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The Kopi Lokal Islami Learning Model: Alternative Solution in Supporting 21st-Century Skills and Students Character

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ABSTRACT: This study aims to develop a learning model that enhances 21st-century skills and character development among university-level students. Skills such as critical thinking, creativity, communication, and collaboration with character are crucial for facing the challenges of the Fourth Industrial Revolution and Society 5.0. Therefore, an appropriate learning model is needed for both schools and higher education institutions. The learning model developed in this research is the KoPI Lokal Islami, which integrates cooperative, project-based, and inquiry-based learning with local wisdom and Islamic values. This model was developed using the Dick and Carey Development Model. The outcomes of this study include the KoPI Lokal Islami Learning Model, teaching materials, 21st-century skills assessment tools, and character assessment instruments for prospective science teachers at the university level. Based on expert evaluations and small group testing, the KoPI Lokal Islami Learning Model is deemed highly suitable for implementation. Feedback from students (89 participants) also strongly supports the application of this model in fostering 21st-century skills and character development.

KEYWORDS: Character, KoPI Lokal Islami, 21st-Century Skills

INTRODUCTION

In the 21st century, the demand for students to acquire critical skills that are essential for their success in future careers and life has become paramount (Celik et al., 2024; Nouri et al., 2020; Utaminingsih et al., 2023; Voogt & Roblin, 2012). These skills, collectively known as 21st-century skills, include critical thinking, creativity, communication, collaboration, and digital literacy, which are fundamental in navigating the challenges of a rapidly evolving global landscape (Lang & Šorgo, 2024; Özgem & Akçıl, 2022; Roshid & Haider, 2024). The increasing pace of technological advancements and globalization demands that educational systems worldwide adapt to ensure their students are prepared to thrive in this environment.

However, there is a significant disparity in the quality of education across regions. While developed countries and certain developing nations have integrated 21st-century skills into their curricula, countries like Indonesia, particularly the province of West Nusa Tenggara (NTB), face ongoing challenges. NTB ranks among the lower tiers in Indonesia's education system, reflecting a broader issue of educational inequality across the nation. In 2019, NTB ranked 33rd out of 34 provinces in terms of educational quality, and by 2022, its Human Development Index (HDI) was still ranked 29th (BPS, 2022). The impact of the COVID-19 pandemic further exacerbated the situation, leading to a decline in both the quality and accessibility of education, with many students experiencing significant disruptions in their learning trajectories.

Additionally, the Fourth Industrial Revolution has brought about technological disruptions that are reshaping industries and job markets globally (Arizona, 2020; Asyari et al., 2024). The integration of AI, automation, and digital technologies has created a pressing need for students to develop competencies in areas such as digital literacy and problem-solving (Amanova et al., 2025; Andri Nirwana et al., 2025; Hr et al., 2024; Iori et al., 2023). Yet, despite these global shifts, students in NTB and other regions of Indonesia continue to face challenges related to access to quality education, the persistence of negative cultural influences, and a lack of strong foundational skills in critical areas.

The Indonesian government has recognized these issues and initiated several efforts to address them, including the mental revolution program, character education cultivation, and the promotion of 21st-century skills across the education system (Afandi et al., 2019). These efforts are critical, but their success hinges on effective implementation and the commitment of educators to foster these skills

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in students, especially at the primary education level, where the foundation for lifelong learning is built. According to Haryani et al. (2021), campus-based teacher training programs are vital for equipping prospective educators with the necessary tools to cultivate 21st-century skills among their students.

The importance of 21st-century skills cannot be overstated. These skills, which are central to preparing the "golden generation" of Indonesia by 2045, are not static; they evolve in response to changing societal and technological demands. The ability to think critically, collaborate, communicate effectively, and solve complex problems is crucial for students to succeed in a rapidly changing world. Research has identified several key competencies in the development of these skills, particularly in Indonesia's context, including communication, collaboration, critical thinking, and creativity (Arizona, 2020; Arizona, Sucilestari, et al., 2025; Sucilestari et al., 2025). In addition to these competencies, literacy in science and environmental literacy are increasingly important for preparing students to navigate the challenges of the future.

In light of these challenges, this research aims to explore how critical thinking, creative thinking, communication, and collaboration can be nurtured in Indonesian students, particularly in NTB. Studies have shown that critical thinking is essential for students to address the problems they encounter in their lives (Anggraini et al., 2024; Haryani et al., 2021; Suwono et al., 2017; Willingham, 2020). Critical thinking not only enhances students' knowledge and cognitive abilities but also fosters the ability to make informed, rational decisions in their personal and social lives (Kurniawan et al., 2023; Ramdani et al., 2024; Wale & Bishaw, 2020).

Creativity, a cornerstone of 21st-century skills, plays a pivotal role in enabling students to approach challenges in innovative ways. Creative thinking encourages students to generate original solutions to problems and adapt their knowledge to new contexts (Müller & Pietzner, 2020; Roth et al., 2022). Given the rapid pace of technological change, creativity is increasingly seen as a key skill for future job markets, especially as the shift from seeking jobs to creating jobs becomes more pronounced (Chen & Chen, 2021; Xing & Chen, 2022).

