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# Implementation of Cybernetic Learning to Improve Student Learning Outcomes in SKI Subjects at MIN 3 Langkat

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## Abstrak

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 perilaku siswa yang berkarakter.

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

## Abstract

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 using the method of observation, interviews, and documentation studies. Data analysis 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.

## PRELIMINARY

Learning is a system that is continuous or continuous. In it there are various phenomena and dynamics that necessitate the realization of innovation or renewal of processes and evaluation of results. Learning presents various problems that lead to improvement efforts and towards the perfection of the process dynamics. This is in line with the tridharma of higher education which integrates education, research and community service (Rahmansyah, *et.al.*, 2021).

Through education, efforts are made to realize a systematic process that has been planned in the curriculum and internal policies of educational institution administrators. Furthermore, teachers and lecturers are required to be able to conduct research as material for evaluating performance and developments that occur in schools/madrasas. In fact, this is a form of implementation of the professional service of teachers or lecturers to the wider community. Thus, all three are integral and continuously tracking quality improvements needed for the future (Adelia, 2019; Fadiah, *et.al.*, 2022).

The continuity of education is also in line with the dynamic development of human life which demands the fulfillment of community needs and their relevance to the world of work. Preliminary study studies show that educational problems are centered on the learning process, including aspects of approaches,

strategies, models, and learning methods/techniques. This is because all of them require improvement and change, as illustrated in the pattern of digitizing learning which means that learning can be done in a virtual space, especially when the Covid-19 pandemic occurred, limiting face-to-face spaces at schools or madrasahs (Sartina, 2018).

Changes in the learning component also help make it easier for education providers to adapt to the times. This is nothing but aimed at increasing the success of learning, both increasing activity, interest in learning to the results of student learning achievement. Thus, students do not need to worry about the world of work in the future, because the education provider has prepared various components to increase self-knowledge and skills according to the needs of students, both developmental needs and the world of work in the future (Abdurakhman & Rusli, 2015).

The learning process refers to innovative principles in order to achieve goals. Of course, the intended goals are oriented towards improving the quality of institutions and the quality of prospective madrasah/school graduates. In other words, the learning process is arranged in such a way in the learning curriculum planning program to be further implemented in madrasahs. In turn, all achievements in the name of novelty are still juxtaposed with the characteristics of the local wisdom of the community. Not only as a differentiator, but also to add the characteristics of changes in the local wisdom-based learning process of the local community (Indahsari, 2022).

In the Islamic context, education must change in the direction of improving the quality of character or morals. This is because the manifestations of human belief in Islamic teachings are attitudes, thoughts and characters that are explicitly embedded in everyday behavior. That is, Islamic education directs the entire learning process to changes in behavior based on individual piety and social piety, as a form of human quality (Pradipta & Kumiawan, 2021).

Referring to the description above, it is understood that the quality of individual learning outcomes must be balanced between written assessments in report cards and daily proof of Islamic character. This is reflected in the behavior of students when alone, or interacting with other people, including peers, teachers, parents, sellers of merchandise at madrasahs, and so on. This implementative form has its own assessment impact on the changes intended for students (Amanda & Sylvia, 2022).

To determine students or students or institutions that want an outcome that has never been achieved somewhere is an unfair attitude. Because it may happen that the goal is obtained but not benefited. Here it is proposed the possibility of achieving learning objectives which can be seen through student learning outcomes, for example we can observe one of the student learning outcomes in Islamic Cultural History (SKI) learning and if fulfilled, it might be more appropriate to increase student learning outcomes in school (Fitri, 2018).

Furthermore, it is understood that in order to get good student learning outcomes, everything must start or begin through the maturity of preparation and 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. However, learning conditions can be changed according to the abilities and circumstances of each individual, which is to support developing one's personality or enhancing one's abilities or changing one's behavior (Ade, 2018; Khodijah, *et.al.*, 2022).

Likewise in learning, we need to think in order to understand whether we are learning something, one of which is learning SKI at school. If it is related to student learning outcomes, Islamic teachings about the need for changes in human beings explain that one of the components of the learning model is thinking to understand and increase our knowledge which of course will be an increase in student learning outcomes. In this context, cybernetic theory is used to describe information processing systems during the learning process.

