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ANALYSIS OF THE WEAKNESSES OF THE INFORMATICS LEARNING MANAGEMENT MODEL AT SMKN 6 BATAM

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Abstract

Textbooks are a learning resource used by teachers and students in the learning process. Textbooks are arranged based on the learning outcomes that have been provided. The effectiveness of the Informatics learning model can be increased by using relevant textbooks. Textbooks are arranged based on instructional objectives which are also equipped with easy-to-understand teaching tools. In line with the development of the independent curriculum until 2024, there are no informatics textbooks compiled based on the latest learning achievements. Currently teachers and students use reference books from various publishers, but these books have not yet been prepared in accordance with the decision of the head of the Ministry of Education and Culture's education standards, curriculum and assessment agency in 2024. The aim of this research is to analyze the weaknesses of the learning management model in the form of informatics textbooks used in learning in SMK N 6 Batam. This research was conducted at SMK N 6 Batam which consisted of 3 informatics subject teachers. To achieve the objectives of this research, the author applied qualitative research with a case study approach. This research data was extracted through observation and in-depth interviews with 3 informatics subject teachers at SMKN 6 Batam. The results of the research show that there are weaknesses in the textbooks used which are not prepared in accordance with the learning outcomes of the 2024 independent curriculum. The stages in the field start from planning in creating an analysis strategy, organizing to carry out the strategy, directing the implementation of the program to supervising the analysis. that has been done. The results of the research provide important information for schools to develop informatics learning management models to prepare textbooks that are in line with the latest learning achievements.

Keywords: Management Model, Textbook, Learning, Learning Achievements, Informatics

INTRODUCTION

Management models play a vital role in organizing educational institutions. These models provide a framework for effective decision-making, resource allocation, and goal setting within a school. By implementing the right management model, educational leaders can streamline processes, increase efficiency, and ultimately improve the overall quality of education provided to students. In this way, management models serve as a guiding force for educational institutions to achieve their mission and vision. In addition, management models can help establish clear communication channels and accountability structures within the organization. This ensures that everyone is on the same page and working toward a common goal. In addition, management models can help educational institutions adapt to changing environments and remain competitive in the ever-evolving field of education. Ultimately, the successful implementation of a management model can improve student achievement, staff satisfaction, and the overall success of the institution.

Textbooks play an important role in teaching and learning activities, which must be adjusted to the development of the curriculum. In the learning and rooting process, it is inseparable from the use of textbooks. Textbooks are one of the student learning materials that contain lesson materials

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and are used to assist teachers and students in carrying out teaching and learning activities. The most important thing in a textbook is the learning material. The learning material must be in accordance with the elements and learning outcomes that have been set.

One of the determining factors for the success of teachers and students in using books is determined by the quality of the textbook. In measuring the quality of textbooks, important aspects must be considered, namely the suitability of the material content with the curriculum, the sequence of the material, the depth and breadth of the material. As a reference, there are three principles that need to be considered in compiling textbooks or learning materials. Mursini (2012:4) states that the principles in selecting materials/subject matter for textbooks include the principles of relevance, consistency, and adequacy. The principle of relevance means relevance. Teaching materials must be relevant and related to learning outcomes.

If the textbook used by students has a low suitability of the material with the curriculum, then the expected competencies are difficult to achieve. Although it has been assessed as appropriate by BSNP, empirically it turns out that there is still presentation of material, especially the contents of Informatics textbooks that are not relevant to the curriculum, for example in the Class X Informatics textbook. The researcher also conducted initial interviews with teachers who have applied the independent curriculum at SMK N 6 Batam to obtain more in-depth information about the suitability of the material. Based on the results of initial interviews with grade IX junior high school teachers at one of the schools that has used the 2013 curriculum, it turns out that the 2013 curriculum textbooks still have shortcomings, especially in terms of the order of teaching the material in the textbook which is difficult for teachers and students to understand.

