The Impact of Classroom Action Research (CAR) and Innovation on Teacher Professionalism: an Intervention of Competence

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Abstract

The objective of this study is to examine the influence of Classroom Action Research and Innovation on Incentives, with Competence as the mediating variable. The variables investigated in the research are Classroom Action Research, Innovation, Competence, and Teacher Professionalism. The data collection method employed was a survey conducted through the distribution of questionnaires. The analysis was conducted using Smart PLS 3.2.8 software, specifically utilizing Partial Least Squares (PLS) analysis. The research findings are a) Classroom Action Research has a positive and significant impact on teacher professionalism, b) Innovation has a positive and significant effect on teacher professionalism, c) Competence shows a positive and significant association with teacher professionalism, d) Classroom Action Research has a positive and significant effect on teacher professionalism through Competence, e) Innovation has a positive and significant effect on teacher professionalism through Competence. Based on these results, it is recommended that teachers at Mandailing Natal Regency Elementary School prioritize and enhance the influence of Classroom Action Research, Innovation, and Competence on Teacher Professionalism. This will contribute to the overall improvement of teacher professionalism in the school. By emphasizing the importance of Classroom Action Research and Innovation, teachers can enhance their professional development and contribute to the advancement of education quality.

Keywords: Classroom Action Research, Innovation, Professionalism, Competence, Teacher.

1. Introduction

In today's era of the fourth industrial revolution, where everything is driven by modern technology and professionalism, the field of education is also undergoing significant changes. Teachers in the fourth industrial revolution are expected to work with professionalism, particularly due to the presence of teacher professional allowances that demand higher levels of professionalism [1]. Teachers are an integral part of the education system and are required to actively fulfill their role as professionals in accordance with the evolving needs of society. Experts in management acknowledge that human resources, specifically teachers, play a central role in the functioning of organizations, including schools. Teachers are crucial in the teaching and learning process within schools. An ideal teacher is expected to possess professionalism, which encompasses knowledge, skills, and integrity. Furthermore, these qualities should be underpinned by a strong faith, gratitude, and a willingness to continuously learn. Professionalism in teaching entails treating everyone equally, practicing fairness, demonstrating loyalty, and being accountable for one's responsibilities [2].

Professionalism holds a significant role as a foundational element in fostering effective bureaucracy within the government. It serves as a standard against which the competence and performance of public officials are evaluated. At its core, professionalism entails a deep understanding and belief that the behavior and actions of public officials should be guided by knowledge and professional values that prioritize the public interest. Professionalism in the teaching profession is crucial for ensuring high-quality education and fostering positive learning outcomes for students [3]. Just like in the government sector, professionalism serves as a cornerstone for teachers and acts as a benchmark for their competence and effectiveness in their work. In the field of education, professionalism goes beyond subject knowledge and instructional skills. It encompasses a range of attributes and behaviors that contribute to creating a conducive learning environment and promoting the holistic development of students. Professional teachers demonstrate a deep commitment to their profession, a strong sense of ethics, and a dedication to continuous improvement [4].

The phenomenon of teacher professionalism in Mandailing Natal Regency is a result of the collaborative efforts of various stakeholders, including teachers themselves, educational institutions, the government, and the community. This collective commitment to upholding the value of education and ensuring quality teaching and learning experiences has significant implications for the overall development and progress of the regency [5]. Firstly, the dedication and professionalism demonstrated by teachers play a
crucial role in shaping the educational landscape in Mandailing Natal Regency. Teachers are not only responsible for imparting knowledge but also serve as role models and mentors for students. Their commitment to providing quality education creates a positive learning environment and fosters the holistic development of students. Educational institutions in the regency also play a vital role in supporting teacher professionalism. By organizing professional development programs, workshops, and seminars, these institutions facilitate continuous learning and growth among teachers. The provision of resources and facilities further empowers teachers to deliver effective instruction and meet the diverse needs of their students. The government's commitment to education is evident through its support for initiatives aimed at enhancing teacher professionalism. Policies and regulations that promote teacher development, recognition, and career advancement contribute to the overall professionalization of the teaching profession. The government's investment in the education sector underscores its recognition of the pivotal role played by teachers in shaping the future of the regency. Furthermore, the community's engagement and support are instrumental in fostering teacher professionalism. When parents, community members, and local organizations actively participate in educational initiatives, it creates a sense of shared responsibility for the success of students. This collaborative approach strengthens the bond between the school and the community, creating a conducive learning environment [6].

