

## Formation Of Students' Academic Character Through The Research Methodology Course In Renewable Energy Engineering Students Of Akom (Olat Maras Community Academy)

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### Abstract

*The development of students' academic character is a crucial objective in higher education, particularly through courses that emphasize scientific processes. The Research Methodology course plays a strategic role in fostering academic character values such as scientific integrity, responsibility, perseverance, and critical thinking. This study aims to examine the role of the Research Methodology course in shaping the academic character of Renewable Energy Engineering students at the Olat Maras Community Academy (AKOM). This study employs a literature review method, utilizing data sources from books, nationally accredited journals, and relevant academic documents. Data were collected through systematic literature searches and analyzed using descriptive qualitative analysis. The findings indicate that research methodology learning integrated with library literacy effectively strengthens students' academic character through the cultivation of academic ethics, the use of credible scholarly sources, and the development of critical thinking skills in reviewing theories and previous studies. These results confirm that the Research Methodology course functions not only as a means of developing research skills but also as an essential medium for fostering students' academic character, particularly in the field of renewable energy engineering*

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## 1. INTRODUCTION

### Background

Academic character is a fundamental aspect of higher education because it reflects the behavior, attitudes, and moral values that underlie student learning. Values such as honesty, discipline, responsibility, and critical thinking skills not only support academic success but also shape students' personalities as ethical professionals. Character education for students is necessary to face moral and ethical challenges in the era of globalization and to encourage students to have a strong moral foundation in both academic and non-academic activities. A literature review shows that strengthening academic character in the world of lectures is crucial to minimizing negative behaviors such as plagiarism and lack of academic responsibility. Maryam (2023).

Character values such as diligence, critical thinking, and responsibility are highly relevant in an academic context. A study shows that a systematic course structure has a positive impact

on developing students' academic character, particularly in terms of rigorous thinking, critical thinking, and a sense of responsibility for the learning process.

The Research Methodology course plays a strategic role in shaping the academic character of university students. It not only teaches research procedures and techniques but also instills the values of academic ethics, scientific rigor, and critical thinking skills in designing and evaluating research. The learning process in this course encourages students to understand the importance of originality in scientific work, regularity in research procedures, and responsibility for data processing and presentation of research results. Through the process of literature review and scientific learning, students are trained to be critical, honest, disciplined, and responsible for each stage of their research. Although specific literature reviews directly examining the role of research methodology in shaping academic character are still limited, the character education literature generally confirms that an integrated learning approach in courses contributes to the internalization of students' character values. Yuliatin et al. (2025).

Students in the Renewable Energy Engineering study program at AKOM are a group of education recipients who are expected to excel not only in terms of technical knowledge but also possess strong character competencies. As a field of study that touches on technological and environmental issues, students are required to possess strong academic character, such as the ability to think critically about data and sources, honesty in compiling scientific assignments, and discipline in applying scientific procedures. Furthermore, the character of responsibility is important considering the implications of research in the field of renewable energy, which are closely related to aspects of sustainability and professional ethics. The development of academic character is also an important factor for students in facing the challenges of implementing technology in society.

Despite its importance, a number of challenges have been identified, including the ongoing challenges of developing students' academic character in higher education. Phenomena such as a lack of academic ethics, plagiarism, irregularities in the scientific writing process, and low academic discipline indicate a weak internalization of character values. Many students still complete academic assignments without regard for the principles of originality and research ethics, and lack awareness of the importance of sound research methodology. This poses a major challenge in higher education, particularly in engineering programs that demand integrity, discipline, and scientific rigor.

### Problem Formulation

1. What is the role of the Research Methodology Course in shaping the academic character of Renewable Energy Engineering students at AKOM?
2. What are the academic character challenges faced by students in taking the Research Methodology course in the study program?

## 2. RESEARCH METHODS

This research uses type of literature review. This study aims to examine and analyze concepts and scientific findings related to the formation of students' academic character through the Research Methodology course. The literature review was chosen because it allows researchers to integrate various theoretical perspectives and previous research findings relevant to the focus of the study.

The data source in this study comes from educational reference books, SINTA-accredited national journals, as well as academic documents related to character education, research methodology, and library literacy in higher education. These sources were selected based on relevance, credibility, and recency of publication.

Data collection techniques were conducted through a systematic literature search utilizing national journal databases, university repositories, and digital libraries. The search was conducted using keywords relevant to the research topic, such as student academic character, research methodology, and library literacy.

Data analysis techniques use descriptive-qualitative analysis, namely by grouping, comparing, and interpreting data from various library sources to obtain a comprehensive picture of the role of the Research Methodology course in shaping students' academic character. The results of the analysis are presented in the form of a structured narrative description in accordance with the research objectives.

## Library Review

### 1. The Concept of Student Academic Character

Student academic character refers to the ethical, moral, and academic attitudes that influence student behavior in the context of higher education, such as academic honesty, discipline, responsibility, and critical thinking skills. Character education in higher education plays a crucial role in shaping students who are not only intellectually competent but also possess moral integrity and responsibility in both academic and professional life. Character education is a systematic effort to strengthen these values, enabling students to behave and act based on the moral values they have internalized. National literature studies demonstrate that character education is effective in shaping positive moral behavior in academic settings and contributes to strengthening students' academic ethics.

### 2. Research Methodology as a Means of Character Formation

Subject *Research methodology* not only teaches scientific research techniques and procedures but also serves as a means of developing students' academic character. Learning research methodology encourages students to think critically, be honest with data and sources, and be responsible in the processing and presentation of research results. Through ethical scientific practices, students are faced with moral challenges such as avoiding plagiarism, maintaining the originality of their work, and implementing disciplined research procedures. This aligns with the concept of character education, which emphasizes the internalization of moral values in everyday academic practice. Research from various educational studies confirms that student involvement in research activities can improve academic integrity and foster a strong critical attitude and intellectual responsibility.

