learning. Third, students are continuously trained to empower themselves so that they can learn independently.

As for students who want to take acceleration, the school makes various series of subjects in which in practice students are guided to complete the entire Semester Credit System within two years so that these students can take the National Examination together with other students. This is one of the obstacles faced by the implementation of the Semester Credit System program. Although, in general, the government has provided support for the implementation of semester credit-based education, in this case, the government has not facilitated students who can complete their study period while in the intermediate semester.

In such conditions, the application of the Semester Credit System at MA Negeri 3 Palembang is required to guide students with an accelerated program to complete their 2-year study period so that these students can take the exam with their seniors. However, because the government has not provided clear regulations for students who can complete their studies for 2.5 years (acceleration class students who can't graduate exactly 2 years), they are forced to wait until the National Examination is carried out. So that it becomes something in vain. Therefore, the school deals with making a series of subjects to finish within 2 or 3 years.

As stated by the deputy head of the MA Negeri 3 Palembang curriculum, that 'the main obstacle to the implementation of the Semester Credit System in MA Negeri 3 Palembang has not been effective until now'.

In addition, the implementation of Curriculum 13 with the Semester Credit System at MA Negeri 3 Palembang is based on observations in the field that some teachers are still not ready so that Curriculum 2013 is felt to be a burden, some senior teachers who do not understand the use of IT. Still, some teachers have not attended the 2013 Curriculum education and training and the lack of activity on the Semester Credit System.

The same thing was conveyed by the Head of MA Negeri 3 Palembang: 'There needs to be training or workshops on the Semester Credit System to make it easier to understand. There is in-house training on Semester Credit System'.

According to the class teacher of MA Negeri 3 Palembang, the implementation of the Semester Credit System at MA Negeri 3 Palembang has not been effective due to 'ineffective time, and lack of IT facilities, so it is necessary to complete existing facilities and infrastructure'.

Conceptually, the Semester Credit System implementation is constrained by the use of IT and difficulties in finding reference handbooks, determining student learning loads that are still changing, and the available funds are minimal. The school's efforts to overcome the existing weakness factors are by requiring teachers to use IT, looking for reference sources for books that are relevant to learning materials, providing opportunities for educators to take part in education and training on the implementation of the 2013 curriculum based on the Semester Credit System, and manage education funds following technical guidelines set by the government.

The supporting factors for implementing the 2013 Curriculum based on the Semester Credit System are teachers already understand the 2013 Curriculum by following the socialisation, the 2013 Curriculum guidelines in lesson plans (RPP), syllabus and assessment instruments. In terms of human resources, support from teachers in the form of competencies they have in the learning process is one of the determinants of success factors. In terms of non-human resources in the state of available facilities and services provided by the school, it is very supportive of implementing the 2013 Curriculum with the Semester Credit System.

In addition, based on field observations found in MA Negeri 3 Palembang – although the numbers are small – the obstacle in implementing the Semester Credit System program is the lack of a Semester Credit System obtained. While there are demands from the government that require teachers to teach 24 hours a, the Semester Credit System for these subjects is very little in specific semesters. So the Semester Credit System is only a little while the number of subject teachers is a lot. So, in the end, the teacher has to teach other subjects to fulfil his teaching hours.

3.2. Overstress and under stress constraints

Based on the results of interviews with students at MA Negeri 3 Palembang, they already know about the implementation of the Semester Credit System at this Madrasa, especially for students who take Cambridge classes. Because from the beginning, they have been notified by the Madrasah.

Regarding the obstacles faced by the students of MA Negeri 3 Palembang in implementing the Semester Credit System, most of them complained that their activities were too busy, so they had very little rest time. One of the students said that 'The dormitory activities are crowded, so it's too late to sleep while assignments have to be done. So it's a bit boring and monotonous'. Another student also added that 'the semester credit school system should also reduce dormitory activities, remove homework, be allowed to bring cellphones, and teachers who are engrossed in learning and are equated with teaching teachers in class with teachers teaching tutoring'.

4. Discussion

Based on the respondent's information above, it can be said that the volume or level of loading on students of MA Negeri 3 Palembang, which is too high, will have an impact on energy overload mental and psychological, resulting in overstress. However, on the contrary, the intensity of loading that is too low allows feelings of boredom and saturation or under stress. Both of these things, both overstress and under pressure, resulting in a horizontal line – no progress in learning. If experienced by a student who is in the learning process (study saturation), this saturation event can make the student feel he has wasted his efforts (Rohmah, 2015). Or in other words, if overstress or under stress accumulates in students, it will have a harmful impact on their learning achievement.

In this case, define burnout as 'a state of physical, emotional and mental exhaustion, that fatigue is characterised by feelings of helplessness and hopelessness, dry feelings, negative self-concept and negative attitudes. The situation as characterised is called physical depletion'. Study saturation is a mental

condition in MA Negeri where students experience extreme boredom to carry out learning activities, and this boredom makes their learning motivation decrease. Routine activities generally cause saturation in any field carried out in a monotonous way or did not change for a long time (Kim et al., 2019). There is too much workload when it is associated with learning, namely the number of school assignments that include subject terms and extracurricular. There are too many task demands from schools in a relatively short time and very few sources of knowledge, so that students often feel burdened (Latipah, Kistoro, et al., 2020).