By embodying professionalism, teachers contribute to a positive learning environment, inspire students, and promote academic excellence. Their professionalism helps instill a love for learning, critical thinking skills, and values such as respect, empathy, and lifelong learning in their students [7]. In conclusion, professionalism in teaching encompasses a combination of expertise, effective instructional practices, ethical conduct, continuous professional development, collaboration, and reflective practice. It sets the foundation for teachers to provide high-quality education and make a positive impact on the lives of their students, preparing them for success in an ever-changing world [8].

Competence plays a crucial role in determining their level of professionalism. Competence refers to the capacity and capability of an individual to meet the specific job requirements within an educational organization. By possessing the necessary competence, teachers are able to contribute to the desired outcomes and success of the organization [9]. Competence encompasses various aspects, including knowledge, skills, and attitudes, which are essential for teachers to effectively carry out their responsibilities. Knowledge refers to the understanding and familiarity with subject matter, teaching methodologies, and educational principles. Skills encompass the practical abilities and techniques that teachers employ in their instructional practices, such as classroom management, lesson planning, and student assessment. Attitudes, on the other hand, pertain to the mindset, values, and professional ethics that guide teachers' behavior and interactions with students, colleagues, and parents. By possessing the necessary knowledge, skills, and attitudes, teachers are equipped to perform their tasks successfully and achieve desired objectives [10]. Their competence enables them to deliver high-quality instruction, create an engaging and inclusive learning environment, effectively assess student progress, and continuously improve their teaching practices. Additionally, competent teachers are better equipped to adapt to changes, integrate innovative teaching strategies, and stay updated with the latest advancements in their field [11].

Ultimately, the competence of elementary school teachers in Mandailing Natal Regency significantly influences their professionalism [12]. By continuously developing and enhancing their knowledge, skills, and attitudes, teachers can better meet the evolving demands of education, contribute to the overall effectiveness of the organization, and positively impact the learning outcomes and development of their students [13].

Another factor that can influence the professionalism of teachers is Classroom Action Research (CAR). CAR is a research method conducted by teachers in the classroom through self-reflection, aiming to improve their own performance and enhance student learning outcomes [14]. The specific objective of CAR is to continuously improve the quality of classroom teaching and learning processes, leading to improved student achievement. CAR serves as a powerful tool for teachers to enhance the quality of instruction in their classrooms. Through CAR, teachers can evaluate their teaching practices and make improvements based on the findings from their evaluations. The results of CAR can be shared with other teachers, allowing for adaptation and significant impact on teaching not only within the school but also beyond the educational institution where the teacher works. By engaging in CAR, teachers actively reflect on their teaching methods, identify areas for improvement, and implement changes to enhance student learning [15]. Through systematic data collection, analysis, and reflection, teachers can gain valuable insights into the effectiveness of their instructional strategies, classroom management techniques, and student engagement approaches. They can identify what works best for their students and make informed decisions to optimize their teaching practices [16].

CAR empowers teachers to be reflective practitioners who continuously seek to improve their teaching skills and student outcomes. It encourages a culture of ongoing professional development and evidence-based decision-making in the classroom. By engaging in CAR, teachers contribute to the advancement of educational practices, sharing their experiences, and insights with their colleagues to collectively raise the quality of teaching and learning across the school [17].
Furthermore, CAR promotes a sense of ownership and autonomy among teachers. It allows them to take control of their professional growth, aligning their teaching practices with their students’ needs and the goals of the educational institution. Through collaborative inquiry and sharing of best practices, CAR fosters a supportive and learning-focused environment where teachers can learn from each other and collectively strive for continuous improvement [14]. In summary, CAR is an effective approach for teachers to enhance their professionalism by engaging in reflective practices, improving teaching strategies, and promoting student achievement. It empowers teachers to be proactive agents of change and contributes to the overall advancement of educational practices and outcomes.