In addition to cognitive skills, communication and collaboration are also critical for preparing students to function effectively in diverse and interconnected environments. Communication skills enable students to express ideas and share knowledge, while collaboration fosters teamwork and respect for diverse perspectives, both of which are crucial in the era of Society 5.0 (Arizona et al., 2024; Asyari et al., 2024). These social dimensions of 21st-century skills are indispensable in promoting peaceful coexistence and collective success in a globalized world.

Character development remains a top priority, particularly in response to increasing concerns about moral degradation among youth. Teachers play a crucial role in shaping the character of students, which is influenced not only by inherent traits but also by the broader social environment (Arizona, Rokhmat, & Ramdani, 2025; Arizona, Rokhmat, Ramdani, et al., 2025). In the context of NTB, it is essential to integrate local wisdom and Islamic values to nurture good character alongside academic skills, especially in an era where ethical considerations are often overshadowed by technological advances.

Given these challenges, there is a pressing need for an integrative learning model that effectively cultivates 21st-century skills and character development in students. Inquiry-based learning, project-based learning, and cooperative learning have all been identified as effective approaches for fostering critical thinking, creativity, and collaboration (Contreras-Espinosa & Eguia-Gomez, 2022; Fitriani et al., 2019; Gu et al., 2023). To address these needs, this research proposes the "KoPI Lokal Islami" learning model, an integrative approach that combines cooperative learning, project-based learning, and inquiry-based learning with local wisdom and Islamic values.

This research contributes to the development of a comprehensive learning model that is not only aligned with global standards of 21st-century skills but also takes into account the local context of NTB. By integrating local wisdom and Islamic values, the KoPI Lokal Islami model offers a unique approach to fostering both academic and moral development in students. This model provides a framework that can be implemented in schools across NTB and other regions of Indonesia, with the potential for broader application in other developing countries facing similar educational challenges.

METHOD

This study is classified as a development research aimed at producing the *KoPI Lokal Islami* learning model, which serves as an alternative solution to foster 21st-century skills and character development in students. The research was conducted from January to August within the PGMI (Islamic Education for Elementary School Teachers) program at the Faculty of Teacher Training and Education, UIN Mataram. The *KoPI Lokal Islami* model includes a range of essential teaching tools for science education, with a

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focus on the topic of magnetism for elementary school students. These tools consist of the Lesson Plan for Elementary School Science Course 2 (IPA MI/SD 2) on magnetism, the *KoPI Lokal Islami* Guidebook, Student Worksheets for magnetism within the *KoPI Lokal Islami* context, a Magnetism Handbook, and Assessment Instruments for evaluating 21st-century skills and character. The development of this model and its associated teaching tools adhered to the research and development framework proposed by Dick and Carey (Dick et al., 2016), providing a comprehensive approach to instructional design.

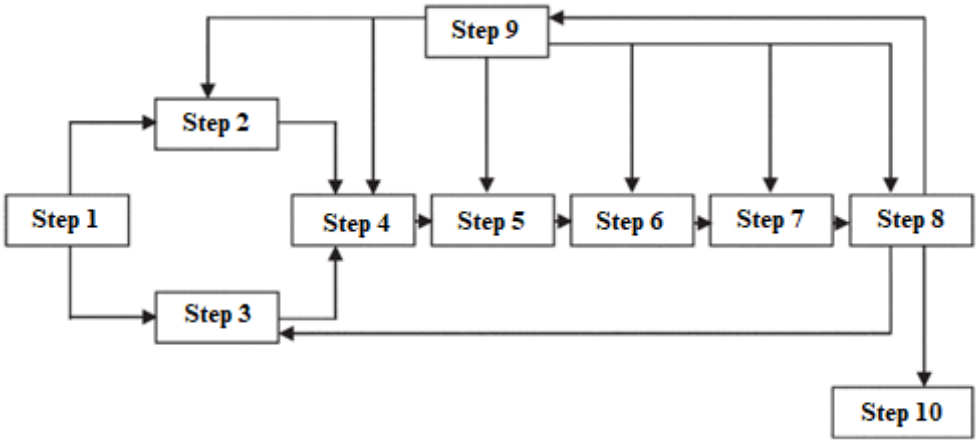

Figure 1. Development Model Flowchart of Dick & Carey (Dick et al., 2016)

The research followed the ten stages outlined in the Dick and Carey development model, which are as follows: 1) Needs Analysis to identify instructional objectives, 2) Instructional Analysis to determine necessary learning steps, 3) Learner and Context Analysis to understand the characteristics of students and the learning environment, 4) Formulation of Specific Objectives to define clear, measurable learning goals, 5) Development of Assessment Instruments or test items, 6) Development of Learning Strategies to outline effective teaching methods, 7) Development and Selection of Learning Materials to select appropriate resources, 8) Formative Evaluation to test and refine instructional materials, 9) Revision of Instructional Materials based on formative evaluation feedback, and 10) Summative Evaluation to assess the overall effectiveness of the instructional materials.