Learning boredom is the same as boredom in other activities, generally due to a process that takes place monotonously (not varied) and has been going on for a long time. Factors that cause learning saturation include learning methods or methods that do not vary, learning only in certain places, learning atmosphere that does not change, lack of recreational or entertainment activities, intense and protracted mental tension during learning (Hakim, 2005). Learning saturation can hit students if they have lost motivation and lost the consolidation of one particular skill level to the next skill level. In addition, boredom can also occur because the student's learning process has reached the limit of his physical abilities due to lethargy and fatigue. However, the most common cause of learning boredom is fatigue, which can cause boredom in the students concerned.

In this context, according to the researcher, educators at MA Negeri 3 Palembang should use varied and not monotonous learning methods that will cause boredom in learning to create a new atmosphere in the classroom or study in the dormitory – in addition, making physical changes in the study room both in the school and in the dormitory that has to do with changes in the form of material such as changes in the location of tables, chairs, blackboards and everything that has to do with learning activities. It is essential to create a new atmosphere in the study room, for example, studying while listening to calm rhythmic instrumental music or the students' favourite music (Latipah, Adi Kistoro, et al., 2020). No less important, learning is one of the mental activities that is very tiring and takes up a lot of energy, prolonged fatigue will lead to saturation, for that it is necessary to have adequate rest as an alternative to restore or recover the energy that is consumed/drained while studying avoid mental tension when studying, mental stress will make learning activities feel much heavier and tiring and lead to learning saturation. Mental tension can be avoided by way of informal learning means learning with a relaxed attitude and free from stress.

In addition to obstacles related to students, MA Negeri 3 Palembang will be faced with the challenges of the industrial revolution era 4.0 because this Islamic educational institution is inseparable from global challenges as part of the world community. One of the challenges faced by MA Negeri 3 Palembang is the era of the industrial revolution 4.0. The emergence of the industrial revolution 4.0 period was marked by the rapid development of the digital world, making it easier for every level of society to interact or connect (Priatmoko, 2018).

For example, in the world of education, the emergence of IT in learning activities, both hybrid learning and blended learning, has been marked by the emergence of the use of IT in learning activities. The development of the digital era has penetrated various regions of countries in the world. All are connected as if there are no boundaries that become borderless. All available information in an area can be known instantly by residents in other areas. All of that happened because of the presence of the digital era, which has replaced the domination of the conventional period. The digital age itself was born from the womb and the rapid development of the global generation or globalisation (Hakim, 2020).

Changes in human life have begun with the digital era or also called the industrial revolution 4.0. The activity that dominates human activity is the internet and starts from aspects of education, social,

economical and so on (Radino et al., 2021). In the global era, the world situation, according to a famous futurologist, Alvin Toffler, is moving into a new world known as The Third Wave, namely the wave of civilisation with the spread of IT, computerisation, biological revolution, war and terrorism technology, and others. Others are global (Sufian et al., 2020).

In that era, the development of technology and digital devices is increasingly sophisticated and continues to be developed and updated. The wave of civilisation makes humans inseparable from digital products. Everything is increasingly connected, open and interdependent. Although they still have territorial areas and clear geographical dividing lines, these boundaries do not become a barrier to interact, communicate and share information openly by the digital community. The description of digital society can be seen from the dynamics of behaviour and tendencies of the millennial generation when interacting with the internet world about the world of education (Gazali, 2018). In essence, the dynamics and direction of all social and educational changes in the digital era is a level of community progress, both material and spiritual (Latipah et al., 2021).

MA Negeri 3 Palembang, as part of the global world, has now shown its existence as an educational institution characterised by the Islamic religious values of the State MA, starting to attract a lot of attention, especially education observers. MA, including MA Negeri 3 Palembang, has become one of the alternative Islamic educational institutions in the era of the industrial revolution 4.0 because it provides not only religious education (Islam) but also other general knowledge.

In this context, one of the efforts to face the challenges of the industrial revolution 4.0 era is through curriculum development. The curriculum has a central position in the educational process because it contains an academic plan that provides guidelines and guidance on the type, sequence of content, and the educational process. Law No. 2 of 2003 concerning the national education system states that the curriculum is a set of plans and arrangements regarding the objectives, content, and learning materials, as well as the methods used as guidelines for the implementation of activities to achieve specific educational goals (Kementerian Pendidikan Nasional, 2003).

Curriculum development at MA Negeri 3 Palembang should be more focused on studying Islam and include general knowledge that is in line with graduates who can compete in facing the challenges of the industrial revolution era 4.0. Curriculum development that must be considered in general is MA Negeri Madrasah curriculum is unique to Islamic education. Still, it is necessary to think about managing and equalising the curriculum, which is the guideline for all schools in the general group. School.

