



# Students' Perspective on E-Modules Based on The RADEC Model and Contains Ethnoscience in Social-Science Learning

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**Abstract.** In reality, when preparing lecture teaching materials to support the implementation of MBKM, they often do not refer to the criteria for writing teaching modules. Therefore, students' perceptions need to be studied clearly, measurably, and the results analyzed as reflection material for lecturers in preparing e-modules for lecture materials that support the implementation of MBKM within the UIN Raden Intan Lampung environment. This perception analysis is also a benchmark for success in the implementation of science and science learning which implicitly applies the RADEC model and enriches ethnoscience ideas in Lampung culture in the preparation of the e-module. This research approach uses quantitative survey methods. The research population was all active students of the 2021/2022 PGMI study program and the selected sample was 177 people. The main instrument is a questionnaire and the results are analyzed using SPSS to produce a descriptive report. The research findings show that the mean value is 75.06 and the standard deviation value is 4.35, and the skewness value is -0.173. Likewise, the histogram graph shows a bell-shaped curve and tends to slope to the left. Therefore, the conclusion of this research is that students really gave a more positive response/perception and welcomed the e-module prepared based on the RADEC model and containing ethnoscience in science learning in the implementation of MBKM in the PGMI Study Program at UIN Raden Intan Lampung.

**Keywords:** E-Module, RADEC, Ethnoscience, and IPAS

## 1 Introduction

Independent Learning Campus (MBKM) is a policy issued by the Minister of Education and Culture through Minister of Education and Culture Regulation No. 3 of 2020 which is aimed at Higher Education [1], [2]. The presence of MBKM has given rise to a new paradigm in the implementation of education in higher education. This policy is considered relevant and strategic to support efforts to produce superior, competitive and innovative human resources in various aspects of life [3]. This is because MBKM consists of two essential concepts, namely "Freedom to Learn" and "Free Campus", the logical consequence of which is to become a forum for learning recognition and independent student learning activities. A further implication is that lecturers have the flexibility to design OBE (Outcome Based Education) based learning systems, according to learning achievement targets to improve student competency [4]. In line with what Siregar stated, MBKM makes students more creative and innovative because they have more freedom to choose learning materials and also have many opportunities to practice them in the field [5]. Likewise, Susilawati said that the MBKM learning method can improve the quality and meaningfulness of learning for students [6].

In this regard, one of the keys to successful implementation of the MBKM policy in a tertiary institution is the courage and commitment of lecturers to continue to strive for innovation and renewal in order to produce research findings related to curriculum development, teaching materials and learning models, as well as evaluation tools that are in accordance with MBKM policy. The aim is to be able to create a learning climate that suits students' needs. This is because based on Sopiandah and Masrurroh's research, although MBKM has clear, systematic and structured guidelines and concepts, its implementation in the field is still not optimal. [7]. Many factors are the cause, but the point is that even though the MBKM policy is implemented nationally, from a technical perspective, MBKM operations are returned to the particularities and characteristics of each campus. Moreover, after the impact of online learning, each campus has different, "local" ways to recover from the problem of learning loss [8].

Regarding the problem above, UIN Raden Intan Lampung is one of the universities that has implemented MBKM as a curriculum. This implementation is a follow-up to the Decree of the Director General of Islamic Education Number 7290 of 2020 concerning Guidelines for the Implementation of Free Learning - Independent Campus in the Study Program Curriculum at Islamic Religious Universities [9]. At the empirical level of implementing lectures in class, the availability of teaching materials is something urgent and one of the components that supports the implementation of MBKM. Preparing teaching materials is part of the process of developing innovation in education, in the form of improving paradigms, perspectives, ways of thinking, attitudes, habits, professionalism and behavior in teaching. [10]. The function of teaching materials plays an important role in creating an environment or atmosphere that allows students to learn [11], provide acceleration in understanding the material taught [12], and aims to lead students to master the learning objectives [13].

There are many types of teaching materials that can be used in the learning process, including teaching modules. In the independent curriculum, the term teaching module is the same as the term RPP (Learning Implementation Plan) in the 2013 Curriculum.

Teaching modules are lecture tools based on the independent curriculum which are applied with the aim of achieving predetermined Competency Standards [14]. Teaching modules have a major role in supporting lecturer performance in designing lectures [15]. Basically, teaching modules are learning materials that are arranged systematically and specifically. Systematic means that it is arranged sequentially starting from the opening, main activities, and closing. Meanwhile, specific means that there are specific goals that are carried out to achieve indicators of success. In this context, lecturers are given the freedom to develop, enrich or modify teaching modules provided they meet criteria such as essential, interesting, meaningful and challenging, as well as encouraging interest in learning. Then it is also relevant and contextual according to the stages of cognition and learning experience, and has sustainable value for students [16].