The selection of the Dick and Carey model for this research was based on several key advantages. Firstly, the model provides a systematic approach, with clearly defined steps that ensure a structured and organized process for instructional development. Secondly, it is outcome-focused, ensuring that each stage of the development process is aligned with achieving measurable learning outcomes through a thorough needs analysis, clear objective setting, and ongoing evaluation. Thirdly, the model is learner-centered, taking into account the needs, preferences, and learning styles of students to tailor instructional strategies accordingly. Fourthly, the model supports technology integration, allowing the incorporation of interactive media, simulations, and web-based learning tools to enhance the educational experience. Finally, the emphasis on evaluation at both formative and summative stages ensures that instructional materials are continuously assessed and refined to achieve optimal effectiveness.

The Dick and Carey model is widely recognized for its comprehensive and structured approach to instructional development, making it one of the most commonly used research and development models in educational contexts (Dick et al., 2016). The key advantages of the Dick and Carey model are: 1) its clarity and ease of implementation, with each step clearly defined; 2) its systematic, effective, and efficient nature, ensuring that the instructional process is both comprehensive and well-organized; 3) the detailed instructional planning it provides, which facilitates a structured development process; 4) its focus on comprehensive revision, allowing for continuous improvement of instructional materials based on ongoing evaluations; and 5) the model's comprehensiveness, which covers nearly all aspects necessary for instructional planning, from initial analysis to final evaluation (Mudrikah et al., 2021; Safitri & Ridwan Aziz, 2021). By adopting the Dick and Carey development model, this research aims to contribute significantly to the development of a learning model that not only enhances 21st-century skills but also promotes character development in students. Specifically, this model targets the educational challenges faced by the province of Nusa Tenggara Barat (NTB), which continues to

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confront significant issues related to educational quality and access. Through the implementation of this comprehensive instructional design framework, the study aspires to provide practical and sustainable solutions for improving educational outcomes in the region.

RESULTS AND DISCUSSION

A. Dick and Carey Development Research

This study follows the Dick and Carey Development Model, which consists of a series of systematic steps for developing instructional materials aimed at fostering 21st-century skills and character development in students. The first step in this process is to identify the instructional goals, which involves determining the course outcomes, basic competencies, and learning indicators based on the graduate competency standards and learning outcomes outlined in the curriculum of the PGMI program at the Faculty of Teacher Training and Education, UIN Mataram. Graduates of this program are expected to become competent educators, research assistants, and entrepreneurs in elementary education, with an emphasis on digital literacy, Islamic values, and Indonesian cultural norms. The development of the KoPI Lokal Islami model, a learning model that integrates cooperative, project-based, and inquiry-based learning, addresses these competencies and supports the development of critical thinking, creativity, communication, collaboration, and character skills.

Table 1. The Profile of Graduates of the PGMI FTK UIN Mataram

No.	Profile	Descriptions
1	Educators at the Elementary School (MI/SD) Level	A education graduate with expertise as a classroom teacher/tutor/instructor at the elementary school (MI/SD) level, possessing knowledge in psychology and student development; curriculum, teaching strategies, and learning media; school management; educational policies, and the ability to establish effective communication and networking at both local and global levels, along with digital literacy in line with Islamic values and Indonesian cultural norms.
2	Research Assistant in the field of Elementary Education	An education graduate who is capable of correctly and effectively applying research methodology theories through research practices and scholarly writing in the field of elementary education.
3	Entrepreneur in the field of Elementary Education.	An education graduate who becomes an entrepreneur in the field of media and learning resources, creative and innovative extracurricular activities, crafts, and arts based on information technology (IT) while adhering to Islamic values and Indonesian cultural norms.

(**Source:** Curriculum Document of FTK UIN Mataram Year 2022)

The IPA MI/SD 2 course, which covers the topic of magnetism, was identified as a critical subject requiring development. Many students find this course challenging, with over 50% reporting difficulties in mastering the content, particularly in physics. A detailed analysis of the existing course content revealed that it focused primarily on lower-level thinking skills and was largely teacher-centered. To address these gaps, the study proposes a learning model that incorporates cooperative learning to enhance collaboration skills, project-based learning to foster creativity, and inquiry-based learning to cultivate critical thinking. Additionally, the model integrates Islamic values and local wisdom to promote character development, as these aspects are essential for shaping well-rounded individuals.

The instructional analysis phase aims to identify the skills and knowledge students must acquire to achieve the desired learning outcomes. This involves assessing the feasibility of the KoPI Lokal Islami learning model and its supporting materials, particularly in relation to fostering 21st-century skills and character development. Feedback from students and teachers is integral to refining and improving the model. The learner and context analysis focuses on understanding students' characteristics, such as their prior knowledge, learning styles, and attitudes, to tailor the instructional strategies accordingly. This analysis also considers the learning environment to ensure that the content aligns with the course objectives and competencies.