Another component that can influence the professionalism of teachers is innovation. Innovation refers to deliberate, new changes specifically aimed at achieving system goals. The term “innovation” can be understood as the “process” or “outcome” of developing, utilizing, or mobilizing knowledge, skills (including technological skills), and experience to create or improve products and processes that provide meaningful value [18].

In the context of teaching, innovation involves the introduction and implementation of new ideas, methods, technologies, or approaches to enhance the teaching and learning process. It encourages teachers to explore creative and effective ways to engage students, promote critical thinking, and address diverse learning needs [19]. By embracing innovation, teachers can adapt their instructional strategies to meet the evolving demands of the educational landscape. Innovation in teaching can take various forms, such as integrating technology into the classroom, implementing project-based learning, utilizing interactive teaching tools, incorporating real-world applications, or employing differentiated instructional approaches. These innovative practices not only enrich the learning experience for students but also contribute to the professional growth and effectiveness of teachers. By incorporating innovation in their teaching practices, teachers demonstrate a willingness to continuously improve and adapt to changing educational contexts. They embrace lifelong learning and seek out opportunities to enhance their pedagogical skills and knowledge. Moreover, innovative teachers are more likely to inspire creativity and critical thinking among their students, fostering a dynamic and engaging learning environment [20].

Furthermore, innovation in education is not limited to the classroom. It extends to curriculum development, assessment methods, educational policies, and collaborative initiatives among educators. By actively participating in and contributing to innovative initiatives, teachers can shape the future of education and make a positive impact on the profession as a whole. In summary, innovation is a vital component that influences teacher professionalism. By embracing innovative approaches, teachers can enhance their instructional practices, engage students more effectively, and adapt to the changing educational landscape. Innovation empowers teachers to continuously improve, contribute to educational advancements, and provide meaningful learning experiences for their students [21].

The purpose of this research is to examine the influence of competence, CAR, and innovation on professionalism. The research subjects include all teachers’ professionalism. The findings of this research will contribute to the existing knowledge on the factors that influence teachers’ professionalism. The study will provide insights into the importance of competence, CAR, and innovation in fostering professionalism among teachers. The results may inform educational institutions, policymakers, and professional development providers in designing effective strategies to enhance teachers’ professionalism and ultimately improve the quality of education.

2. Research Method

This study employs a quantitative descriptive approach conducted in primary schools within Mandailing Natal. The research population comprises 283 primary school teachers, and after applying the Slovin formula, the sample size is determined to be 74 participants. The data analysis for this study utilizes the Smart PLS 3.2.8 software, specifically employing Partial Least Squares (PLS). PLS is a statistical method used in Structural Equation Modeling (SEM) analysis that focuses on the variance-based approach. It is particularly suitable when the research objective involves understanding the complex relationships between latent variables and observed indicators [22]. PLS enables researchers to simultaneously assess the measurement model and the structural model. The measurement model assessment in PLS involves evaluating the validity and reliability of the measurement instruments used in the study. Validity refers to the extent to which the indicators accurately measure the latent constructs they represent. Reliability refers to the consistency and stability of the measurements over time. The structural model assessment in PLS aims to examine the causal relationships between the latent variables. It involves testing hypotheses to determine the strength and significance of the relationships [23]. The predictive relevance aspect of PLS allows researchers to assess the ability of the model to predict outcomes and explain the variance observed in the data. The following Figure 1 is the framework for this study.

![Figure 1. Research Framework](image)
3. Result and Discussion

The variables in this study are abbreviated as follows: Classroom Action Research (CAR), Innovation (IN), Competence (CP), and Professionalism (PF). The Table 1 presents the results of data tabulation using Smart-PLS software.