In line with the era of society 5.0, the design of teaching modules must adapt, one of which is by taking advantage of technological developments [17]. This includes preparing teaching modules using digital format or what can be called electronic modules or e-modules[18]. The advantage of e-modules is that they are more interactive because they use links as navigation which allows students to interact more with various content features such as video tutorials, animation and audio. Apart from that, in order to increase the complexity of the student learning experience, modifications and adjustments to e-modules can also be carried out by designing the flow of learning activities by following the syntax of a certain learning model, which in this research uses the RADEC model [19]. Based on the research results, implementing the RADEC model is useful in increasing understanding of concepts[20], improve learning processes/activities [21], [22], improve creative thinking [23], high level thinking [24], and can produce creative ideas/work through the process of collaboration and problem solving [22], [25].

Then in preparing the e-module it is also enriched with ethnoscience content. This foundation refers to the objectives stated in the independent learning curriculum document [26]. In science studies, it integrates social, economic and cultural domains which are closely related to daily life and human welfare [27]. For students, e-modules containing ethnoscience provide many benefits because they study science and at the same time gain knowledge about regional potential along with scientific explanations. [28], [29], [30], [31], [32], [33]. Apart from that, contribute to bringing closer, caring for and maintaining the continuity of cultural heritage [34], [35], [36], [37].

Based on the research findings above, the availability of e-modules with the RADEC model and ethnoscience content is still very necessary to support the implementation of an independent curriculum in learning Natural and Social Sciences (IPAS). If in the 2013 Curriculum, natural science and natural science subjects were separated, then in the independent curriculum these two subjects are combined. The aim is to develop students' thinking skills that are more holistic, multidisciplinary and contextual, so that they can find connections between natural and social aspects in everyday life. [38]. It further aims to help students understand the role of science in solving social and environmental problems and responding to future challenges [39]. Through IPAS, it is also hoped that students will be able to recognize Indonesia's wealth further and utilize the knowledge they have to protect and develop the environment and nature.

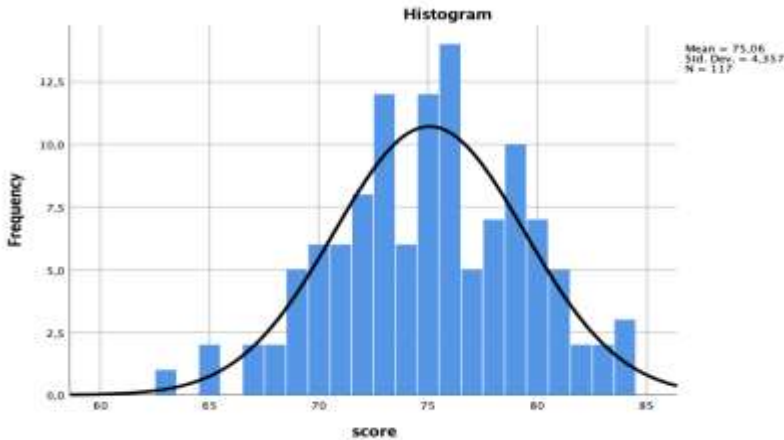
Thus, the aim of this research aims to investigate more deeply from a student's perspective regarding the preparation of e-modules used for implementing MBKM. This perception analysis becomes a reflection and benchmark for success in the implementation of science and science learning in the PGMI Study Program at UIN Raden Intan Lampung in 2023, which implicitly applies the RADEC model and enriches ethnoscience ideas in Lampung culture in the preparation of its e-modules. For this reason, the research question asked is how descriptive statistical data includes mean value, standard deviation, skewness, and histogram graphic presentation regarding student perceptions regarding the preparation of e-modules based on the RADEC model and containing ethnoscience in science learning in the implementation of MBKM in the PGMI Study Program at UIN Raden Intan Lampung?

## 2 Methode

This research uses quantitative descriptive research with survey methods [40]. Because researchers want to get a picture of the problem (data in the field) by looking at a number of answers given by respondents which are displayed in the form of numbers/scores which are then processed, analyzed and processed using the theories that have been studied, so as to be able to clarify the picture of the object under study and From the description of the object, conclusions can be drawn regarding the problem being studied in depth. The population of this study were undergraduate students, class 2021/2022, Madrasah Ibtidaiyah Teacher Education Study Program, Faculty of Tarbiyah and Teacher Training, UIN Raden Intan Lampung, totaling 317 people spread across classes A-J. The selected research sample was 177 people calculated using the Slovin formula with a margin of error of 5% [41]. The research instrument uses a closed questionnaire whose validity and reliability have been tested. To measure the instrument, a perception index is used which measures 8 (eight) criteria indicators in preparing e-modules, such as: essential, interesting, meaningful, challenging and encouraging interest in learning. Then, it is relevant and contextual according to the stages of cognition and learning experience, and has sustainable value for students. In general, all of these indicators are reflected in the preparation of e-modules based on the RADEC model and containing ethnoscience in science learning in the implementation of MBKM in the PGMI Study Program at UIN Raden Intan Lampung. The questionnaire consisted of 24 statements and was made in the form of a Likert scale (Strongly agree, agree, disagree and strongly disagree) with scoring guidelines for positive statements (4, 3, 2 and 1) and negative statements (1, 2, 3 and 4). All questionnaire statement items were constructed based on theoretical analysis and have been validated by experts. Data processing analysis was carried out using descriptive statistics to see the mean value, standard deviation, skewness, and histogram graphic images. The calculation process was assisted by the SPSS version 25 program. For complete data analysis, observation and interview notes, as well as documents (photos) of activities were also used.