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Performance objectives are then formulated based on the learning analysis. These objectives define the specific behaviors students should exhibit upon completing the course and serve as a guide for developing test items, performance indicators, or questionnaires. Assessment tools are developed to measure the achievement of these objectives, with a focus on 21st-century skills and character traits such as critical thinking, creativity, communication, collaboration, and religious values. These instruments include achievement tests, questionnaires, observations, and interviews.

Instructional strategies are developed to support the achievement of the learning objectives. These strategies are explicitly outlined in the syntax of the KoPI Lokal Islami learning model, lesson plans, guidebooks, worksheets, and handbooks. Relevant instructional materials are selected and developed to support the learning process, ensuring that they are aligned with the instructional objectives. These materials include printed materials, manuals for both students and instructors, and multimedia resources. The materials for the magnetism topic include discussions on magnet characteristics, production, demagnetization, Earth's magnetism, and magnetic applications.

Formative evaluation is conducted at various stages of the development process to gather feedback and monitor the progress of the instructional materials. This evaluation involves testing the materials with individual subjects, small groups, and larger classes. In this study, 89 students participated in the field trial. Observations and interviews were conducted to collect both qualitative and quantitative data, which were used to make necessary revisions to the learning model and materials. The formative evaluation is an ongoing process that helps improve the instructional materials and ensure their effectiveness.

Finally, revisions are made based on the results of the formative evaluation. The revisions may involve changes to the learning objectives, instructional strategies, learning materials, and assessment tools to improve the effectiveness of the instruction. The revised materials are then subject to summative evaluation, which measures the overall achievement of the learning objectives. This evaluation will help determine the overall effectiveness of the model and its materials. However, for this study, the summative evaluation was not conducted, as the research focused on the formative evaluation to assess the model's development and its potential for improving student learning outcomes.

The research follows a systematic approach to developing a learning model that integrates 21st-century skills and character development, with a focus on cooperative, project-based, and inquiry-based learning. The model is designed to address the challenges faced by students in the IPA MI/SD 2 course, particularly in mastering physics content, and to enhance their critical thinking, creativity, communication, and collaboration skills. Through formative evaluation and continuous feedback, the model aims to improve the learning experience for students in the PGMI program at UIN Mataram and to contribute to the development of well-rounded individuals equipped with the skills needed to succeed in the 21st century.

B. Characteristics of KoPI Lokal Islami Learning Model and Tools

The *KoPI Lokal Islami* (Cooperative, Project-Based, Inquiry) learning model can be implemented in the classroom through a detailed lesson plan, guidebook, and worksheets, following a structured approach designed to engage students and foster essential 21st-century skills. The stages of this model are as follows (see Figure 2):

1. Organizing Students into Learning Groups

Students are grouped into heterogeneous teams consisting of 4 to 6 members. The groups are carefully composed to ensure diversity in gender, ethnicity, learning styles, academic abilities, and backgrounds. This diversity fosters a collaborative environment where students learn from each other's perspectives.

2. Topic Identification

Each group is assigned a topic or issue that is directly related to the subject matter. These topics are chosen to capture students' interest and provide opportunities for exploration. The topics also integrate local wisdom and Islamic values, allowing students to connect their learning to real-world contexts and their cultural heritage.

3. Formulating Questions and Issues

In this stage, teachers guide students by providing a series of open-ended questions. These questions encourage students to engage in critical thinking and formulate hypotheses as part of their inquiry project. The guiding questions are incorporated into the *KoPI Lokal Islami* worksheets to help students organize their thoughts and approach the project methodically.

4. Designing Scientific Project Plans

Each group is tasked with designing a scientific project or research plan. This stage involves careful planning to ensure that the project is feasible and can be completed within the given time frame. Students decide on the methods they will use, identify the materials

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and tools they need, and outline a schedule for the project.

a. Formulating Hypotheses: After identifying the problem, students develop preliminary hypotheses to explain their observations or ideas. These hypotheses are recorded in the KoPI Lokal Islami worksheets.
b. Collaborative Implementation of Scientific Projects: Students begin executing their research plans, working together to collect data, conduct experiments, observe, and analyze results. Collaboration is key at this stage, as students share ideas and findings, assist each other with challenges, and refine their work collectively.
c. Data Collection: Students perform experiments to test their hypotheses. This involves data collection through various methods such as experiments, surveys, or observations. The resources, including the KoPI Lokal Islami guidelines, worksheets, and three-dimensional media, are provided to support the data collection process.
d. Data Analysis: Once data is collected, students analyze the results to determine whether their hypotheses are supported. This includes both qualitative and quantitative analysis, allowing students to test the validity of their hypotheses. If a hypothesis is rejected, students explain the reasoning behind it, linking the results back to the scientific method.
e. Testing and Communicating Results: Students then test their hypotheses using the data collected and communicate their findings. This may involve creating reports or presenting results in other formats such as posters or presentations.
f. Drawing Conclusions: In the final step of the scientific inquiry process, students draw conclusions based on their experimental results, interpreting the data and reflecting on the implications of their findings.

