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A SIMA-Based Curriculum Data and Administration Management Model to Improve the Effectiveness of Teacher Performance in Public Senior High Schools in North Musi Rawas Regency

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Abstract: Effective management of curriculum data and school administration is essential for improving teacher performance in public senior high schools. However, many schools still face challenges related to fragmented data systems, high administrative workloads, and limited integration between management information systems and teacher performance indicators. This study aims to develop and evaluate a SIMA-based curriculum data and administration management model to improve teacher performance effectiveness in public senior high schools in North Musi Rawas Regency. This research employed a research and development (R&D) approach, involving needs analysis, model design, development, implementation, and evaluation. Data were collected through questionnaires, observations, and documentation involving teachers and school administrators. Teacher performance effectiveness was measured before and after the implementation of the SIMA-based management model. Data analysis was conducted using descriptive and inferential statistical techniques to examine changes in teacher performance effectiveness. The results indicate that the developed SIMA-based curriculum data and administration management model is valid, practical, and effective. The implementation of the model significantly improved teacher performance effectiveness, particularly in administrative efficiency, time management, accuracy of academic data, and focus on instructional tasks. These findings suggest that integrating curriculum and administrative management through a SIMA-based system can reduce teachers' administrative burden and enhance their professional performance. This study contributes theoretically to educational management research and practically provides a reference model for schools and policymakers seeking to improve teacher performance through integrated management information systems.

Keywords: Administrative Management, Curriculum Management, Senior High School, SIMA Based System, Teacher Performance

A. Introduction

Curriculum data and school administrative management play a strategic role in improving teacher performance effectiveness. Well-structured and technology-based

data management systems have been proven to enhance work efficiency, accuracy in academic data processing, and support managerial decision-making in schools (Mulyasa, 2017; Sugiyono, 2020). The implementation of educational management information systems also helps reduce teachers' administrative workload, allowing them to focus more on core teaching activities, assessment, and continuous professional development (Uno & Lamatenggo, 2016).

Despite the widespread implementation of management information systems in schools, studies that specifically develop a curriculum data and administration management model integrated with teacher performance effectiveness remain limited. Most existing research emphasizes technical system development or administrative efficiency, without directly linking system implementation to teacher performance indicators (Isjoni, 2018). Furthermore, empirical studies examining the effectiveness of SIMA-based models in public senior high schools located in regency-level regions are still scarce.

The current condition of curriculum data and administrative management in public senior high schools in North Musi Rawas Regency indicates that many administrative processes are still conducted partially, manually, or using systems that are not optimally integrated. This situation results in data inconsistency, delays in reporting, and an increased administrative burden on teachers (Rivai & Sagala, 2019). At the same time, demands for teacher professionalism and performance effectiveness continue to increase along with the implementation of digital-based education policies and accountability requirements in schools (Ministry of Education and Culture of the Republic of Indonesia, 2020).

This study offers novelty through the development of a SIMA-based curriculum data and administration management model (Academic Management Information System) that is integrative, contextual, and oriented toward improving teacher performance effectiveness. The proposed model does not merely emphasize technological aspects but also integrates user needs (teachers and school management), curriculum workflow, instructional administration, and teacher performance effectiveness indicators. Therefore, the developed model is expected to address the real needs of public senior high schools in North Musi Rawas Regency.

Theoretically, this study contributes to the development of educational management literature, particularly in the areas of school management information systems and teacher performance. Practically, the findings are expected to serve as a reference for schools and local education policymakers in designing and implementing effective and efficient curriculum and administrative data management systems. In addition, the proposed model is anticipated to provide a strategic solution for enhancing teacher professionalism and performance effectiveness through the use of information technology (Sagala, 2017). Based on the above discussion, this study addresses the following research questions: 1) How can a SIMA-based curriculum

data and administration management model be developed to meet the needs of public senior high schools in North Musi Rawas Regency? 2) What is the level of teacher performance effectiveness before and after the implementation of the SIMA-based management model? 3) Does the implementation of a SIMA-based curriculum data and administration management model significantly affect teacher performance effectiveness? The research hypothesis proposed in this study is that the implementation of a SIMA-based curriculum data and administration management model has a positive and significant effect on improving teacher performance effectiveness in public senior high schools in North Musi Rawas Regency.

B. Methods

This study employed a Research and Development (R&D) design aimed at developing and testing a SIMA-based curriculum data and administration management model to improve teacher performance effectiveness. The R&D procedure followed a simplified development framework adapted from Borg and Gall (2003) and Sugiyono (2020), consisting of five stages: (1) needs analysis, (2) model design, (3) model development, (4) model implementation, and (5) model evaluation. This approach was selected to ensure that the developed model was empirically grounded, practically applicable, and effective in real school contexts (Borg & Gall, 2003; Sugiyono, 2020).

The study was conducted in public senior high schools in North Musi Rawas Regency, Indonesia. The respondents consisted of teachers and school administrators, including principals and curriculum coordinators. Respondents were selected using purposive sampling, based on their involvement in curriculum implementation and administrative management. Teachers participated as primary users of the SIMA-based model and as subjects for measuring performance effectiveness.