The emergence of the industrial revolution 4.0 era marked by the birth of digital technology has provided technology based on cyber-physical systems, a combination of digital, physical, and biological domains. Madrasah educational institutions must realise the urgency of the availability of digital technology infrastructure to facilitate educational activities (Muhlis, 2016). In general, Islamic educational institutions experience obstacles often experienced in educational, learning, and administrative activities related to the absence or lack of availability of this digital infrastructure. This is what should be addressed so that Islamic education can speak better in the future, making it easier for students to obtain the latest information. In addition, alumni of MA Negeri 3 Palembang can become graduates who understand technology to preach in the internet world. For example, creating YouTube content containing Islamic studies with the sources of the madrasa students themselves. Students of MA Negeri 3 Palembang must improve their skills in this technology field.

There is a link and match, at MA Nigeria, the suitability of graduates and competitiveness of the 4.0 industrial revolution era. It can be used as a benchmark for the quality of graduates in responding to these challenges. The available graduates of MA Negeri 3 Palembang are already able to have

competencies/skills that match their profession, or graduates have a degree without having competencies/skills so that in the end, the work taken is not linear with the department because of the lack of competence/skill This challenge must be answered by preparing the curriculum at MA Negeri; students have the opportunity to become individuals who have number one skills in the world of education and second skills, namely entrepreneurship by religious majors.

The 2013 Curriculum-based Semester Credit System implementation, which has been held at MA Negeri 3 Palembang, must be elaborated creatively-innovatively so that students do not experience boredom and overstress. Due to boredom with activities that face to face routines will be more impressive and reduce boredom, the daily routine for one year given by the teacher to students will provide students with the effect of boredom, to be creative and active in the learning process. Teachers are required to provide learning with a more challenging approach for students to explore themselves and develop themselves to master the subjects given by the teacher.

Teachers must be able to motivate students to give psychological encouragement to move forward with positive thinking in improving personal intellectual development to be able to solve problems faced either personally or in mastering something learning; teachers should not underestimate that students are not capable before he proves himself with all his might and able to solve a problem well. Madrasah principals need to be sensitive to teacher problems but not be judgmental. However, assisting teachers in overcoming the problems that occur, for this reason, the teacher professional development centre can assist in training related to classroom management (Ru'iya & Kistoro, 2019) so that they have global awareness or global awareness (Suharto, 2018), literacy awareness (Yamin & Syahrir, 2020), awareness as citizens of the nation (civic understanding) (Lukman & Kistoro, 2020) and awareness of health and wellness (health and wellness awareness) (Ru'iya et al., 2020).

This, as stated by Trilling and Fadel, there are three skills needed to be able to compete in the era of the industrial revolution 4.0, namely learning and innovation skills which include critical thinking and problem solving, communication and collaboration, as well as creativity and innovation, digital literacy skills that provide for, information literacy, media literacy and IT literacy and the third is life skills and career skills (Burnett, 2014). The flow of competencies that students must have in implementing the semester credit system in education in the industrial era 4.0 can be seen in Figure 1.

Figure 1

The Flow of Semester Credit System Competencies in the Industrial Era 4.0.
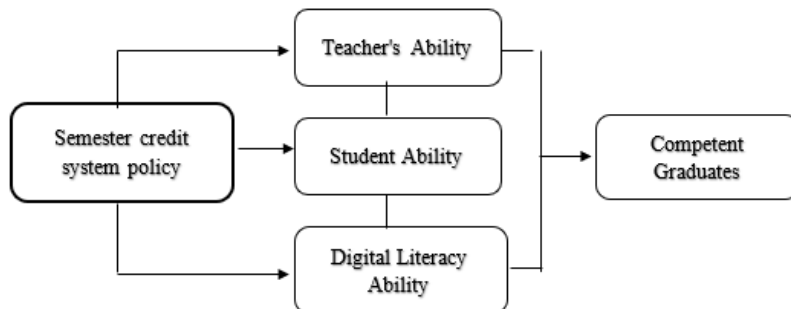
5. Conclusion

Based on the description above, it can be concluded that: First, innovation in the application of the Semester Credit Unit system learning can increase children's enthusiasm for learning, so that the

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Semester Credit System system can stimulate students so that they become the main driver in completing their studies on time.

Second, the supporting factors received special treatment from the Ministry of Religion among 19 State MA in implementing the Semester Credit Unit system, namely the Implementation of the Semester Credit System at Madrasah Aliayah Negeri 3 Palembang based on the Decree of the Director-General of Islamic Education Number 3274 of 2015 which stipulates MA Negeri 3 Palembang uses the Semester Credit System. With this decree, this Madrasah includes 29 State Aliyah Madrasas in Indonesia, which are designated as organisers of the Semester Credit System learning program.

Third, the constraining factor in implementing the Semester Credit System at MA Negeri 3 Palembang in facing industrial revolution 4.0 is overstressed and stress that accumulates in the students of MA Negeri Palembang so that it hurts their learning achievement. If this is allowed to drag on, then learning achievements that are not optimal will cause their competitiveness in the 4.0 Industrial Revolution era to be weak and unable to compete with other equal educational institutions. Because learning boredom is a mental condition in MA Nigeria, a student experiences extreme boredom to carry out learning activities, which makes their learning motivation decrease.

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