5. ***Presentation of Results***

After completing the inquiry project, each group presents their findings to the class. The presentations can include various forms of media such as slides, posters, or videos, allowing students to showcase their research visually. This encourages communication and public speaking skills while reinforcing the scientific process.

6. ***Discussion and Reflection***

Following the presentations, a group discussion is held to encourage deeper reflection on the project. Students are prompted with questions that challenge their understanding of the topic, their research methods, and their final results. This session also encourages reflection on how local wisdom and Islamic values have been incorporated into their projects, fostering personal growth and a deeper connection to their cultural context.

7. ***Evaluation***

The performance of each student is evaluated based on several factors: active participation in the group, the quality of the presentation and report, and their understanding of the topic. Teachers provide constructive feedback to guide students in their future learning. If appropriate, the inquiry projects may be extended with new research questions or additional stages. This continuation allows students to expand their understanding and engage in more advanced inquiry, further developing their critical thinking, creativity, and problem-solving skills.

Figure 2. The Steps of the KoPI Lokal Islami Learning Model

Based on the validation results from three experts, the *KoPI Lokal Islami* learning model and its instructional materials are classified as highly suitable for use. The evaluated materials, which include the lesson plans, *KoPI Lokal Islami* guidelines, student worksheets, and the magnetism handbook, received positive assessments across all criteria. Overall, the assessment of the *KoPI Lokal Islami* materials achieved a score of 96.33%, indicating their high suitability for implementation in educational settings (see Table 2).

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Table 2. The Results of The Expert Validation for The Kopi Lokal Islami Learning Model

No.	Aspects Assessed	Score (1-4)				
		A	B	C	Total	Mean
A. Lesson Plans						
1	Alignment between indicators and competencies	4	4	4	12	4,00
2	Clarity of indicator formulations	4	4	4	12	4,00
3	Alignment between indicators and learning goals	4	4	3	11	3,67
4	Clarity of learning goal statements	4	3	4	10	3,33
5	Alignment with the steps of the KoPI Lokal Islami	4	4	4	12	4,00
6	Clarity of language usage and understandability	3	4	4	11	3,67
B. KoPI Lokal Islami Guide						
1	Completeness of identity	4	4	4	12	4,00
2	Clarity of the title	4	4	4	12	4,00
3	Alignment with learning indicators	4	4	4	12	4,00
4	Relevance between Worksheets with KoPI Lokal Islami Guide	4	4	4	12	4,00
5	Clarity of introductory sentences and punctuation	3	4	3	11	3,67
6	Clarity of language usage (easy to understand)	3	3	4	11	3,67
7	Clarity of instruction sentences	4	4	4	12	4,00
C. Student Worksheets						
1	Completeness of identity	4	4	4	12	4,00
2	Relevance between with KoPI Lokal Islami Guide	4	4	4	12	4,00
3	Clarity of introductory sentences and punctuation	3	4	4	11	3,67
4	Clarity of picture appearance	4	4	4	11	3,67
5	Clarity of instruction sentences	4	4	4	12	4,00
6	Clarity of language usage (easy to understand)	3	3	4	11	3,67
D. Magnetism Handbook						
1	Completeness of identity	4	4	4	12	4,00
2	Relevance to indicators and learning goals	4	4	4	12	4,00
3	Clarity of introductory sentences and punctuation	4	4	4	12	4,00
4	Clarity of picture appearance	4	4	4	12	4,00
5	Attractiveness of appearance	4	4	4	12	4,00
6	Clarity of language usage (easy to understand)	3	4	4	11	3,67
Sum		94	97	98	96,33	(96,33 %)
Average		3,76	3,88	3,92		
Overall average		**3,85 (96,33%)**				
Category		**very feasible to use**				
The score range is filled with numbers as follows:		Score 76 – 100%			: very feasible to use	
4 = very feasible to use		Score 51– 75%			: feasible to use	
3 = feasible to use		Score 26 – 50%			: less feasible for use	
2 = less feasible for use		Score ≤ 25%			: not feasible for use	
1 = not feasible for use						

Figure 4 showcases the essential learning tools utilized in the *KoPI Lokal Islami* learning model. These tools include the lesson plans, which provide a structured outline for the learning process; the *KoPI Lokal Islami* guide, which serves as a comprehensive resource for both students and instructors; the student worksheets, which are designed to guide students through the inquiry-based activities; and the magnetism handbook, which contains in-depth content related to the subject matter. Together, these materials support the

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implementation of cooperative, project-based, and inquiry-based learning, ensuring that students can effectively engage with the content while developing critical 21st-century skills.

Several points for improvement and reference have been highlighted as follows: 1) While each aspect has been thoroughly detailed, it is crucial to conduct an independent, careful, and comprehensive review. 2) Some terms require adjustments to ensure proper Indonesian spelling and correctness. 3) The captions for images and charts should have their font size increased for better readability. 4) The magnetism handbook is already of high quality, but a further review could uncover additional aspects for enhancement. 5) The exploration of local wisdom and Islamic values needs to be deepened to ensure their alignment and integration with the concept of the magnetic field in an appropriate context. These improvement suggestions from expert validators were taken into account when revising the learning tools. The revised product, incorporating these changes, is presented in Figure 3.