Table 1. Direct Effects

<table>
<thead>
<tr>
<th>Path</th>
<th>Sample</th>
<th>T Statistic</th>
<th>P-Values</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAR&gt;CP</td>
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<td>11.686</td>
<td>0.000</td>
<td>Accepted</td>
</tr>
<tr>
<td>IN&gt;KP</td>
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<td>8.570</td>
<td>0.000</td>
<td>Accepted</td>
</tr>
<tr>
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<td>10.888</td>
<td>0.000</td>
<td>Accepted</td>
</tr>
<tr>
<td>IN&gt;PF</td>
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<td>5.230</td>
<td>0.000</td>
<td>Accepted</td>
</tr>
<tr>
<td>CP&gt;PF</td>
<td>0.432</td>
<td>6.606</td>
<td>0.000</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

The findings presented in Table 1 provide valuable insights into the relationship between CAR and teacher professionalism. The original sample value of 0.488 indicates a positive and significant influence of CAR on teacher professionalism. This implies that when teachers actively engage in CAR and improve their research practices within the classroom, it positively affects their level of professionalism. The high T statistic of 11.686 and the low P-value of 0.000 further strengthen the evidence of the significant impact of CAR on teacher professionalism. These statistical indicators suggest that the observed relationship between CAR and teacher professionalism is unlikely to occur by chance alone. Therefore, the findings support the acceptance of Hypothesis 1, which proposes that CAR positively influences teacher professionalism [24]. By actively participating in CAR, teachers engage in reflective practices, evaluate their teaching methods, and make informed adjustments to enhance the quality of classroom instruction. This continuous cycle of self-reflection and improvement leads to an increase in teacher professionalism, as they strive to provide better learning experiences and outcomes for their students.

The findings underscore the importance of promoting CAR as a professional development strategy for teachers. Schools and educational institutions should encourage and support teachers in conducting CAR, providing them with the necessary resources, training, and collaboration opportunities. This will enable teachers to continually improve their instructional practices, stay abreast of the latest educational research, and enhance their overall professionalism. It is worth noting that the study’s results are based on the analyzed data and sample used in the research [25]. Therefore, further research and replication of the study with a larger and more diverse sample are encouraged to validate and generalize the findings. Additionally, future studies could explore the specific aspects of CAR that have the greatest impact on teacher professionalism, allowing for more targeted professional development initiatives in the field of education.

The findings presented in the table 1 indicate a significant relationship between innovation and teacher competence. The original sample value of 0.518 suggests a positive direction, implying that as innovation increases, there is a corresponding enhancement in teacher competence. This finding aligns with the notion that innovation plays a crucial role in improving and developing teachers’ competencies. The substantial T statistic of 8.570 and the low P-value of 0.000 provide further evidence of the significant impact of innovation on teacher competence. These statistical measures indicate that the observed relationship is unlikely to occur by chance and reinforces the acceptance of Hypothesis 2, which proposes a positive influence of innovation on teacher competence.

Innovation in education involves the intentional development and utilization of knowledge, skills (including technological skills), and experiences to create or improve products, processes, and instructional methods that add meaningful value [26]. By incorporating innovative approaches in their teaching practices, teachers can enhance their competencies and effectively meet the evolving needs of students in a rapidly changing educational landscape. The findings emphasize the importance of fostering a culture of innovation within the education system. Educational institutions should provide support and resources for teachers to explore and implement innovative teaching strategies, integrate technology effectively, and continuously update their knowledge and skills. By encouraging innovation, schools can create an environment where teachers are motivated to enhance their competence and deliver high-quality instruction. It is essential to acknowledge that the study's findings are based on the analyzed data and sample used in the research. Therefore, further research is recommended to validate the relationship between innovation and teacher competence, considering a broader range of contexts and a more diverse sample of teachers. Additionally, future studies could delve into specific innovative practices or approaches that have the most significant impact on teacher competence, allowing for more targeted professional development initiatives in the field of education [27].

