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## The Implementation of Cybernetic Learning to Improve Elementary School Students' Learning Outcomes in SKI Subjects

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### Abstrak

Teori sibermetik menjadi pengontrol komunikasi yang penting diterapkan pada siswa agar mencapai hasil yang efektif. Penelitian ini bertujuan untuk mendeskripsikan implementasi pembelajaran teori sibermetik dalam meningkatkan hasil belajar siswa pada mata pelajaran SKI di MIN 3 Langkat. Adapun jenis penelitian ini ialah kualitatif dengan metode studi deskriptif, artinya peneliti berupaya menggambarkan fenomena senyatanya melalui uraian kalimat tentang topik kajian. Pengumpulan data menggunakan metode observasi, wawancara, dan studi dokumentasi. Analisa data menggunakan teknik reduksi data, penyajian data, dan penarikan kesimpulan. Selanjutnya, data penelitian ini dinyatakan absah apabila memenuhi kriteria kredibilitas, dependabilitas, dan konfirmabilitas. Hasil penelitian ini menyimpulkan bahwa pembelajaran berbasis teori sibermetik memudahkan siswa dalam mengelola informasi atau pesan pembelajaran, sehingga siswa terfokus pada optimalisasi proses pembelajaran. Melalui sistem informasi dan prioritas terhadap proses pembelajaran, maka hasil belajar siswa pada mata pelajaran SKI di MIN 3 Langkat mengalami peningkatan. Hal ini terlihat dari nilai rapor dan kualitas karakter siswa.

**Kata Kunci:** Hasil Belajar, Pembelajaran SKI, Teori Belajar Sibermetik.

### Abstract

*Cybernetic theory becomes an important communication controller applied to students in order to achieve effective results. This study aims to describe the implementation of cybernetic theory learning in improving student learning outcomes in the SKI subject at MIN 3 Langkat. This type of research is qualitative with a descriptive study method, meaning that the researcher seeks to describe the actual phenomenon through a description of the sentence about the topic of study. Collecting data was using the method of observation, interviews, and documentation studies. Data analysis was using data reduction techniques, data presentation, and drawing conclusions. Furthermore, this research data is declared valid if it meets the criteria of credibility, dependability, and confirmability. The results of this study concluded that learning based on cybernetic theory makes it easier for students to manage information or learning messages, so that students focus on optimizing the learning process. Through an information system and prioritization of the learning process, student learning outcomes in SKI subjects at MIN 3 Langkat have increased. This can be seen from the value of the report card and the quality of student behavior with character.*

**Keywords:** Learning Outcomes, SKI Learning, Cybernetic Learning Theory.

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## INTRODUCTION

Learning is a process that is ongoing or ongoing. It contains a variety of phenomena and dynamics that call for the implementation of innovative or updated processes as well as the evaluation of outcomes. Learning presents a variety of issues that spur efforts at improvement and the development of the process dynamics. This is consistent with the higher education tridharma, which unites instruction, research, and community service (Rahmansyah, *et.al.*, 2021).

Through education, administrators of educational institutions work to implement a planned, methodical procedure that is outlined in the curriculum and internal regulations. Teachers and lecturers must also be able to conduct research in order to use it as a tool for assessing student achievement and changes in madrasas and schools. In actuality, this is a way that teachers or lecturers implement their professional services to the general public. As a result, all three are essential and constantly monitoring quality advancements required for the future (Adelia, 2019; Fadiah, *et.al.*, 2022).

The continuation of education is also consistent with the dynamic growth of human existence, which necessitates the satisfaction of civic obligations and their applicability to the workplace. According to preliminary research, learning process issues—which include characteristics of approaches, strategies, models, and learning methods/techniques—are at the heart of educational problems. This is due to the fact that they all need improvement and change, as demonstrated by the trend of digitizing education, which allows for learning to take place in a virtual environment, especially after the Covid-19 pandemic struck and reduced the number of face-to-face spaces in classrooms and madrasas (Sartina, 2018).

The learning component's changes also make it simpler for educators to change with the times. This is only intended to increase learning success by boosting activity and interest in studying as well as student learning achievement. Because the education provider has prepared numerous components to build self-knowledge and skills in accordance with the demands of students, both developmental needs and the world of work in the future, students do not need to worry about the workplace in the future (Abdurakhman & Rusli, 2015).

In order to accomplish objectives, the learning process makes reference to innovative principles. Of course, the planned objectives focus on raising the standards of both institutions and aspiring madrasah/school graduates. To put it another way, the learning process is set up in the learning curriculum design program so that it may be further applied in madrasas. The traits of the community's traditional wisdom are then contrasted with all fresh accomplishments. In addition to serving as a differentiator, the characteristics of changes in the community's local wisdom-based learning process should also be added (Indahsari, 2022).