Figure 3. Learning Tools of KoPI Lokal Islami

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After revising the learning tools based on expert validators' feedback, the improved version was tested through a small-scale pilot study involving five students. During this test, students expressed great enthusiasm for participating in the projects outlined in the *KoPI Lokal Islami* guide, and they effectively documented their findings on the provided worksheets. They were engaged in investigating and conducting experiments collaboratively, which sparked their interest and active involvement. Subsequently, the learning tool was tested on a larger scale involving 89 students, where they generally did not face significant challenges in carrying out the given projects. However, some important observations emerged during the implementation of the scientific projects. It was noted that students should consistently be provided with positive motivation, particularly by connecting the projects to local wisdom and Islamic values. The success of the projects was not solely measured by individual or group achievements, but rather by the collective success of all students involved. In cases where some groups struggled, well-established groups should assist those in need, ensuring a cooperative and supportive learning environment. Cooperation and communication among students during the learning process proved to be highly effective. The results of student responses, gathered after their participation in learning through the *KoPI Lokal Islami* Model, overwhelmingly fell into the "strongly agree" category, as summarized in Table 3.

Table 3. Students Responses to KoPI Lokal Islami Learning Model

No.	Statements	Scores				
		Sum	Min	Max	Mean	Std Dev
1	Learning science with the KoPI Lokal Islami learning tools is enjoyable.	312	3	4	3.51	0.61
2	KoPI Lokal Islami learning tools are interesting.	315	3	4	3.53	0.58
3	KoPI Lokal Islami learning tools and media are easy to use	313	3	4	3.52	0.54
4	Instructions for using KoPI Lokal Islami media are easy to understand and implement	315	3	4	3.54	0.55
5	The science material about magnetism becomes easier to understand when using KoPI Lokal Islami learning tools and media	321	3	4	3.52	0.56
6	Instructions for using KoPI Lokal Islami media are easy to understand and implement.	323	3	4	3.54	0.54
7	The science material about magnetism becomes easier to understand when using KoPI Lokal Islami learning tools and media.	318	3	4	3.61	0.61
8	Learning science with KoPI Lokal Islami learning tools and media increases students' curiosity.	315	3	4	3.63	0.56
9	Understanding abstract materials (non-tangible) becomes easier to comprehend after using KoPI Lokal Islami learning tools and media.	311	3	4	3.57	0.58
10	KoPI Lokal Islami learning tools and media provide ample opportunities to analyze and make predictions/hypotheses. learning tools and media provide ample opportunities to analyze and make predictions/hypotheses.	321	3	4	3.61	0.59
11	Insights into magnetism increase when using KoPI Lokal Islami learning tools and media	317	3	4	3.56	0.58
N (Sample)		89 students				
Sum		3481				
Average		**3.56 (88,89%)**				

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No.	Statements	Scores				
		Sum	Min	Max	Mean	Std Dev
Overall average		**Strongly Agree To Use**				
The score range is filled with numbers as follows:		Score 76 – 100% : strongly agree to use				
4 = strongly agree to use		Score 51– 75% : agree to use				
3 = agree to use		Score 26 – 50% : not agree for use				
2 = less agree for use		Score ≤ 25% : not agree for use				
1 = not agree for use						

The *KoPI Lokal Islami* learning model is designed to support the development of 21st-century skills and student character. The acronym *KoPI* stands for Cooperative, Project, and Inquiry, which reflects the model's foundation in these three approaches. Additionally, the term *kopi*—which signifies a popular stimulant used to enhance performance—symbolizes the learning model's objective to boost students' intellectual and cognitive abilities. By integrating cooperative, project-based, and inquiry-based learning, the model aims to cultivate critical thinking, creativity, communication, and collaboration skills among students. To further support character development, local wisdom and Islamic values are incorporated into the *KoPI Lokal Islami* model.

In the learning process, the role of teachers is primarily that of facilitators, resource persons, and group advisors. Students are encouraged to engage in self-directed learning, actively seeking knowledge rather than passively receiving it. The success of the *KoPI Lokal Islami* learning model relies on several key criteria: a) clearly defined project or inquiry topics that are meaningful to students, b) the formation of balanced groups that consider both academic and social aspects, c) clear task explanations and timely feedback to groups, d) intervention when necessary to ensure healthy interpersonal interactions and progress in task execution, e) assessment of group progress and achievements through various methods, and f) the integration of relevant local wisdom and Islamic values into the material being taught.

