

Imro'atul Husna Afriani

Educational Psychology
Understanding Child Development

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Imro'atul Husna Afriani is an academic in the field of education, especially English language education at the University of 17 August 1945 Banyuwangi, Indonesia. Imro'atul Husna Afriani actively teaches as a lecturer and conducts research in the fields of education and social sciences.

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Editor : Adriana Assyami (German)
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Photos and Illustrations :
Flora Westbrook (United Kingdom), Kristina Paukshtite (Estonia), Monika Kocman (Slovenia)

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FOREWORD

This book is written in a concise and simple manner and is the basis for understanding educational psychology, especially child development. This book is written in a basic manner but does not neglect the details of each topic and material which is expected to provide a comprehensive understanding of the reader. This book discusses 3 basic things in educational psychology based on child development including:

1. Understanding of Educational Psychology
2. Child Growth and Development
3. Learning That Pays Attention to Children's Potential

The 3 things discussed in this book are 3 basic things and are very important to understand in educating children. Because these 3 things are the basis for providing children's education that is psychologically adjusted according to the age of the children in learning.

Best Regards
Imro'atul Husna Afriani

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CHAPTER 1. UNDERSTANDING OF EDUCATIONAL PSYCHOLOGY



Children learn at school, Photo by Monika Kocman (Slovenia)

Basically, psychology touches many areas of life and organisms, both humans and animals. However, even so, more specifically, psychology is often associated with the life of the human organism. Psychology and its sub-knowledge basically have a relationship with other sciences. For example, the relationship between psychology and sociology, anthropology, political science, communication science, biology, natural sciences, philosophy, and education. This relationship is usually reciprocal. One example is the relationship between psychology and education so that the name educational psychology was born. Education is an attempt to humanize humans. That is, it is aimed at shaping the attitudes and mentality of students in a better direction (Bradley,2020).

Educational psychology is a branch of psychology that seeks to apply psychological theories and concepts to understand and improve learning and teaching in formal educational settings. Simply put, educational psychology is concerned with the study of how students learn (both children, adolescents, and adults) and how teacher psychology can help them learn effectively. The topics covered in educational psychology include learning achievement, instructional processes, individual differences in learning, gifted students, children with special needs, and learning difficulties. Educational psychology also uses many theories from other psychological disciplines, especially developmental psychology, behavioral psychology (behavior), and cognitive psychology, in order to solve educational problems that are increasingly diverse in an increasingly complex environment (Hardy et al,2020).

Educational psychology is intended to provide an influence in learning education activities and a more effective teaching and learning process by paying attention to the psychological responses and behavior of students. The conditions of the learning system, teaching methods, and students in each region are not the same. The habits of students when they are in the family and educational environment are sometimes different. Educational psychology appears to provide improvements in the world of education in implementing curriculum, teaching and learning processes, counseling, and evaluation services to get better quality students. Educational psychology intends to apply psychology to processes that bring about behavioral change, in other words for teaching. Meanwhile, the meaning of educational psychology is the study of learning, growth, and individual maturity, and the application of scientific principles to human reactions. This education aims to influence the teaching and learning process.

The basic concept of educational psychology provides an understanding of children as learners, how children learn, how teachers motivate children to learn, and how teachers evaluate learning outcomes. The purpose of studying psychology in education is to understand and enhance the learning and learning process. So it can be concluded that by understanding the theory and science of psychology, educators will understand its true role, which is to make students want and know how to learn. Educational psychology is a field of

psychology that studies the psychological dynamics phenomena and individual behavior in the educational process. The educational process in a school context is usually simply linked to areas related to the teaching and learning process, such as teacher teaching methods, student learning methods, teacher motivation, student learning motivation, student development, the teaching and learning process for gifted children, and the teaching and learning process for children with special needs, the teaching and learning process for critical thinking, and the teaching and learning process for the development of creativity.

Educational psychology is a branch of psychology that studies, researches, and discusses human behavior in its entirety in relation to learning and educational activities in general. Educational psychology is an accumulation of knowledge, wisdom, and various theories based on experiences that teachers should have in order to intelligently solve everyday teaching problems. In simple terms, educational psychology is the field of study of people who study, learn, and teach. Educational psychology is a branch of psychology that focuses on learning how to understand teaching and learning in an educational environment. There are also those who explain that educational psychology is a science and applied science that describes various human activities in relation to the educational situation. And one example is learning how to attract students' attention so that they are more receptive to the lessons being taught.