METHODOLOGY

Management is the science and art of managing the process of utilizing human resources and other resources effectively and efficiently to achieve a certain goal. The term management has various meanings. Universally, management is the use of organizational resources to achieve goals and high performance in various types of profit and non-profit organizations.

The main functions of learning management are planning, organizing, leadership and supervision (Sa'ud and Sumantri, 2007:131).

Educational Management Functions

Planning, namely: the process of defining organizational goals, creating strategies to achieve goals, and developing organizational work activity plans. Planning is the most important process of all management functions because without planning other functions will not be able to run.

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Organizing, namely: the process that concerns how strategies and tactics that have been formulated in planning are designed in an appropriate and robust organizational structure, a conducive organizational system and environment, and can ensure that all parties in the organization can work effectively and efficiently to achieve organizational goals.

Directing (Actuating/Directing), namely: the process of implementing a program so that it can be run by all parties in the organization and the process of motivating so that all parties can carry out their responsibilities with full awareness and high productivity.

Supervision (Controlling), namely: the process carried out to ensure that the entire series of activities that have been planned, organized and implemented can run according to the expected targets even though various changes occur in the business world environment faced. The concept of management in the world of education is basically a tool to achieve educational goals through the management of educational fields. These concepts are studied and presented in learning books. Not as absolute knowledge, but as a comparison in decision-making processes without killing the artistic management skills of a manager (Abd. Rohman, 2018).

The type of research applied to achieve the research objectives is qualitative research with a descriptive/case study/exploratory approach. This type of research is applied to reveal the weaknesses of the informatics learning management model at SMK N 6 Batam.

This research was conducted at SMK N 6 Batam which consisted of 3 Informatics teachers. The subjects of this study were determined using the purposive sampling method so that the information needed came from informants who had knowledge about the substance being studied. The research instrument was the researcher himself using theory as a measure to understand the situation in the field. In addition, the researcher also used an interview guide so that the data collection process was effective and substantive in the field. The following is the interview guide used by the study to explore information related to informatics learning management.

Table 1. Field Interview Guide

No	Management Functions	Management Function Indicators
1	Planning	1.1. Planning is done by involving all components of the activity 1.2. Planning is done by using available internal information 1.3. Planning is done by using available external information 1.4. Planning is done by SWOT analysis 1.5. Concrete planning is available
2	Organizing	2.1. Job description of the organizer is available 2.2. Transparent division of tasks is available 2.3. Division of authority and responsibility is available 2.4. Organizational structure of the organizer is available

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3	Implementation	3.1. Implementation according to initial planning 3.2. Obstacles and challenges in program implementation 3.3. Having a strategy and implementation method 3.4. Commitment in the program implementation process 3.5. All components carry out their respective tasks 3.6. There are changes in planning in the field
4	Controlling	4.1. The implementation team coordinates well 4.2. The leader provides other alternatives when there are obstacles and challenges 4.3. There is supervision of each work component
5	Evaluation	5.1. There are program evaluation instruments 5.2. Evaluation is carried out effectively 5.3. Evaluation results are given to all components 5.4. Evaluation results are followed up for further planning

The data collection for this study was conducted through in-depth interview techniques with 3 informatics subject teachers. Furthermore, the researcher also conducted a documentation study to study the policies, regulations, and procedures for teacher competency development and to strengthen the data obtained from the interview results. The researcher also conducted direct observation of the textbooks used. The researcher's data matched the latest learning achievements issued by the ministry.

RESULT AND DISCUSSION

Relevance of Textbook Material to Learning Outcomes.

The textbooks in the school library still contain old learning outcomes. Among the books that the researcher observed were: Erlangga publisher, Yudhistira publisher and Bumi Aksara publisher.

Indicators for assessing the suitability of book content to Learning Outcomes.

The available textbooks do not yet contain elements of Digital Literacy. For the Computational Thinking element, material development is needed if it is adjusted to the latest learning outcomes.