The learning tools developed to support the *KoPI Lokal Islami* model include lesson plans, *KoPI Lokal Islami* guidelines, student worksheets, and the Magnetism Handbook. Local wisdom and Islamic values are embedded within these tools and are seamlessly integrated with the content being taught. This approach is in line with the work of Andriana et al., (2017), who developed the Big Book Media based on the local wisdom of the Baduy community to introduce and preserve indigenous cultural values. Their study demonstrated that such an approach not only enhances student engagement but also aids in understanding by relating the content to students' own cultural contexts. Similarly, Hartini et al., (2018) developed physics teaching materials in Tabalong Regency, South Kalimantan, that incorporated local community wisdom to foster character development among students. These examples illustrate the value of integrating local wisdom into educational materials to enrich students' learning experiences and promote a deeper connection to their cultural heritage.

C. Characteristics of 21st- Century Skills and Character Instruments

In this study, the 21st-Century Skills Instrument is designed to assess four key skills: critical thinking, creativity, communication, and collaboration. The indicators for critical thinking are based on the works of (Ennis, 1993; Facione, 1990, 2020; Lai, 1995; Robert & Price, 1986). These indicators include the ability to ask questions for clarification, define terms, identify assumptions, interpret and explain, reason related to possibilities and uncertainties, predict, and consider alternative interpretations. The creative thinking skills, based on research by (Bulut et al., 2022; D.J.Treffinger, G.C. Young, E.C Selby, 2002; Guilford, 1950, 1967; Torrance, 1977), focus on fluency, flexibility, originality, elaboration, and metaphorical thinking. Fluency refers to generating many ideas or solutions quickly, flexibility involves approaching problems from various perspectives, and originality is about producing new and unique ideas. Elaboration enriches ideas with details, while metaphorical thinking uses analogies to create new connections.

The communication skills instrument evaluates both oral and written communication abilities. Oral communication skills include attentive listening, respectful speaking, expressing ideas clearly, and summarizing discussions, while written communication includes neat handwriting, proper grammar, logical organization, and presenting data effectively. The collaboration skills instrument assesses students' ability to work effectively within a group, focusing on assistance, responsibility, confidence, and active contribution to tasks. It also emphasizes group cohesion, the willingness to admit shortcomings, and clear task division.

The validation results for the 21st-Century Skills Instrument showed a rating of 94.46%, which indicates that the instrument is very suitable for use. The expert feedback for improvement included renaming the question rubric to a scoring rubric and simplifying the

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observation guidelines. A summary of the validation results is provided in Table 4, showing high ratings for the relevance of statements, clarity of questions, and clarity of instructions. The instrument is overall deemed highly feasible for use.

Table 4. Validation Test Results for 21st- Century Skills Instrument

No.	Assessed Aspect Ratings	Scores				
		A	B	C	Sum	Mean
1	Relevance of statements to 21st Century Skills indicators.	4	4	4	12	4
2	Clarity of question sentences.	4	4	4	12	4
3	Depth of question sentences.	4	4	3	11	3,67
4	Appeal of the instrument's format for reading.	3	3	4	10	3,3
5	Clarity of the instructions for completing the instrument.	4	4	4	12	4
6	Accuracy of the number and/or length of statement sentences according to the educational level.	3	4	4	11	3,67
N (Sample)		22	23	23	22,67 (94,46%)	
Sum		3,67	3,83	3,83		
Average		**3,77 (94,46%)**				
Overall average		**Very Feasible to Use**				

The character instrument, which assesses five key indicators—religious values, integrity, nationalism, independence, and mutual cooperation—was also validated, receiving a rating of 95.83%. These indicators are broken down into sub-indicators such as tolerance, love for peace, law-abiding behavior, discipline, work ethic, honesty, solidarity, and empathy. The validation results, summarized in **Table 5**, indicate that the character instrument is highly suitable for use. Expert feedback for this instrument also recommended renaming the question rubric and simplifying the observation guidelines.

Table 5. Validation Test Results for Character Instrument

No.	Assessed Aspect Ratings	Scores				
		A	B	C	A	Mean
1	Relevance of statements to character indicators	4	4	4	12	4
2	Clarity of question sentences	4	4	4	12	4
3	Depth of question sentences.	4	4	4	12	4
4	Appeal of the instrument's format for reading.	3	3	4	11	3,67
5	Clarity of the instructions for completing the instrument.	4	4	4	12	4
6	Accuracy of the number and/or length of statement sentences according to the educational level.	3	4	4	11	3,67
N (Sample)		22	23	24	23	95,83%)
Sum		3,67	3,83	4		
Average		**3,83 (95,83%)**				
Overall average		**Very Feasible to Use**				

Both the 21st-Century Skills and Character Instruments demonstrated strong validity and reliability, with high ratings from expert evaluators confirming their suitability for educational contexts. These results suggest that the instruments are effective tools for assessing critical skills and character development in students, ensuring their relevance and applicability in promoting comprehensive education.

The development and validation of the *KoPI Lokal Islami* learning model highlight its strong potential to foster 21st-century skills and character development in students. This model integrates cooperative, project-based, and inquiry-based learning approaches, which are essential for preparing students to navigate the complexities of the modern world. These teaching strategies are not just academic tools; they also encourage the development of essential cognitive and interpersonal skills. By focusing on critical thinking,

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creativity, communication, and collaboration, the model equips students with the abilities needed to succeed in both their personal and professional lives. This holistic approach aligns with the demands of the 21st century, where adaptability, innovation, and effective communication are critical.