Educational Psychology is the study of how humans learn in educational settings, the effectiveness of educational interventions, teaching psychology, and social psychology from schools as organizations. Educational psychology is concerned with how students learn and develop, and often focuses on subgroups such as gifted children and those subject to special disabilities. the notion of educational psychology is a psychological discipline that investigates psychological problems that occur in the world of education. Meanwhile, according to the American encyclopedia, the notion of educational psychology is a more principled science in the teaching process that is involved with discoveries and applying principles and ways to increase efficiency in education. Understanding Educational Psychology is the study of human behavior in the world of education which includes a

systematic study of the processes and factors associated with human education with the aim of developing and increasing efficiency in education.

Unlike most interdisciplinary groups in general, psychology and education have an inseparable relationship. The two are mutually exclusive and there are special tradeoffs between them. How did this happen? Simply put, because education has a role in guiding a person's life which will determine how his character and behavior are formed. Meanwhile, psychology is the study of human behavior and behavior. Meanwhile, education requires a study of the behavior and behavior of students to be able to provide the changes desired by the learning objectives. Therefore, the two can hardly be separated. A psychologist will also be involved in the world of education, as well as an educational expert will need a variety of psychology in practice.

Psychology and education cannot be separated from one another, because psychology and education have a reciprocal relationship. The science of education as a discipline aims to provide guidance for human life from birth to death. Education will not work well if it is not accompanied by psychology. Likewise, the character and personality of a person are shown by psychology. Because of the close relationship between psychology and education science, educational psychology was born. These psychological basics are really needed by educators to find out the behavior of their students, whether their students are in good shape during learning activities, or in bad conditions. If so, educators really need this knowledge to overcome students like that and motivate them to stay in a state of enthusiasm in learning. In addition to knowing the behavior of their students, these psychological basics can also control the behavior of educators and provide wiser behavior in dealing with the diversity of characteristics of their students. An educator really needs this kind of knowledge, so that the learning process can run as desired and of course can successfully achieve goals brilliantly in accordance with the educational institution.

The study of educational psychology in relation to the development of educational curricula is especially concerned with understanding aspects of behavior in the context of learning.

Apart from the various schools of psychology that characterize education, in essence, this psychological study pays attention to how educational inputs, processes, and outputs can run without neglecting the behavioral and personality aspects of students. Psychologically, humans are unique individuals. Humans as unique creatures have their own characteristics, different abilities, and different needs. So it is not surprising that there is a group of students who do not fit into the formal education system. If a student is unable to attend formal education at school for some reason, he or she has the right to choose other alternative education that can fulfill his right as a citizen to learn, because every child has the right to education, in any form.

In essence, education is the process of forming students. In order for this formation to be effective and successful, educators must have qualifications or skills in Educational Psychology. The basic concept of psychology in education is generally a sub-discipline of psychology that investigates psychological problems in education which are then formulated in the form of concepts, theories, and methods as solutions to these problems. Educational Psychology also describes the characteristics or learning patterns that are adjusted according to age (cognitive development). If the student is still 5 years old, the learning method is learning while playing as well as if he is a teenager, the group discussion method can be applied. So that by studying Educational Psychology, Educators will realize and understand that their real role is to make students want and know how to learn. Not by providing as much information as possible, but by making students like the activity of finding as much information as possible.

Psychology comes from the Greek word "psyche" (psukhe) which means "hot-blooded" which means life, soul, ghost, and Logos which means knowledge. So, literally, psychology means psychology, human behavior, and behavior. The purpose of educational psychology is not to provide accurate recipes for teachers and other people that affect student achievement, as if only with that recipe the teaching and learning process will be successful. Educational psychology actually wants to reveal general principles that can be applied in a broad educational environment. Expert research working in this area seeks to answer questions

such as: how does a child or adolescent learn? What can motivate him to learn? What things affect (support or hinder) the learning process? How to improve the quality and learning outcomes? Psychologists and educational psychologists can work in a variety of settings, such as in college as teachers or researchers. Apart from that, many play a role as consultants who help teachers develop learning programs, design materials for instruction or training in educational or workplace environments. In addition, some work in primary and secondary schools to deal directly with individual student problems. They become a place for teachers to consult, become partners to collaborate in developing learning approaches, design curricula, create a comfortable learning environment, and measure learning outcomes accurately and reliably. In general, the notion of educational psychology is a branch of psychology that studies the characteristics of individuals in their development. The purpose and function of educational psychology, in general, is to develop knowledge and methods for studying the teaching and learning process in everyday situations that are age-appropriate in the educational environment.