Education must adapt in the Islamic setting so as to enhance moral or character qualities. This is due to the fact that human conviction in Islamic teachings manifests as attitudes, thoughts, and personalities that are overtly ingrained in normative behavior. That is, Islamic education uses individual and social piety, as a type of human trait, to guide the entire learning process toward changes in conduct (Pradipta & Kurniawan, 2021).

It is clear from the description above that the quality of each student's learning results must strike a balance between daily Islamic character evidence and written evaluations in report cards. This can be seen in how kids respond while they are by themselves or when engaging with others, such as peers, teachers, parents, and madrasa vendors, among others. This implementative form's assessment impacts the targeted student changes in its own unique ways (Amanda & Sylvia, 2022).

It is unjust to judge students, colleges, or institutions that demand a result that has never been accomplished anywhere. Because it's possible to achieve a goal while receiving no benefits. The possibility of achieving learning goals that can be seen in student learning outcomes is suggested here. For instance, we can

see one of the student learning outcomes in Islamic Cultural History (SKI) learning, and if it is met, it might be more appropriate to improve student learning outcomes in school (Fitri, 2018).

Furthermore, it is recognized that everything must start with mature preparation and information transmission to students during the learning process in order to achieve good student learning outcomes. An improvement in student learning outcomes is expected to take place if the teaching approach is effective and appropriate. Every human being will learn, hence learning is a natural phenomena. To help developing one's personality, boosting one's abilities, or altering one's behavior, learning conditions can be altered in accordance with each individual's abilities and circumstances (Ade, 2018; Khodijah, *et.al.*, 2022).

Similar to how we must think while learning in order to determine whether we are picking up new information, learning SKI at school is one such example. Islamic teachings on the need to transform people reveal that one of the elements of the learning model is thinking to comprehend and broaden our knowledge, which will inevitably result in an improvement in student learning results. Cybernetic theory is utilized in this context to describe information processing systems that take place during the learning process.

In reality, earlier academics have explored pertinent research on this subject from a variety of angles. Researching from the perspectives of ontology, epistemology, and axiology is one of them (Suminar, 2019), the influence of cybernetic models on student learning outcomes (Amanda, 2017), student's ability to manage digital-based learning (Telaumbanua, *et.al.*, 2022), cybernetic theory-based distance learning (Nur'alimah, 2022), cybernetic theory in the implementation of training (Yunus, 2018), development of learning tools based on cybernetic theory (Salim & Maryanti, 2017), implications of cybernetic theory in the era of information and technology-based learning (Arifin, *et.al.*, 2017), digital literacy-based learning (Nugraha, *et.al.*, 2020), learning based on google application features and e-learning (Kalifah, *et.al.*, 2022), and development of cybernetic-based learning applications (Nabila, *et.al.*, 2021: 129-140).

It is clear from reading the description and literature review above that there is a gap in the examination of this research topic, specifically with regard to how to apply cybernetic theory-based learning to student Individual learning outcomes. Because of this, academics are interested in exploring the subject further and discovering a scientific repertory of information processing systems in learning and their effects on student learning outcomes. The phrase "Implementation of Cybernetic Learning in Enhancing Student Learning Outcomes in SKI Subjects at MIN 3 Langkat" sums it up as well.

## **METHOD**

This research uses a qualitative approach with a descriptive study method (Arikunto, 2010). The study's main objective is to show how cybernetic learning at MIN Langkat improves student learning results in SKI topics. employing observation, interviews, and documentation studies to gather data. data analysis that includes data display, data reduction strategies, and conclusion-making. This project will begin in November 2022 and end in January 2023. Also, if the research data satisfies the requirements for trustworthiness, dependability, and confirmability, it is deemed genuine. The employed method, data triangulation (methods and data sources) (Assingkily, 2021).

## **RESULTS AND DISCUSSION**

### **Learning Problems and the Role of Cybernetic Learning Theory for Student Optimal Processes**

Learning issues appear to be developing even now. Many investigations are continually conducted by lecturers, as well as by students, professors, and other researchers. The employment of approaches, tactics, methods, and learning models that continue to experience renewal and improvement is where learning challenges first start to be identified in various research. This is only intended to increase learning success by boosting activity and interest in studying as well as student learning achievement.