One of the key strengths of the *KoPI Lokal Islami* model is its incorporation of local wisdom and Islamic values. These elements play a significant role in enriching the learning experience by connecting students to their cultural heritage and ethical foundations. This cultural integration ensures that students not only excel academically but also grow as responsible individuals who are aware of their societal and cultural responsibilities. The combination of modern educational strategies with local and religious values helps students develop a sense of identity and purpose, which is vital for character building. Such an approach is increasingly recognized in contemporary education as it fosters a well-rounded development that goes beyond mere academic achievement.

The validation process for both the 21st-century skills and character instruments demonstrates that these tools are not only relevant but also highly effective in assessing the development of these skills and values. The instruments are carefully designed to measure the key competencies necessary for success in today's world. By focusing on critical thinking and creativity, they align with the current emphasis on fostering analytical and innovative minds capable of tackling complex challenges. Moreover, the focus on communication and collaboration ensures that students are prepared to work in diverse, team-based environments, which are common in both academic and professional settings.

Equally important is the emphasis on character development, which the *KoPI Lokal Islami* model integrates seamlessly into its instructional approach. The instruments designed to measure character traits such as religious values, integrity, nationalism, and mutual cooperation provide a clear framework for fostering the personal and moral growth of students. This aspect of the model is particularly significant in shaping students into individuals who contribute positively to society. The combination of academic skills and character education ensures that the model addresses the full spectrum of student development, which is essential for cultivating individuals who are not only skilled but also ethical and socially responsible.

The pilot testing of the learning model further supports its efficacy. The positive feedback from students highlights the model's ability to engage learners and improve their understanding of complex subjects, such as magnetism. Students expressed increased curiosity and a deeper understanding of abstract scientific concepts, demonstrating the model's success in making challenging content more accessible and engaging. This outcome aligns with the broader educational goals of making learning more interactive and student-centered, which has been shown to improve both student motivation and achievement.

Additionally, the collaborative nature of the learning process encourages students to work together, share ideas, and support one another. This peer interaction not only enhances academic learning but also nurtures social skills, including teamwork and empathy. These interpersonal skills are increasingly recognized as essential components of a well-rounded education, and their inclusion in the *KoPI Lokal Islami* model further underscores its effectiveness in preparing students for future challenges.

In conclusion, the *KoPI Lokal Islami* learning model represents a comprehensive and forward-thinking approach to education that successfully integrates 21st-century skills, character development, and cultural relevance. By combining modern pedagogical strategies with local wisdom and Islamic values, the model provides a well-rounded framework that prepares students for both academic success and responsible citizenship (Arizona et al., 2024; Arizona, Gunawan, et al., 2023; Arizona, Rohkmat, et al., 2023; Arizona, Rokhmat, & Ramdani, 2025; Arizona, Rokhmat, Ramdani, et al., 2025; Sucilestari et al., 2025; Sucilestari & Arizona, 2018). The positive feedback from students and the high validation scores for the assessment instruments confirm the model's potential to make a significant impact on students' learning outcomes, personal development, and overall readiness for the future.

Supporting students' character in a learning model requires incorporating the values of local wisdom, which are good practices derived from local religious or cultural values (Suastra et al., 2017). This is in line with what was expressed by Afandi *et al.* (2019) namely 1) the need for character formation related to the characteristics of the Indonesian nation. The degradation of the nation's morality due to excessive enthusiasm for foreign cultures without a filtering process that impacts the weakening of national values and the erosion of local wisdom is a strong reason why prospective teachers need to be equipped with substantial character. And 2) the need for the cultivation of spiritual values that can be implemented in classroom learning. It is hoped that by directly or indirectly instilling local wisdom and Islamic values, students' characters will be nurtured (Afandi et al., 2019).

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CONCLUSION

The KoPI Lokal Islami learning model combines cooperative, project-based, and inquiry-based learning approaches, integrated with local wisdom and Islamic values. This model fosters the development of critical 21st-century skills, such as critical thinking, creativity, communication, and collaboration, while also promoting character development. The model has been positively validated through expert assessments and pilot testing, indicating its effectiveness in engaging students and enhancing their understanding of complex subjects, particularly in areas like magnetism. Its application in educational settings, especially in regions like West Nusa Tenggara (NTB), addresses ongoing challenges related to educational quality and access.

To further improve and expand the model, it is recommended to continue refining the learning materials based on feedback, implement broader teacher training programs, and integrate technology to enhance the learning experience. Strengthening the inclusion of local wisdom and Islamic values into the curriculum is also essential for fostering well-rounded individuals. Ongoing evaluation and refinement will ensure that the KoPI Lokal Islami model remains adaptable to evolving educational needs, preparing students for future challenges while maintaining a connection to their cultural and ethical foundations.

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