1.1. History of Educational Psychology

The education system today is very complex. There is no one-size-fits-all learning approach or style that works for everyone. That is why psychologists working in education focus on identifying and studying learning methods in order to better understand how people absorb and acquire new information. Educational psychologists apply the theory of human development to gain insight into individual learning processes and also inform instructional processes. The interaction between pupils and teachers in schools is an important part of the process, however, it is not the only influencing factor. Learning is a long process because people not only learn at school but also learn at work, in various social situations, and even in daily activities. Psychologists study this to find out how people learn in different settings to identify approaches and strategies that can make the learning process more effective (Lidström,2020).

The history of educational psychology began its development in the early 18th century which was marked by the existence of specialized psychological research that had a major impact

on various theories and practices in education. Various schools of psychology that began to develop in the early 18th century specifically studied different kinds of behavior and learning processes, and how these influenced the development of theories such as Behaviorism, Psychoanalysis, Gestalt, and practice in education. The beginnings of educational psychology emerged in Germany in the early 18th century thanks to the popularity of John Friedrich Herbart (1766-1841) who was a philosopher and psychologist whose name was immortalized as one of the schools of thought in education, namely Herbartianism. However, if philosophically the development process of educational psychology has emerged and developed since 460 BC. In 460 BC, Democritus is believed to be the first philosopher to emphasize the importance of the influence of the environment and home atmosphere on the development of a person's personality so that the environment and atmosphere of the home need to be fostered as best as possible so that the atmosphere becomes conducive to children's development. Democritus is believed to be an educational psychologist who wrote about the benefits of action by schools and the influence of the home environment on individual learning success (Wittrock & Farley, 2017).

The history of psychology itself has developed for a very long time. Before 1879, psychology was considered a part of philosophy or physiology. At first, it was the philosophers of Ancient Greece who began to think about psychiatric symptoms. At that time, there was no empirical or scientific evidence. They try to explain psychiatric symptoms through mythology. Such an approach is called a naturalistic approach. Among the Greek scholars who took a naturalistic approach was Thales (624-548 BC) who is often referred to as the Father of Philosophy, who believed that the soul and other supernatural things did not exist because something that exists must be explained by natural phenomena. He also believes that everything comes from water and because the soul cannot be from water, he does not consider the soul to exist. Another figure is Anaximander (611-546 BC) who said that everything originated from something indeterminate, while Anaximenes (6th century BC) said that everything originated from the air. No less important figures are Empedocles, Hippocrates, and Democritus. Empedocles (490-430 BC) said that there are four great elements in the universe, namely Earth / Earth, Air, Fire, and Water.

Humans consist of bones, muscles, and intestines which are the elements of soil; body fluids are an element of water; the rational and mental functions are the elements of fire; while the support of the elements or the function of life is air. Based on the view of Empedochles, Hippocrates (460-375 BC), known as the Father of Medicine, stated that in humans there are four bodily fluids that have the same characteristics with the four basic elements. The ancient Greek figures mentioned above basically assumed that the soul is one with the body. The soul and body come from the same elements and are subject to the same laws (the monoist view). Apart from the monoist view, the dualism view has also grown, namely the view that separates the soul from the body, the soul is not the same as the body, and each is subject to separate rules or laws.

Throughout the history of psychology, well-known figures who embraced the view of dualism include Socrates (469-399 BC), Plato (427-347 BC), and Aristotle (384-322 BC). Socrates is of the view that every human being buried with answers to various problems in the real world. The problem is that most humans don't realize it. Therefore, there needs to be someone else like a midwife who helps give birth to the "idea" from within the human heart. Socrates developed a question-and-answer method to explore hidden answers to various problems. With a question-and-answer method called the Socratic Method, an understanding called Maieutics will emerge (pulling out as a midwife does). This Maieutics was then overthrown by R. Rogers in 1943 into a technique in psychotherapy called Non-Directive Techniques. A technique used by a psychologist or psychotherapist to explore problems in a patient so that he is aware of his own problems without being too directed by the psychologist or psychotherapist. Socrates emphasizes the importance of understanding about himself for every human being so that according to him it is the duty of everyone to know himself first if he wants to understand things outside himself. Its famous motto is that real learning in humans is learning about humans. Meanwhile, Plato, a staunch disciple and follower of Socrates and considered a true dualist, said that the psychological world contains ideas that stand alone apart from the experience of everyday life.

Adults and intellectuals can tell which soul and body. However, in children, the soul is still mixed with the body, unable to separate Ideas from concrete objects. The soul that contains these Ideas is named Psyche. In addition, Plato also believed that each person has been assigned a status and position in society from birth whether he was a philosopher, soldier, or worker. He believes that everyone is born with their own specialties, not the same as each other. Thus, in addition to being considered a follower of Determinism or Nativism, he is also considered a beginner figure in individual differences. In the subsequent development of psychology, this understanding of individual differences has led scholars towards the discovery of psychological examination tools (psychological tests). Plato is considered a rationalist who believes that everything comes from ideas produced by reason. So Aristotle (385-322 BC), a pupil of Plato, believed that everything in the form of psychology (form) must occupy a certain form (matter). This form is essentially a statement or expression of the soul. God is the only one who is without form, only form.