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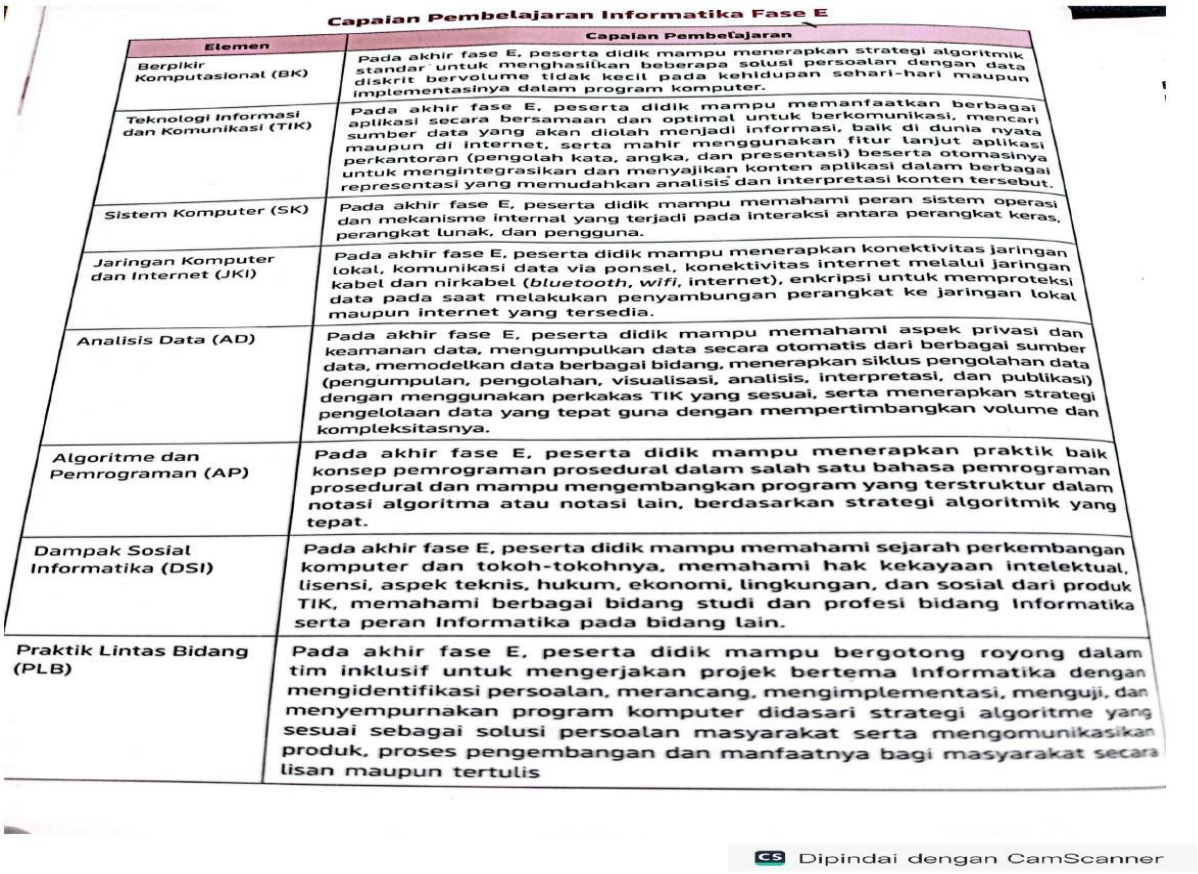