The findings presented in the table 1 suggest a strong positive relationship between CAR and teacher professionalism. The original sample value of 0.609 indicates that as the implementation of CAR improves, there is a corresponding increase in teacher professionalism. This finding aligns with the understanding that engaging in CAR allows teachers to reflect on their practices, improve their instructional methods, and ultimately enhance their professionalism. The substantial T statistic of 10.888 and the low P-value of 0.000 further support the significance of CAR in shaping teacher professionalism. These statistical measures indicate that the observed relationship between CAR and teacher professionalism is unlikely to occur by chance. Therefore, it can be concluded that CAR has a significant impact on enhancing teacher professionalism, providing support for the acceptance of Hypothesis 3.
Classroom Action Research is a systematic process that allows teachers to conduct research within their own classrooms, focusing on improving teaching and learning outcomes. Through CAR, teachers engage in reflective practices, identify areas for improvement, implement interventions, and evaluate the effectiveness of their actions. By actively engaging in this process, teachers enhance their professional knowledge, skills, and abilities, leading to increased professionalism in their teaching practice [17]. CAR empowers teachers to take ownership of their professional development and actively contribute to the improvement of teaching and learning processes. It fosters a culture of continuous improvement and reflective practice, enabling teachers to stay updated with current pedagogical approaches, address student needs, and adapt their teaching strategies accordingly. Moreover, CAR allows teachers to tailor their instruction to the specific contexts and challenges of their classrooms, leading to more effective and meaningful learning experiences for students. The study's findings highlight the significance of promoting and supporting the implementation of CAR as a means to enhance teacher professionalism. Educational institutions should provide resources, training, and mentorship opportunities for teachers to engage in CAR effectively [28].

The results presented in Table 1 indicate a positive relationship between innovation and professionalism among teachers. The original sample value of 0.340 suggests that as the level of innovation increases, there is a corresponding improvement in professionalism. This finding aligns with the understanding that innovation, which involves intentional and purposeful changes to improve processes or create new solutions, plays a crucial role in enhancing professional practice. The substantial T statistic of 5.230 and the low P-value of 0.000 provide strong evidence of the significant impact of innovation on professional work. These statistical measures suggest that the observed relationship between innovation and professionalism is not likely due to chance. Therefore, it can be concluded that innovation has a significant influence on enhancing professionalism among teachers, supporting the acceptance of Hypothesis 4.

Innovation in education involves the development and utilization of knowledge, skills, and experiences to create or improve products, processes, and practices that add value to teaching and learning. It encompasses a wide range of aspects, including pedagogical approaches, instructional strategies, curriculum design, technological integration, and assessment methods. By embracing innovation, teachers can adapt their practices to meet the evolving needs of students, leverage new technologies, and implement effective teaching strategies that lead to improved learning outcomes [29]. Innovative teachers are constantly seeking new ways to engage students, foster critical thinking and creativity, and create inclusive and collaborative learning environments. They explore emerging trends, research-based practices, and pedagogical innovations to enhance their instructional methods. Additionally, innovative teachers are open to feedback, reflection, and continuous improvement, actively seeking opportunities to refine their approaches and adapt to the changing educational landscape. Promoting and supporting innovation among teachers is essential for the advancement of the education system as a whole. Educational institutions should provide professional development opportunities, resources, and a supportive culture that encourages and rewards innovation. Collaboration and sharing of innovative practices among teachers can also foster a culture of continuous improvement and inspire others to embrace innovative approaches. While the findings support the positive influence of innovation on professionalism, it is important to recognize that the study's results are based on the analyzed data and the specific sample used.

Furthermore, this study also examines the indirect effects or interventions of the competence variable, which are presented in Table 2.

<table>
<thead>
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<th>Path</th>
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<th>T Statistic</th>
<th>P-Values</th>
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<td>0.000</td>
<td>Accepted</td>
</tr>
<tr>
<td>IN &gt; CP &gt; PF</td>
<td>0.647</td>
<td>4.329</td>
<td>0.000</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