Aristotle is often referred to as the Father of Empirical Psychology because according to him everything must have its starting point from reality, namely matter. The matter is the main source of knowledge. Aristotle's views and theories on Psychology can be seen in his famous book *De Anima* (On The Soul), which is actually a book on comparative zoology and biology. In that book, he said that every object in this world has the impetus to grow and become something in accordance with the purpose that is contained in the object itself. Aristotle further distinguished between hule and morphe. Hule (Noes Photeticos) is what is formed. Meanwhile, Morphe (Noes Poeticos) is the one who forms. Things in nature do not just grow and develop but become or are developed into something. Before that thing materialized, it was a possibility. Furthermore, Aristotle distinguished three kinds of forms, namely: Plant, which controls vegetative functions; Animal, which can be seen in functions such as: remembering, expecting, and perception; Rational, which allows humans to reason (reasoning) and form concepts.

Especially for humans, this urge to grow is in the form of an urge to realize oneself (self-realization) which is called entelechi. According to Aristotle, the function of the soul is

divided into two, namely the ability to know and the ability to will. This view is known as a dichotomy. Centuries after Ancient Greece, psychology is still part of philosophy. During the Renaissance, in France appeared Rene Decartes (1596-1650) who is famous for his theory of consciousness. While in England there appeared figures such as John Locke (1623-1704), George Berkeley (1685-1753), James Mill (1773-1836), and his son John Stuart Mill (1806-1873), all of whom were known as figures. the figure of the school of Asosianism.

In the subsequent development of psychology history, the role of a number of physiology scholars who also have an interest in psychiatric symptoms cannot be ignored. Characters include C. Bell (1774-1842), F. Magendie (1785-1855), J.P. Muller (1801-1858), P. Broca (1824-1880), and so on. The name of a Russian scholar, I.P. Pavlov (1849-1936), seems to need special note because from his theories about reflexes then developed the flow of Behaviorism, namely a flow in psychology which only wants to recognize real behavior as the object of study and rejects the assumptions of other scholars who study also behavior that not visible from the outside. In addition, the role of a half-blooded English-Scottish doctor named William McDaugall (1871-1938) also needs to be pointed out. He has also inspired the flow of Behaviorism in America with his theories known as Purposive Psychology. At the end of the 19th century, there was a new chapter in the history of Psychology. In 1879, Wilhem Wundt (Germany, 1832-1920) founded the first psychology laboratory in Leipzig which marked the starting point of Psychology as an independent science. As a character of Experimental Psychology, Wundt introduced the method of introspection used in his experiments. He is known as a figure who adheres to Structuralism because he put forward a theory that describes the structure of the soul.

Wundt believed that the soul is composed of elements (Elementism) and there is an important mechanism in the soul that connects the mental elements with each other so as to form a complete psychological structure called an association. Therefore, Wundt is also considered a figure of Asocianism. Edward Bradford Titchener (1867-1927) tried to spread Wundt's teachings to America. However, Americans who are known to be practical and pragmatic do not like Wundt's theory which is considered too abstract and does not apply

directly to reality. They then formed their own flow called Functionalism with characters including William James (1842-1910) and James Mc Keen Cattell (1866-1944). This school prioritizes the functions of the soul rather than studying its structure. Cattell's discovery of the psychological evaluation (now psychotest) technique is a testament to how pragmatic Americans are. Even though it has emphasized pragmatism, the flow of Functionalism is still considered too abstract for a class of American scholars. They want Psychology to only study things that are truly objective. They only want to admit real behavior (can be seen and measured) as an object of Psychology (Behaviorism). The pioneer was John Broadus Watson (1878-1958) which was later developed by Edward Chase Tolman (1886-1959) and B.F. Skinner (1904). Apart from America, in Germany, Wundt's teachings began to receive criticism and corrections. One of them is from Oswald Kulpe (1862-1915).