Capaian Pembelajaran Informatika Fase E

Elemen	Capaian Pembelajaran
Berpikir Komputasional (BK)	Pada akhir fase E, peserta didik mampu menerapkan strategi algoritmik standar untuk menghasilkan beberapa solusi persoalan dengan data diskrit bervolume tidak kecil pada kehidupan sehari-hari maupun implementasinya dalam program komputer.
Teknologi Informasi dan Komunikasi (TIK)	Pada akhir fase E, peserta didik mampu memanfaatkan berbagai aplikasi secara bersamaan dan optimal untuk berkomunikasi, mencari sumber data yang akan diolah menjadi informasi, baik di dunia nyata maupun di internet, serta mahir menggunakan fitur lanjut aplikasi perkantoran (pengolah kata, angka, dan presentasi) beserta otomasinya untuk mengintegrasikan dan menyajikan konten aplikasi dalam berbagai representasi yang memudahkan analisis dan interpretasi konten tersebut.
Sistem Komputer (SK)	Pada akhir fase E, peserta didik mampu memahami peran sistem operasi dan mekanisme internal yang terjadi pada interaksi antara perangkat keras, perangkat lunak, dan pengguna.
Jaringan Komputer dan Internet (JKI)	Pada akhir fase E, peserta didik mampu menerapkan konektivitas jaringan lokal, komunikasi data via ponsel, konektivitas internet melalui jaringan kabel dan nirkabel (*bluetooth*, *wifi*, internet), enkripsi untuk memproteksi data pada saat melakukan penyambungan perangkat ke jaringan lokal maupun internet yang tersedia.
Analisis Data (AD)	Pada akhir fase E, peserta didik mampu memahami aspek privasi dan keamanan data, mengumpulkan data secara otomatis dari berbagai sumber data, memodelkan data berbagai bidang, menerapkan siklus pengolahan data (pengumpulan, pengolahan, visualisasi, analisis, interpretasi, dan publikasi) dengan menggunakan perkakas TIK yang sesuai, serta menerapkan strategi pengelolaan data yang tepat guna dengan mempertimbangkan volume dan kompleksitasnya.
Algoritme dan Pemrograman (AP)	Pada akhir fase E, peserta didik mampu menerapkan praktik baik konsep pemrograman prosedural dalam salah satu bahasa pemrograman prosedural dan mampu mengembangkan program yang terstruktur dalam notasi algoritma atau notasi lain, berdasarkan strategi algoritmik yang tepat.
Dampak Sosial Informatika (DSI)	Pada akhir fase E, peserta didik mampu memahami sejarah perkembangan komputer dan tokoh-tokohnya, memahami hak kekayaan intelektual, lisensi, aspek teknis, hukum, ekonomi, lingkungan, dan sosial dari produk TIK, memahami berbagai bidang studi dan profesi bidang Informatika serta peran Informatika pada bidang lain.
Praktik Lintas Bidang (PLB)	Pada akhir fase E, peserta didik mampu bergotong royong dalam tim inklusif untuk mengerjakan projek bertema Informatika dengan mengidentifikasi persoalan, merancang, mengimplementasi, menguji, dan menyempurnakan program komputer didasari strategi algoritme yang sesuai sebagai solusi persoalan masyarakat serta mengomunikasikan produk, proses pengembangan dan manfaatnya bagi masyarakat secara lisan maupun tertulis

Figure 1. Learning Outcomes in Erlangga's Textbook

The Learning Outcomes contained in the textbook are in accordance with the Decree of the Head of the Curriculum Standards Agency and Education Assessment Number 008/KR/2022: Phase E Based on the following Elements.

Table 2 Learning Outcomes in 2022

Elements	Learning Outcomes
(Computational Thinking)	Students are able to apply standard algorithmic strategies to produce several solutions to problems with discrete data of non-small volumes in everyday life and their implementation in computer programs.
TIK (Information and communication technology)	Students are able to utilize various applications simultaneously and optimally to communicate, search for data sources to be processed into information, both in the real world and on the internet, and are proficient in using advanced features of office applications (word processing, numbers, and presentations) along with their automation to integrate and present application content in various representations that facilitate analysis and interpretation of the content.
SK (Computer System))	Students are able to understand the role of the operating system and the internal mechanisms that occur in the interaction between hardware, software, and users.
JKI (Computer Networks and Internet)	Students are able to apply local network connectivity, data communication via mobile phones, internet connectivity via wired and wireless networks (bluetooth, wifi, internet), encryption to protect data when connecting devices to local networks or the available internet.
AD (Data analysis)	Students are able to understand aspects of data privacy and security, collect data automatically from various data sources, model data in various fields, apply data