In fact, research relevant to this topic has been discussed by previous researchers from various viewpoints. Among them researching from the aspect of the philosophy of ontology, epistemology and axiology (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).

Observing the description and literature review above, it is understood that there is a void in the analysis of this research topic, namely from the aspect of implementing cybernetic theory-based learning on student SKI learning outcomes. For this reason, researchers want this study to deepen the topic and seek to find a scientific repertoire of information processing systems in learning and their impact on student learning outcomes. Furthermore, it is summarized in the title, "Implementation of Cybernetic Learning in Improving Student Learning Outcomes in SKI Subjects at MIN 3 Langkat".

## METHOD

This research uses a qualitative approach with a descriptive study method (Arikunto, 2010). The focus of the study is to describe cybernetic learning in improving student learning outcomes in SKI subjects at MIN Langkat. Collecting data using the method of observation, interviews, and documentation studies. Data analysis 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 technique used, namely data triangulation (methods and data sources) (Assingily, 2021).

## RESULTS AND DISCUSSION

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

Learning problems seem to continue to experience development. Various studies are continuously carried out, both by students, teachers, and even lecturers. It is from various studies that learning problems begin to be seen, both regarding the use of approaches, strategies, methods, and learning models that continue to experience renewal and improvement. This is nothing but aimed at increasing the success of learning, both increasing activity, interest in learning to the results of student learning achievement.

Education is part of the process that is expected to achieve a goal. These goals are ordered by final goals which are essentially determined by society, and are formulated in a concise and concise manner (Ihsan & Ihsan, 2001). Whereas in Islamic religious education, students are not only directed to increase students' beliefs and understanding of individual piety and social piety (Muhaimin, 2002: 76). From this explanation, we can see that personal quality or piety is expected to be able to radiate outwards in daily relations with other humans (in society), both of the same religion and of other religions, as well as within the nation and state so that national unity and integrity (*ukhuwah wathoniyah*) can be realized and even unity and oneness among human beings (*ukhuwah insaniyah*).

To determine students or students or institutions that want an outcome that has never been achieved somewhere is an unfair attitude. Because it may happen that the goal is obtained but not benefited. Here it is proposed the possibility of achieving learning objectives which can be seen through student learning outcomes, for example we can observe one of the student learning outcomes in Islamic Cultural History (SKI) learning and if fulfilled, it might be more appropriate to increase 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 conditions can be changed according to the abilities and circumstances of each individual, which is to support developing a person's personality or enhancing his abilities or changing his behavior. To explain how the learning process takes place, various theories arise (Surya, 2004). Likewise in learning, we need to think in order to understand whether we are learning something, one of which is learning SKI at school. If it is related to student learning outcomes, the verse explains that one of the components of the learning model is to think about understanding and increasing our knowledge, which of course will increase student learning outcomes (Riyanto, 2014: 20).

Based on the description above, it is understood that cybernetic theory is an alternative learning in the digital era. This is because students will be educated to participate during the learning process through a data information processing system. This is based on the digital era which presents a web-based learning process, so that it keeps students updated on technological developments and the sophistication of the times. In fact, students can adjust to changes in the polarization of information processing systems in learning.

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

At first glance, we can see that this cybernetic theory has similarities with cognitive theory, which emphasizes the learning process rather than learning outcomes. The learning process is indeed important in cybernetic theory, but what is even more important is the processed information system that students will learn. This information will later determine the process. How the learning process will take place, of course, is largely determined by the information system being studied (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.

The difference can be seen through its application in the learning process. Cybernetic theory can be implemented if there is technology, so without technology, the theory cannot be said to be cybernetic theory, but cognitive. This difference is the most distinguishing between the two theories, where in cybernetic theory, information processing is conveyed side by side with technological sophistication. Without technology, it would be impossible for this theory to work.

Furthermore, the reason why these two theories are often rated the same is because these two theories are equally concerned with 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.