Education is a necessary step in the process of achieving a goal. These objectives are expressed in a clear and straightforward manner and are arranged according to end objectives that are primarily set by society (Ihsan & Ihsan, 2001). Whereas in Islamic religious instruction, pupils are encouraged to develop their awareness of both personal and communal piety (Muhaimin, 2002: 76). We can see from this justification that personal virtue or piety is expected to be able to radiate outward in interactions with other people (in society), both of the same religion and of other religions, as well as within the country and state, in order to realize national unity and integrity (*ukhuwah wathoniyah*) and even unity and oneness among humans (*ukhuwah insaniyah*).

It is unjust to judge students, colleges, or institutions that demand a result that has never been accomplished anywhere. Because it's possible to achieve a goal while receiving no benefits. The possibility of achieving learning goals that can be seen in student learning outcomes is suggested here. For instance, we can see one of the student learning outcomes in Islamic Cultural History (SKI) learning, and if it is met, it might be more appropriate to improve student learning outcomes in school.

According to Suyono & Harianto (2016: 10) learning is the essence of the entire educational process, where academic and administrative matters take place simultaneously in the learning process. In fact, the level of success in achieving educational goals can be seen during the learning process. This confirms that in order to get good student learning outcomes, everything must begin or begin through the maturity of preparation and knowledge transfer (transfer of knowledge) to students during the learning process. If the method of teaching is good and appropriate, it is likely that an increase in student learning outcomes will also occur. Learning is a natural phenomenon because every human being will learn.

Learning environments can be modified to accommodate a person's personality development, ability enhancement, or behavior modification depending on their circumstances and skills. There are several hypotheses that attempt to explain how learning occurs (Surya, 2004). Similar to how we must think while learning in order to determine whether we are picking up new information, learning SKI at school is one such example. Whether it is relevant to student learning outcomes, the verse describes how thinking about comprehending and expanding our knowledge is one of the learning model's components. This will, of course, improve student learning results (Riyanto, 2014: 20).

It is clear from the explanation above that cybernetic theory is an alternative to traditional education in the digital age. This is due to the fact that a data information processing system will train pupils to actively participate in the learning process. This is built on the digital era and offers a web-based learning approach, keeping students up to date on technical advancements and the sophistication of the times. In actuality, learners may adapt to shifts in the polarization of information processing systems.

### **Cybernetic Learning Theory for Student Development and Improved Learning Outcomes**

At first look, it is clear that this cybernetic theory and cognitive theory, which places more emphasis on the process of learning than on its results, are related. In cybernetic theory, the learning process is significant, but the processed information system that students will learn is even more significant. Later, the procedure will be decided using this information. The information system being studied, of course, has a significant impact on how the learning process will proceed (Budinarsih, 2005). According to Gasong (2018: 155), that cybernetic learning theory is complex and holistic than the use of other learning theories. If you read or understand it at a glance, this cybernetic learning theory at first glance is the same or almost the same as cognitive learning theory, but in fact this cybernetic learning theory is different from cognitive learning theory in general.

Its use during the learning process allows one to observe the difference. Technology is necessary for the implementation of cybernetic theory, hence a theory that lacks it cannot be referred to as cybernetic theory but rather as cognitive theory. The main distinction between the two theories is that information processing and advanced technology are presented side by side in cybernetic theory. This hypothesis could not possibly function without technology.

Moreover, these two theories are frequently ranked equally because they both place an equal emphasis on the learning process rather than learning outcomes (Gasong, 2018). According to Husamah, *et.al.* (2018: 167), digital learning is well suited to the digital era, because information processing is a distinctive identity of online (web-based) learning. Furthermore, the focus of cybernetic learning theory is feedback on the communication process. According to the researchers, if at least one piece of information is successfully received and understood by students in a day, of course it will add to the increase in learning outcomes, rather than lots, but nothing can be accepted by students. Slowly, but impressively, of course it will last in his long term memory. This can be seen by the feedback from students, and students are able to repeat the material that has been explained.

We can infer inferences regarding the significance of cybernetic learning theory from the aforementioned explanations. Information systems and learning procedures are highlighted in the relatively recent learning theory known as cybernetic learning theory. According to the cybernetic learning theory, how students process information during their learning will determine the feedback that is acquired from learning outcomes. The feedback you receive will be good if you are good at analyzing the data. Many people, including numerous information processing-oriented approaches, have devised ways to incorporate cybernetic theory into educational activities. For instance, consider the fundamental idea of the Algorithmic and Heuristic Approach Model, which is also a part of Cybernetic Theory. The following discussion, which focuses on the significance of information processing methods in cybernetic theory, will provide brief descriptions of each.