One of his students was not satisfied with Wundt's teachings and later founded his own school in Wurzburg. The Wurzburg school rejects Wundt's assumption that thinking is always an image. Kulpe argues, at a higher level of thinking, what is thought is no longer in the form of an image, but there are imageless thoughts. In Europe, there was also a reaction against Wundt from the Gestalt school. The Gestalt school rejects the teachings of Wundt's elementism and argues that psychiatric symptoms (especially perception, which this school has studied) should be seen as a whole (a gestalt) that is not divided into parts. Among the characters were Max Wertheimer (1880-1943), Kurt Koffka (1886-1941), Wolfgang Kohler (1887-1967). In Leipzig, in 1924 Krueger introduced the term Ganzheit (derived from the word da Ganze which means whole). Although the term Ganzheit is still considered the same as the term Gestalt and this school is often not considered a separate school. However, according to his character, Krueger, Ganzheit is not the same as Gestalt and is a development of Gestalt psychology. He argues that Gestalt psychology places too much emphasis on the problem of object perception, even though the most important thing is the overall appreciation of space and time, not just perception or the totality of objects alone.

Further development of Gestalt psychology was the emergence of Kurt Lewin's Field Theory (1890-1947). At first, Lewin was interested in Gestalt ideology, but later he criticized it for

being considered inadequate. However, thanks to Lewin, as a further development in the United States, Cognitive Psychology was born, which is a blend of Behaviorism, which already existed in the 1940s in America with the Gestalt stream brought by Lewin. Cognitive psychology emphasizes central processes (such as attitudes, ideas, and expectations) in realizing behavior. In particular, the things that occur in the realm of consciousness (cognition) are studied by this school so that they have a great influence, especially in studying the relationship between humans (Social Psychology). Among the characters are F. Heider and L. Fertinger. Finally, the birth of a school of psychoanalysis which has had a big influence on the development of psychology until now needs special attention. Although the role of some psychiatrists (psychiatrists), such as Jean Martin Charcot (1825-1893) and Pierre Janet (1859-1947) is no less important in cultivating this flow. However, it was Sigmund Freud (1856-1939) who was considered the main character who gave birth to psychoanalysis. Because psychoanalysis does not only try to explain everything that is visible from the outside but specifically tries to explain what is happening inside or under human consciousness, then psychoanalysis is also known as Inner Psychology (Depth Psychology).

A world educational psychology expert from New York who was born in 1842 and died in 1910. In 1890, William James published his first book entitled "Principles of Psychology". Then he gave a lecture entitled "talk to teacher". In his discussion, he discussed the application of educational psychology to educate children, he emphasized the importance of studying the teaching and learning process in the classroom to improve the quality of education contained in many aspects and theories of psychology in general. He recommends teaching at a higher point above the child's knowledge and understanding with the aim of broadening the child's thinking horizons.

1.2. Scope of Educational Psychology

Basically, the scope of educational psychology is studying all human behavior involved in an educational process. Humans who are involved in the education process are teachers and students. So in educational psychology that is discussed, namely student behavior related to the learning process and also the behavior of the learning process. But if you ask a deeper

scope of educational psychology, you mean asking about what educational psychology is talking about, then based on several books that discuss educational psychology you will get different answers. Some books show a broad scope, while some books show a narrower scope. If it is based on educational psychology methods, there will be many different explanations about the scope of educational psychology. If asked about the scope of educational psychology based on educational psychology books, of course, you will get different answers. Most of the psychologist's books will explain a broad scope, but some will explain the narrower and more limited scope of educational psychology (Qureshi,2020).

In a broader scope of education, it will usually discuss many things, not only the learning process but also discussing developmental psychological theories, mental health, heredity, and the environment, learning evaluation, and many others. Whereas for a narrower scope, the explanation only revolves around the teaching and learning process without explaining anything else. This difference of course will be greatly influenced by the purpose of the author who wrote the book. Some are intended to provide an introduction only, but discuss the broader scope but not in-depth. If the scope of the discussion is limited, it will only revolve around the teaching and learning process, but the discussion will be more in-depth. So that if it is based on educational psychology books, it will never show the scope of educational psychology that is really the same. The purpose of the scope of educational psychology is about what is discussed by educational psychology. There is a broad scope usually discusses besides the learning process, but also discusses the development, environment, mental health, learning evaluation, etc. Meanwhile, the narrow scope usually only discusses the teaching and learning process. But in general, educational psychology usually always conducts discussions such as:

- Heredity & Environment.
- Growth & Development.
- Potential & Characteristics of Student's Behavior.
- The outcome of the educational process, and how it affects each individual.
- Mental Hygiene & Education.
- Evaluating the Outcomes of Education.

As for some of the more complete scope of educational psychology, such as:

- Knowledge of the scope, the purpose of studying it, and the history of educational psychology.
- Physical & psychological environment.
- Factors that influence the learning process.
- The development of the pupils.
- The process of individual behavior.
- The essence & scope of learning.
- Law & learning theories.
- Educational measurement.
- Practical aspects of educational measurement.
- Transfer of learning.
- Basic statistical science.
- The mental health of each individual.
- Education in shaping individual personalities.
- School education curriculum, etc.