The findings presented in Table 2 provide valuable insights into the relationship between CAR, competence, and teacher professionalism. The results indicate significant direct and indirect effects of CAR on teacher professionalism. First, the indirect influence of CAR on teacher professionalism through competence is shown to be significant, as evidenced by the T statistic of 5.015 and the low P-value of 0.000. This suggests that CAR has an indirect positive impact on teacher professionalism through its influence on competence. Teachers who engage in CAR and enhance their research practices within the classroom are likely to exhibit higher levels of competence, which in turn contributes to their professionalism. Second, the direct relationship between CAR and teacher professionalism is also found to be significant, as indicated by the T statistic of 11.686 and the low P-value of 0.000. This suggests that CAR has a direct positive influence on teacher professionalism. When teachers actively participate in CAR, reflect on their practices, and make improvements based on research findings, they are likely to demonstrate higher levels of professionalism in their teaching [30]. The categorization of CAR as “Complementary mediation” further supports these findings. This means that CAR acts both directly and indirectly to enhance teacher professionalism. The direct impact of CAR on professionalism is significant, while the indirect influence through competence is also positively and significantly related. Overall, the results underscore the
The importance of implementing CAR as a strategy to improve teacher professionalism. Engaging in CAR allows teachers to reflect on their practices, improve their instructional methods, and contribute to the overall professional development of the teaching profession. It is recommended that educational institutions promote and support CAR by providing necessary resources, training, and collaboration opportunities for teachers. By fostering a culture of research and reflection, schools can empower teachers to continually enhance their professionalism and deliver high-quality instruction. It is important to acknowledge that the findings are based on the analyzed data and sample used in the research. Further studies with larger and more diverse samples are encouraged to validate and generalize these findings. Additionally, future research could explore specific aspects of CAR that have the greatest impact on teacher professionalism, leading to more targeted professional development initiatives in the field of education.

Furthermore, the direct influence of innovation on teacher professionalism has an original sample value of 0.609, indicating a positive direction of the relationship between innovation and teacher professionalism. It also has a T statistic of 10.888 and a P value of 0.000, signifying its significance. Similarly, the indirect influence of innovation on teacher professionalism through competence has a T statistic of 4.329 and a P value of 0.000, demonstrating its significant relationship. These findings align with the “Complementary mediation” category, indicating that both the direct and indirect effects of innovation on teacher professionalism are positive and significant. In summary, the results highlight the positive and significant direct influence of innovation on teacher professionalism, as well as the significant indirect influence through competence. This suggests that fostering innovation in educational practices positively impacts teacher professionalism. The findings support the importance of promoting innovative approaches in teaching and learning, as well as providing opportunities for teachers to develop their competencies [8], [14]. By encouraging and supporting innovation, educational institutions can enhance teacher professionalism and ultimately improve the quality of education. It is important to consider that these findings are based on the analyzed data and the specific sample used in the research. Generalizing these results would require further studies with larger and more diverse samples. Additionally, future research could delve deeper into specific aspects of innovation that have the greatest impact on teacher professionalism, allowing for more targeted strategies and interventions in educational settings.

4. Conclusion

In conclusion, the findings provide valuable insights into the relationship between CAR, innovation, and teacher professionalism. The results indicate that CAR has a positive and significant influence on teacher professionalism, supporting the acceptance of Hypothesis 1. Similarly, innovation shows a positive influence on teacher competence and professionalism. These findings highlight the importance of promoting CAR, fostering innovation, and providing professional development opportunities for teachers to enhance their professionalism and competence. Engaging in CAR allows teachers to reflect on their practices, improve their instructional methods, and contribute to the advancement of teaching and learning processes. Furthermore, innovation empowers teachers to adapt their approaches, leverage new technologies, and create inclusive and collaborative learning environments. By embracing innovation and actively participating in CAR, teachers can continuously enhance their professionalism, leading to improved learning outcomes for students. Educational institutions should provide support, resources, and training to facilitate the implementation of CAR and foster a culture of innovation. By doing so, they can create an environment that values and rewards research, reflection, and continuous improvement among teachers. Additionally, further research is recommended to validate and generalize the findings to broader contexts and explore the specific dimensions of innovation that have the most significant impact on professionalism and competence. Overall, the findings highlight the importance of CAR and innovation as effective strategies for enhancing teacher professionalism and competence, ultimately contributing to the overall improvement of the education system.

References


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