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	processing cycles (collection, processing, visualization, analysis, interpretation, and publication) using appropriate ICT tools, and apply appropriate data management strategies by considering its volume and complexity.
AP (Social Impact of Informatics)	Students are able to apply good practices of procedural programming concepts in one of the procedural programming languages and are able to develop structured programs in algorithmic notation or other notations, based on appropriate algorithmic strategies.
DSI (Social Impact of Informatics)	Students are able to understand the history of computer development and its figures, understand intellectual property rights, licenses, technical, legal, economic, environmental and social aspects of ICT products, understand various fields of study and professions in the field of Informatics and the role of Informatics in other fields.
PLB (Cross-Sector Practices)	Students are able to work together in inclusive teams to work on Informatics-themed projects by identifying problems, designing, implementing, testing, and perfecting computer programs based on appropriate algorithmic strategies as solutions to community problems and communicating products, development processes and their benefits to the community orally and in writing.

Meanwhile, Informatics Learning Achievements are based on the decree of the head of the education standards, curriculum and assessment agency of the Ministry of Education, Culture, Research and Technology number 032/H/KR/2024 which was stipulated on June 11, 2024.

Table 3 Learning Outcomes in 2024

Elements	Learning Outcomes
1. Computational Thinking	Students are able to understand the validity of data sources; understand the concept of data structures and standard algorithms; apply computational processes carried out by humans independently or in groups to obtain clean, correct, and reliable data; apply data structures and standard algorithms to produce various solutions in solving problems containing complex structured data sets with a large volume; and write simple program design solutions in pseudocode format that is close to computer language. Students are able to understand the model and simulate the dynamics of Input-Process-Output in a Von Neumann computer, and understand the role of the operating system.
2. Elements of Digital Literacy	Students are able to understand the use of search engines with more variables; know the fact-checking ecosystem to sort out facts and not; use lateral reading methods to evaluate various digital information; understand the use of a wider variety of digital technology tools to create reports, presentations, and data analysis and interpretation; understand the concept and application and basic security configuration for local data network connectivity and the internet, both wired and wireless; and understand the use of digital media for content production and dissemination, participation and collaboration. Students are able to respect intellectual property rights, recognize the profession in the field of Informatics, understand the application of digitalization of Indonesian culture, filter negative content in the digital world, implement password management with a password manager, and implement simple two-step authentication, and implement privacy and security configurations on digital platform accounts.

Analysis of new learning outcomes shows that there are no textbooks that are in accordance

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with these learning outcomes, teachers still use references from old textbooks even though they have to adjust to new lesson objectives. So it can be concluded that learning media is used to help teachers or instructors in carrying out learning activities rooted in the classroom. The material in question is a textbook. Learning is said to be successful if the learning objectives are achieved through good student learning outcomes. In this study, it can be seen from the data that student learning outcomes have not been maximized because teachers have not used textbooks that are in accordance with the learning outcomes given. Based on the results of interviews and observations conducted with informatics teachers at SMKN 6 Batam, it turns out that teachers do not have textbooks that are in accordance with the 2024 Informatics learning outcomes. Most teachers still use the old textbooks. This shows that teachers still need other references to complement the existing deficiencies so that learning indicators are achieved optimally.

CONCLUSION AND SUGGESTION

The Education Curriculum continues to change and improve along with the times. The independent curriculum is a renewal program in learning that includes 3 characteristics, namely project-based learning, essential learning of materials and flexible curriculum structure. The Ministry of Education, Culture, Research and Technology has officially implemented the independent curriculum for use since the 2022-2023 academic year. Although student-centered learning models can be effective in improving academic outcomes and student well-being, they may not address systemic issues within schools and communities that can affect student success, such as poverty, lack of resources, or unequal access to opportunities. Focusing only on individual instruction and goal setting may not be enough to overcome these major barriers to learning. For this reason, researchers recommend compiling new textbooks that are in accordance with new learning outcomes.

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