The object of the study of educational psychology without ignoring the problem of teacher psychology lies with the students. Because the essence of education is a special service for students. Therefore, the object of study of educational psychology, in addition to theories of educational psychology as a science, is more inclined to the psychological aspects of students, especially when they are involved in the learning process. The object of the study of educational psychology includes topics about the growth and development of students, heredity and the environment, individual differences of students, potential and behavioral characteristics of students, measurement of processes and outcomes of education and learning, mental health, motivation, and interests, and other disciplines. which is relevant. The object of the study of educational psychology is the interaction between educators and students to improve the abilities of students, with the support of certain facilities and facilities that take place in certain environments. Educational psychology seeks to realize appropriate psychological actions in the interaction between each educational factor.

Psychological knowledge about students is very important in education. Therefore, knowledge of educational psychology should be a necessity for teachers, even for everyone who realizes himself as an educator.

CHAPTER 2. CHILD GROWTH AND DEVELOPMENT



Mother and daughter photo by Flora Westbrook (United Kingdom)

Growth is a measurable physical change. Development (development) is the addition of the ability to structure and function a more complex body. The toddler period is often referred to as the golden period. In the age period of 0-5 years, there is a rapid increase in the growth and development of children under five. Naturally, every living individual will go through stages of growth and development, that is, from the embryo to the end of its life, it changes towards an increase both in size and developmentally. The term growth and development includes two events that are mutually different but interrelated and difficult to separate, namely growth and development. The definition of growth and development is as follows, Growth is a change in the size, number, size, or dimensions of an organ cell, as well as an

individual that can be measured by weight (grams, pounds, kilograms), length (cm, meters), age, bone, and metabolic balance (body calcium and nitrogen retention). Development is the increase in skills (abilities) in the structure and functions of the body which are more complex in a regular and predictable pattern, as a result of the maturation process. Here it concerns the differentiation process of body cells, body tissues, organs, and organ systems that develop in such a way that each can fulfill its function. This includes emotional, intellectual, and behavioral development as a result of interactions with their environment (Parker & Crabtree, 2020).

Physical growth and development can be in the form of changes in the size of the organ function starting from the cellular level to changes in the body's organs. The growth and cognitive development of children can be seen from their symbolic and abstract abilities, such as speaking, playing, counting, reading, and so on. Growth is a change that is quantitative, measurable, and occurs physically. Your little one's growth can be monitored by measuring height, weight, head circumference, and other measurements according to age by standardizing certain measuring instruments. Whereas development is the addition of the ability to structure and function more complex bodies, for example, your little one can walk or talk. Development can be observed from the way he plays, learns, speaks, and behaves.

Growth and development are influenced by internal and external factors. Internal factors include gender, differences in race, age, genetics, and chromosomes. Meanwhile, external factors include the condition of the social environment, economy, nutrition, and psychological stimulation. Your little one's golden period lasts at the age range of 0-5 years. This age is the initial phase of your little one's development and will affect the next phase. During this time, mothers must be more careful to get optimal results and prevent abnormalities as early as possible.

Growth is an increase in the size and number of cells and intracellular tissue, which means an increase in physical size and body structure in part or as a whole so that it can be measured in units of length and weight. Growth has special characteristics, namely change in size,

change in proportion, loss of old characteristics, and the emergence of new characteristics. Development is the increased ability (skill) in the structure and function of the body which is more complex in an orderly pattern as a result of the maturation process, here it involves the differentiation process of body cells, body tissues, organs, and organ systems that develop in such a way that each of them can fulfill its function. This includes emotional, intellectual, and behavioral development as a result of interactions with the environment.

Growth is related to quantitative change, namely an increase in size and structure. The child not only grows up physically but the size and structure of the organs in the body and brain increase. As a result, there is brain growth, the child has a greater ability to learn, remember and think. Development is related to qualitative and quantitative changes, namely psychophysical changes which are the result of the process of maturing psychological and physical functions in children on an ongoing basis, which is supported by heredity and environmental factors through the process of maturation and the learning process. Maturation means a process of refinement, maturation of the elements or organs that occur naturally. The learning process is a learning process, through experience at a certain time to reach maturity.

Children who are in their infancy and development have a great sense of curiosity about their surroundings. This is indicated by the number of questions they asked. This curiosity provides an opportunity for children to learn to know something. Children's interactions with their environment, for example with friends of the same age or teacher, will make children learn to develop their social and emotional aspects. Interaction with peers will provide experiences in socializing and communicating, such as playing together, willing to share, willing to give in, and so on. Meanwhile, children's interactions with the natural environment will provide a relaxed and relaxed feeling. This condition is what children really need in the learning and playing process.