### 3. Library Literacy-Based Learning (Literature Review)

Library literacy-based learning, or *library literacy*, is a learning approach that integrates information literacy skills into students' academic processes. Library literacy includes students' abilities in searching, evaluating, sorting, and using scientific information sources effectively to support mastery of material and the preparation of academic assignments. This literacy is crucial for shaping academic character because it trains students to verify sources, think critically about references, and respect the ethics of scientific writing. Campus libraries often provide information literacy classes that help students access and optimally utilize library collections, including electronic resources and scientific journal databases. Thus, library literacy is a crucial component of academic learning that not only enhances information skills but also supports the development of responsible and critical academic character in students.

### 4. Relevant Previous Research

The following are some previous studies that are relevant to the focus of this study:

#### a. Implementation of Character Education in Higher Education

Yusuf (2024), in a national literature review, showed that character education requires collaboration between various parties in the university environment to create students who have internalized strong moral values in academic life.

#### b. Aspects of Responsibility in Student Character Education

Sari, Bermuli (2021) emphasized the importance of the value of responsibility as part of student character education, which includes honest, disciplined, and responsible attitudes in fulfilling academic tasks.

#### c. Analysis of Information Literacy in Higher Education

Sistarina (2020) in his study, Research in the academic library environment, shows that information literacy is very necessary for the academic community to support teaching and

learning activities and the completion of scientific assignments, such as writing student scientific papers. This literacy helps students access and use information sources effectively to improve academic performance and scientific integrity.

### 3. RESULTS AND DISCUSSION

#### 1. Forms of Academic Character Developed in the Research Methodology Course.

Based on the theoretical and literature studies analyzed, the Research Methodology course has a significant contribution in shaping students' academic character, especially scientific honesty, responsibility, perseverance, and critical thinking skills.

Scientific honesty is reflected in students' demands to compile papers based on valid sources, avoid plagiarism, and present data and arguments truthfully. This process trains students to uphold academic integrity as the primary foundation of scientific activity.

The characteristics of responsibility and perseverance are developed through systematic learning of research methodology, from problem formulation and literature review to scientific report writing. Students are required to complete assignments consistently and according to procedures, fostering discipline and academic consistency.

Meanwhile, critical thinking skills are developed through literature analysis, theory comparisons, and evaluation of previous research findings. Students are not merely passive recipients of information but are encouraged to assess the relevance, strengths, and limitations of a scientific source.

#### 2. The Role of Library Literacy in the Research Methodology Learning Process

Library literacy plays a crucial role as a primary support for learning research methodology. Through library literacy, students are trained to search for, select, and use scientific sources appropriately and responsibly. This process not only improves academic skills but also strengthens students' character and fosters respect for the scientific work of others.

The ability to access accredited national journals, scientific books, and academic documents encourages students to be more thorough and critical in developing theoretical foundations. Library literacy also contributes to building awareness of academic ethics, particularly regarding citations, bibliography writing, and the use of valid references.

Thus, library literacy not only functions as a technical skill, but also as a medium for internalizing academic character values in learning research methodology.

#### 3. The Relevance of Academic Character Building for Renewable Energy Engineering Students of AKOM

For Renewable Energy Engineering students at the Olat Maras Community Academy (AKOM), academic character development is highly relevant. The renewable energy field demands scientific rigor, social responsibility, and the ability to think critically about the data and technology used.

Honesty and responsibility are crucial, given that the results of renewable energy technology studies and applications directly impact environmental sustainability and societal needs. Furthermore, academic diligence and discipline are essential for technical analysis and applied research.

Therefore, the Research Methodology course is a strategic means to equip AKOM Renewable Energy Engineering students with academic character that is in line with scientific demands and the needs of the vocational work world.

#### 4. Relationship with Previous Theories and Research

The results of this study align with character education theory, which emphasizes that moral and ethical values can be internalized through integrated learning processes within courses. Previous research also shows that learning research methodology contributes to improving students' academic integrity, critical thinking skills, and intellectual responsibility.

Furthermore, the findings of this study support previous research that asserts that information literacy and library literacy are crucial elements in building a healthy academic culture in higher education. By integrating research methodology and library literacy, learning is oriented not only toward cognitive achievement but also toward the sustainable development of students' academic character.

#### 4. CONCLUSION

Based on the results of the literature review, it can be concluded that the Research Methodology course plays a crucial role in shaping students' academic character. Key findings indicate that through learning research methodology, students can develop academic character values such as scientific honesty, responsibility, perseverance, discipline, and critical thinking skills. These values are formed through student involvement in the systematic scientific process, from literature research to the preparation of ethical academic papers.

The Research Methodology course serves not only as a means of mastering research concepts and techniques, but also as a medium for internalizing academic character values. The integration of library literacy-based learning into this course strengthens students' awareness of academic ethics, particularly regarding the use of scientific sources, originality of work, and intellectual responsibility. This makes the Research Methodology course strategic in building an academic culture of integrity in higher education.

The implications of this study suggest that lecturers need to design Research Methodology learning that is not only oriented towards cognitive achievement but also consciously instills academic character values through assignments, assessments, and the instillation of scientific ethics. For educational institutions, the results of this study can serve as a basis for strengthening academic policies that support student character development, particularly through strengthening library literacy and an ethical academic culture.

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