From the explanations above, we can draw conclusions about the meaning of cybernetic learning theory. Cybernetic learning theory is a relatively new learning theory, which emphasizes information systems and learning processes. According to cybernetic learning theory, the feedback that will be obtained from learning outcomes depends on how students receive information in their learning. If you are good at processing the information, then the feedback you get will be good too. The implementation of cybernetic theory in learning activities has been developed by several figures, including several information processing-oriented approaches. For example, such as the basic conception in the approach model called Algorithmic and heuristic, which is also included in cybernetic theory. Each will be briefly described in the following discussion, which is about how important information processing methods are in cybernetic theory.

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

Cybernetic learning theory is oriented towards information processing, which is about how students' skills or ways of processing the information they have received and their ways of improving their skills to be able to master the information received. Furthermore, the teacher or teacher uses references, so that the delivery of information to students becomes more effective. Information processing refers to the ways people handle stimuli from the environment, organize data, see problems, develop concepts and solve problems using symbols or symbols both verbal and non-verbal according to their own understanding, so that they are easier to understand and understand again.

Through this communication, the teacher as a source conveys information in the context of learning and learning, to recipients, namely students using symbols both spoken, written and non-verbal language. Instead, students will convey some responses to the teacher (feedback) so that there is two-way communication. So, communication is very vital in cybernetic learning theory. The way the teacher conveys information or communicates greatly determines the quality of learning and the quality of students' understanding of the material. For example, as we found during the learning process, where the classrooms were set up in such a way, in the form of a semicircle or circle in groups as an effort to optimize communication between teacher and students.

In Islamic religious education we have found efforts like this from ancient times, such as the halaqah or sorogan method. Where students bring their Koran to read in front of the teacher to recite it. In this way teachers can directly interact and communicate with students, as well as build intense and deep communication between teachers and students. 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.

Communication is key to information processing in cybernetic learning theory (Mu'ammam, 2019). Based on some of the explanations above, it is understandable that cybernetic theory is a theory that emphasizes the learning process rather than learning outcomes. And the most important thing besides the process is the processing of the information. The process of processing information in memory starts from the process of presenting information (encoding), followed by storing information (storage), and the last is disclosing the information that has been stored in memory (retrieval). Memory consists of an organized information structure and the search process moves hierarchically, from the most general and inclusive information until the desired information is obtained (Darmadi, 2017).

The running process will of course go well if the material to be studied (in cybernetic theory what is meant is the information system to be studied) is known in advance its characteristics. Certain subject matter will be more appropriate if it is presented in an orderly, linear, sequential order, while other subject matter will be more appropriate if it is presented in an "open" form and gives freedom to imagine and think. For example, in understanding the lesson about SKI which discusses the history of the taboo war. It would be more effective if the student, before receiving an explanation from the teacher or the book he was reading, first gave the student the opportunity to explain what he knew about the material.

Furthermore, the teacher will continue to control the course of the learning process so that the direction of students' thinking remains controlled in what we directed before, with the hope that their understanding of the concept is not singular, monotonic, dogmatic or linear. 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.

<sup>1</sup>  
In addition to technology, teachers have an important role in the success of student information processing. Teachers must have the ability to convey information, so that students' learning windows are not only limited to learning media and discussion on slides (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.

The method or theory used by SKI subject teachers at MIN 3 Langkat is a lecture (conventional) and assignment learning method. Even so, it is not uncommon for subject teachers to also present learning using technological media such as infocus, but only in the form of slides showing pictures and just watching videos. By doing so, it is still less effective for students. This is seen because there are still many students who are less active, or feel bored with the learning presented. This results in less than optimal mastery of the material which has an impact on low learning outcomes achieved.

Learning outcomes can be achieved by using methods in appropriate learning theory and involving students to be active during the learning process. Teachers must be able to apply methods that please all types of students, be it audio, visual, and kinesthetic. In an effort to improve student learning outcomes, especially in SKI learning, researchers consider that the learning theory that can be used is cybernetic theory. Cybernetic learning theory will awaken students' abilities according to their respective styles in solving several problems or questions, with the hope that this will also affect student learning outcomes.

## <sup>1</sup> **CONCLUSION**

Based on the results of the research conducted, it can be concluded that cybernetic theory-based learning 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.

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