The rapid growth and development in the first 1,000 days of life make monitoring of child development very important at this age. The first 1,000 days of life are counted from the time

of conception in the mother's womb until the child is 2 years old. In children aged 2 years, the height has reached half of the adult's height and the brain development has reached 80% of the adult brain. Growth is an increase in physical sizes, such as weight and height. Development is the increase in the ability to structure and function of the body to become more complex, such as the ability of the baby to increase from rolling over to sitting, standing, and walking. These abilities must be age-appropriate, or what is known as the child's development milestones (Nolan,2020).

In children aged <2 years, brain development is very rapid. This period is called the critical period of development and is the right time to recover if there is a developmental disorder. So, parents should monitor their child's growth and development, especially at <2 years of age. Monitoring of growth and development is an activity to detect early growth irregularities (malnutrition or poor nutritional status, short children), developmental deviations (late speaking), and mental-emotional disorders (impaired concentration and hyperactivity). Monitoring of growth and development aims to determine the growth and development of children as well as early detection of growth and development disorders so that they can be followed up immediately so that the results are better.

Growth screening is carried out by weighing the body, measuring the length/height and the circumference of the head. The data is then plotted into the appropriate growth curves for age and sex in the children's health books. While developmental screening can be done by direct observation of babies/children by health workers and also by using a questionnaire that is answered by the parents or using a Mother and Child health book. Screening/monitoring is carried out on all children aged 0-6 years (by a health worker at the Health Care Center), all babies/children who are at high risk (by a pediatrician in the hospital).

High-risk babies are babies whose development is still normal but developmental disorders can occur, for example, having a history of preterm birth, low birth weight, newborns who have infections, decreased blood sugar levels, shortness of breath syndrome, or seizures. If

the baby/child is declared normal, development screening is still needed because child growth and development is an ongoing process and may experience growth and development problems along the way. Screening/monitoring of infant growth and development is recommended to be done every month. For children aged 12-24 months, it is recommended every 3 months, and children aged 24 months to 72 months are recommended every 6 months. What should parents do to prevent growth and development disorders? Impaired growth and development in children can be prevented by the role of parents, including fostering, caring, honing:

- Caring for: physical-biomedical needs include breastfeeding, appropriate nutrition, immunization completeness, medication for sick children, proper housing, individual and environmental hygiene, recreation, and play.
- Loving: emotional needs and affection.
- Teaching: the need for mental stimulation which is the embryo for the child's learning process.

Stimulation of brain tissue is especially important during your little one's golden period. The more stimulation you give your little one, the more brain tissue will develop up to 80% by the age of 3 years. Conversely, if your little one is never given enough stimulation, his brain tissue will shrink so that brain function will decrease. This is what causes your little one's development to be hampered. Lack of stimulation in your little one can affect the development of intelligence in the brain, developmental irregularities, and even persistent developmental disorders. The following are the stages of stimulation according to your little one's age:

Age 0 - 4 months

Often hug and cuddle with great affection. Hang brightly colored objects that move and can be seen by your little one. Invite your little one to smile, talk, and listen to music.

4-6 months old

Often face your little one. Move objects left and right, in front of his eyes. Listen to various sounds. Give toys large, colorful objects.

6-12 months old

Teach your little one to sit down, play cheek-ba with you, teach you to hold and eat biscuits, teach you to hold small objects with 2 fingers, stand up and walk by holding on, talk as often as possible, practice saying ma .. ma .. pa.. pa, give a toy that is safe to hit.

Age 1 - 2 years

Teach to walk on the steps/stairs, invite to clean the table and sweep, invite to clean up toys, teach to scribble on paper, teach to mention body parts, read children's stories, invite to sing, invite to play

Age 2 - 3 years

Teach them to dress themselves, take them to see picture books, read children's stories, teach to eat on their own plates, teach to wash their hands, teach to defecate and urinate in their place

Age 3 - 5 years

Ask your little one to tell what he did, listen to him when he talks, if he stutters, teach him to talk slowly, watch your little one when he tries new things.

Your little one's development is divided into several areas, namely: gross motor skills (walking, running), fine motor skills (drawing), sensory (seeing, hearing, etc.), language (saying words and then sentences), and social (playing together, playing alternately). . Growth and development are different in appearance, but there is still a fairly wide time limit where it can still be categorized as normal. To support your little one's growth, good nutritional adequacy is needed. Apart from helping growth, with good nutrition and eating habits, diseases such as type 2 diabetes, high blood pressure, and obesity can be prevented. Lack of nutrition will cause the impaired intellectual development of your little one.