### **Improving Student Learning Outcomes through Cybernetic-Based Learning**

The focus of cybernetic learning theory is information processing, which refers to students' abilities or methods for analyzing the information they have been given as well as their means of enhancing those abilities to master the material. Moreover, references are used by the teacher or teacher to improve the effectiveness of information transfer to the students. According to their own view, humans handle environmental stimuli, arrange data, see difficulties, construct concepts, and solve problems by employing symbols or symbols, both verbal and non-verbal that are easier to understand the first time around.

Through this communication, the teacher acts as a source and uses oral, written, and non-verbal symbols to communicate information to recipients who are students in the context of learning and learning. Instead, in order to facilitate two-way dialogue, pupils will provide some responses to the teacher (feedback). So, under the notion of cybernetic learning, communication is crucial. The way a teacher presents information or interacts with pupils has a significant impact on how well they learn and comprehend the subject matter. For instance, as we observed during the learning process, some classrooms were arranged in groups or semicircles to facilitate better communication between the teacher and the pupils.

Such early attempts in Islamic religious instruction can be seen in the halaqah or sorogan methods. the place where pupils bring their Koran to read it aloud to the teacher. Teachers can connect and speak with pupils directly in this fashion, fostering a close and strong relationship between them. Surya (2004) also gave his opinion that "This method can greatly improve communication compared to the classical class system where the seating formations are arranged in a long back row. Because of course this situation will greatly affect the comprehension between students who sit behind and those who sit in the front.

In the cybernetic learning theory, communication is crucial to the processing of information (Mu'ammam, 2019). Given some of the aforementioned justifications, it makes sense that cybernetic theory stresses the learning process rather than learning outcomes. In addition to the process, the information processing is also crucial. Encoding and storage of information come first, then storage and disclosure of information that has been stored in memory come last in the process of processing information in memory (retrieval). The search process moves hierarchically, starting with the most general and inclusive information and continuing until the requested information is found in memory (Darmadi, 2017).

If the operating process is aware of the properties of the material to be studied—in cybernetic theory, this refers to the information system to be studied—it will proceed naturally. Certain topics will be better served if they are presented in a systematic, linear, sequential fashion, while other topics will be better served if they are presented in a "open" format that allows for creative thought and imagination. For instance, in comprehending the SKI lesson that covers the forbidden war's history. It would be more beneficial if the student had the chance to express what he already understood about the subject before turning to the teacher or the book he was reading for explanation.

Further, the instructor will continue to influence the learning process in the hopes that students' comprehension of the concept is not exclusive, monolithic, dogmatic, or linear and that their thinking continues in the same direction that we previously directed. Gasong (2018: 160) argues that the success of learning is considered successful if students are able to re-communicate teaching materials using their own language. Based on these results students can decide what actions to take to improve learning outcomes if they are not satisfactory. It should be underlined that the application of this cybernetic theory follows or goes hand in hand with the speed of technology. This means that the more sophisticated the technology that is presented as a learning tool and media, the more likely it will be successful in achieving learning objectives.

Teachers, in addition to technology, are crucial to how well students assimilate information. Instructors must be able to communicate with students so that learning opportunities are not just confined to slides and learning resources (Kosasih, 2016: 115). According to Dewi & Budiana (2018: 157) the teacher's function in this case is to plan, prepare and complete important stimuli for symbolic input (verbal information, words, numbers and so on) and referential input (objects and events) which will lead to concept information, which is suitable for guiding students in manipulating the concept process and preparing feedback from an exercise/lesson.

Teachers of SKI subjects at MIN 3 Langkat employ a lecture-based (traditional) approach of instruction together with homework assignments. Yet, it is typical for subject teachers to convey content using technology tools like infocus, but simply in the form of slideshows with images and just watching movies. Students still experience less benefit from doing this. This can be evident because there are still a lot of pupils who are less engaged or find the lessons boring. This leads to less than ideal material mastery, which affects the level of learning outcomes attained.

By incorporating relevant learning theory into teaching strategies and encouraging student participation, learning outcomes can be attained. Instructors need to be able to use techniques that appeal to all kinds of learners, including auditory, visual, and kinesthetic learners. Researchers believe that cybernetic theory is a useful learning theory that can be utilized to enhance student learning results, particularly in SKI learning. In order to improve student learning outcomes, cybernetic learning theory will help students develop their problem-solving skills in accordance with their individual learning styles.

## CONCLUSION

Based on the findings of the research, it can be said that learning based on cybernetic theory makes it simpler for students to manage information or learning messages, allowing them to concentrate on streamlining the learning process. The learning results for students taking SKI courses at MIN 3 Langkat have improved thanks to an information system and the priority of the learning process. This is evident from the worth of the report card and the caliber of the students' character-driven behavior.

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