### 3 Result & Discussion

The results of descriptive statistical calculations assisted by SPSS show that student perceptions have a mean value of 75.06 and a standard deviation value of 4.35. This mean result indicates the average value of student responses (perceptions) in the good category. Likewise, by looking at the standard deviation values, it appears that the SD scores deviate very far to the right (+) from the mean point, which indicates that students' perceptions are very positive regarding the preparation of e-modules. This finding can also be proven by looking at the Skewness curve, which is -0.173 which shows the slope of the curve is on the left, meaning there are more high scores or indicates more students give more positive (good) responses/perceptions regarding the e-module, prepared based on the RADEC model and containing ethnoscience in science learning in the implementation of MBKM in the PGMI Study Program at UIN Raden Intan Lampung. In the form of a histogram graph, as follows:



**Fig. 1.** Graph of histogram about students' perspective on e-modules based on the RADEC model and contains ethnoscience in social-science learning

Based on the image above, the curve appears to be bell-shaped and tends to be sloping on the left, indicating that there is a greater distribution of higher scores on the right. In conclusion, more students gave positive or good perceptions (responses) regarding the preparation of e-modules based on the RADEC model and containing ethnoscience in science learning in the implementation of MBKM in the PGMI Study Program at UIN Raden Intan Lampung.

Based on the results of the research above, it proves that in general students' perceptions are very positive and respond well to the preparation of e-modules based on the RADEC model and containing ethnoscience in science learning in the implementation of MBKM in the PGMI Study Program at UIN Raden Intan Lampung. This is because the presence of MBKM seems to bring fresh air and a conducive learning climate for students in accordance with the demands and needs of learning in the era of society 5.0. MBKM is truly a forum for recognizing learning and independent student learning activities. In the learning process, they are very happy because it really opens up students' thinking horizons, not only fixating on printed books as they have so far,

but also digitally by utilizing various content features such as video tutorials, animation and audio from the internet

Apart from that, studying science also becomes more meaningful for students, because they study science material but at the same time get scientific explanations regarding the culture that was formed in the area around them. Moreover, they are very aware that the Lampung province is very multicultural and pluralist. In fact, because of this, this area has the nickname "Mini Indonesia" and the regional motto is "Sang Bumi Ruwa Jurai". This is because various ethnic groups/ethnicities live side by side in this province, various religions also exist, so that the renewal of customs, culture, customs and language is very large. Therefore, the implementation of the RADEC model containing ethnosience (culture-based natural science) in studying elementary/MI natural science material, further enriches student learning experiences and at the same time sharpens students to develop attitudes, such as being adaptive, tolerant, and appreciative of diversity and beliefs, as well as views on a society's culture

In this regard, this research has a contribution to thinking in improving students' competence in studying elementary/MI science material. It is hoped that the latest research will obtain a format/design in preparing science learning e-modules, in accordance with the concept of e-module preparation and getting a positive response from students as direct users of the module. The findings of this e-module complement and add to previous research, because the preparation of this e-module is believed to be of constructive value in changing student learning patterns which initially only remember (memorizing) or rote learning, but can increase towards understanding (understanding), and can build a creative mentality in their learning process. In the future, similar research can continue to be developed to obtain updated ideas to add to the treasures of scientific development in Basic Education, so that sustainable concepts are obtained in accordance with the nature of research.

## 4 Conclusion

Based on the research results above, it proves that in general students' perceptions are very positive and good regarding the preparation of e-modules based on the RADEC model and containing ethnosience in science learning in the implementation of MBKM in the PGMI Study Program at UIN Raden Intan Lampung. This good perception includes all assessment indicators, including the preparation of e-modules that meet the essential criteria, are interesting, meaningful, challenging and encourage interest in learning. Then, it is relevant and contextual according to the stages of cognition and learning experience, and has sustainable value for students. In general, all of these indicators are well expressed in the preparation of e-modules based on the RADEC model and containing ethnosience in science learning in the implementation of MBKM in the PGMI Study Program at UIN Raden Intan Lampung. This finding is an extraordinary educational innovation to contribute to advancing science education, especially in elementary education.

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