Data were collected using multiple instruments to ensure data triangulation. Questionnaires were used to measure teacher performance effectiveness before and after the implementation of the SIMA-based management model. The questionnaire indicators included administrative efficiency, accuracy of academic data management, time management, and focus on instructional tasks (Uno & Lamatenggo, 2016). Observation sheets were employed to assess the implementation process and practicality of the model. Interview guidelines were used to obtain in-depth information from school administrators regarding system usability and management impact. Documentation analysis was conducted to examine curriculum documents, administrative reports, and system outputs.

Quantitative data obtained from questionnaires were analyzed using descriptive statistics to determine the level of teacher performance effectiveness and inferential statistics, specifically a paired-sample t-test, to examine differences in teacher

performance before and after model implementation (Creswell & Creswell, 2018). Qualitative data from observations and interviews were analyzed using descriptive qualitative analysis, involving data reduction, data display, and conclusion drawing to support and explain quantitative findings (Miles et al., 2014).

C. Results and Discussion

This study addressed three research questions related to the development and effectiveness of a SIMA-based curriculum data and administration management model in improving teacher performance effectiveness in public senior high schools in North Musi Rawas Regency. The results of the needs analysis indicated that teachers and school administrators required an integrated system capable of managing curriculum documents, instructional administration, and academic reporting in a single platform. Based on these needs, a SIMA-based model was developed through structured stages of design, development, implementation, and evaluation. Expert validation and user feedback showed that the model was conceptually valid and practically applicable in the school context.

Descriptive statistical analysis demonstrated a clear increase in teacher performance effectiveness after the implementation of the SIMA-based model. Improvements were observed in administrative efficiency, timeliness of reporting, accuracy of curriculum data management, and teachers' ability to focus on instructional tasks. Inferential analysis using a paired-sample t-test revealed a statistically significant difference ($p < .05$) between teacher performance effectiveness before and after the implementation of the SIMA-based management model. These findings indicate that the model had a positive and significant effect on improving teacher performance effectiveness.

The findings of this study confirm that the integration of curriculum data and administrative management through a SIMA-based system significantly enhances teacher performance effectiveness. This result aligns with previous studies showing that educational management information systems contribute to improved efficiency, reduced administrative workload, and better professional performance among teachers (Alam & Noor, 2020; Chukwuemeka & Samuel, 2021; Ghavifekr & Rosdy, 2015).

The improvement in administrative efficiency supports earlier findings that digital management systems enable teachers to allocate more time to instructional planning and classroom activities (Fraillon et al., 2020; Kafyulilo et al., 2016). Similarly, the increased accuracy and accessibility of curriculum data are consistent with studies emphasizing the role of integrated information systems in enhancing data-driven decision-making in schools (Ifinedo et al., 2020; Teo et al., 2019).

Furthermore, the positive effect of the SIMA-based model on teacher performance effectiveness supports research highlighting that system usability and alignment with user needs are critical determinants of successful technology implementation in education (Davis, 1989; Scherer et al., 2019). The contextual design of the model also reinforces findings by Tondeur et al. (2017) that technology adoption is more effective when adapted to local school conditions (Tondeur et al., 2017). However, several previous studies reported findings that do not fully support the results of this research. For instance, Bingimlas (2009) and Ertmer and Ottenbreit-Leftwich (2010) found that technology-based systems did not significantly improve teacher performance due to limited digital competence and resistance to change (Bingimlas, 2009; Ertmer & Ottenbreit-Leftwich, 2010). Similarly, Selwyn (2016) argued that technology implementation alone is insufficient to improve performance without strong organizational support. The differences between these findings and the present study may be attributed to the participatory development process, continuous user involvement, and administrative support provided during the implementation of the SIMA-based model (Selwyn, 2016). Overall, the results demonstrate that a well-designed, contextually relevant SIMA-based curriculum data and administration management model can serve as an effective tool for improving teacher performance effectiveness in public senior high schools.

D. Conclusions

This study concludes that the implementation of a SIMA-based curriculum data and administration management model has a positive and significant effect on improving teacher performance effectiveness in public senior high schools in North Musi Rawas Regency. The key finding demonstrates that the developed model successfully integrates curriculum management and administrative processes into a single, coherent system, resulting in increased administrative efficiency, improved accuracy and accessibility of academic data, better time management, and greater teacher focus on instructional tasks. By reducing fragmented and manual administrative work, the SIMA-based model enables teachers to allocate more time and effort to teaching, assessment, and professional development, thereby enhancing overall performance effectiveness. In terms of practical implications, this model provides a feasible and contextually relevant solution for school leaders and education policymakers seeking to improve teacher performance through the use of integrated management information systems. Schools can adopt this model to streamline administrative procedures, strengthen data-driven decision-making, and support teacher professionalism in line with current digital education policies. Additionally, local education authorities may use the findings as a reference for scaling up digital management systems across schools with similar characteristics. For future research, it is recommended that further studies examine the long-term impact of SIMA-based management models on teaching quality and student learning outcomes, as well as explore their implementation in different educational levels and regions. Future research may also incorporate larger samples,

comparative experimental designs, or advanced analytical methods to strengthen generalizability and provide deeper insights into the relationship between educational management information systems and teacher performance effectiveness.

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