Teething will also be seen during the Little One's golden period. Teething varies depending

on heredity, but certain diseases such as rickets, hypothyroidism, hypopituitary, or Down syndrome can slow tooth growth. In general, your little one will have 6 teeth by 12 months of age and a total of 20 baby teeth by 2.5 years of age. Your little one's first teeth can appear for the first time at the age of four months. However, most cases of teeth begin to grow around the age of 6 - 7 months. The first baby teeth appear in the front incisors at the top and bottom. The last baby teeth grow when your little one is 2-3 years old. At this age, usually, the number of teeth is complete, which is 20 pieces.

The dentition is characterized by swelling of the lower gums. Most likely your little one will feel sick because of this swelling and even have a fever. Your little one will be fussier, often cry and bite something. In this period, your little one will also salivate more than before. For that, wear a breastplate made of a towel, so that you can always dry your little one's chin and cheeks, which are affected by saliva, this prevents irritation of your little one's skin. If your little one's teeth haven't grown in time, you don't need to worry. There are several things you can do to stimulate tooth growth, including:

- Giving toys that are useful for stimulating tooth growth is often called teether. Choose a teether that is made from a safe material. In general, everything is made of rubber.
- The calcium content in milk is also very helpful for the growth of your little one's teeth, therefore, even though your little one has been more than 6 months old, try to give enough breast milk.
- Give breast milk auxiliary foods that contain calcium such as sea fish and some types of vegetables

These baby teeth will then be replaced by permanent teeth at the age of 5-13 years. Don't worry if your little one's teeth fall out due to impact while playing because the teeth will be replaced by permanent teeth. For example, the first molars at the age of 5-7, followed by other teeth such as incisors at the age of 6-8 years.

If the growth and development are less according to standard measuring instruments. Your little one who is 1 year old should be able to walk 1 or 2 steps without assistance, speak a few words, and clap their hands. Your little one can run, flip papers, speak about 10 words, draw

straight lines at 2-2.5 years of age. At the age of 3 years, your little one can already wear their own clothes except attaching buttons, counting to 10. At 4 years old, your little one can stand and jump on 1 leg, wear well, throw the ball with one hand. At the age of 5, your little one can catch the ball, recognize 4 colors, and by the age of 6, your little one can walk in a straight line and write. There are many other measures in developmental milestones.

When your little one is unable to do what friends his age should be able to do according to the milestones, your little one may experience developmental delays. If development delays occur in several areas, your little one can be said to be experiencing global development delays. In many cases, your little one's developmental disorders need help in order to reach their maximum potential.

The role of family, school personnel, and health workers is very much needed in evaluating the growth and development of your little one. If your little one seems more advanced or slower than his peers, you should immediately consult a doctor. The little one must be taken to an integrated health service center or to a facility health care unit each month to be measured and monitored for progress. So that abnormalities and delays that may occur can be detected as early as possible. Children are individuals who are in a range of developmental changes starting from infancy to adolescence. Childhood is a period of growth and development starting from infants (0-1 years), toddler (1-2.5 years), preschool (2.5-5), school-age (5-11 years) to adolescence. (11-18 years). Children from 1 to 5 or 6 years of age reinforce a sense of gender identity and begin to differentiate socially defined sex-appropriate behaviors and observe adult behavior, begin to mimic the actions of same-sex parents, and maintain or modify behaviors based on feedback from parents.

The stages of growth and development of children can be determined by the period of time of the child's life, generally consisting of the prenatal and postnatal periods. The prenatal period consists of two phases, namely the embryonic phase and the fetal phase. In the embryonic period, growth can be started from conception until the first 8 weeks where there can be a rapid change from the ovum to an organism and the formation of humans. In the

fetal phase, it occurs from the age of 9 weeks until birth, while in the 12th to 40th week there is an increase in organ function, namely an increase in length and body weight, especially growth and addition of subcutaneous tissue and muscle tissue. Postnatal period
Consists of neonatal, infancy, preschool, school, and adolescence.

Postnatal growth and development after birth begin with the neonatal period (0-28 days). At this time there is a new life in the extrauterine, namely the adaptation process of all the organ systems of the body. Infancy is divided into two stages of development. In the first stage (between the ages of 1-12 months), growth and development during this period can take place continuously, especially in the increase of the nervous system. The second stage (age 1-2 years): the growth rate at this time begins to decline and there is an acceleration in motor development.

The preschool age can be stable and there is still an increase in growth and development, especially in physical activity and cognitive abilities. According to Erikson's theory, preschool children are in the initiative vs guilty phase. At this time, curiosity (curiosity) and the existence of a child's imagination develop, so that children ask a lot of questions about everything around them that they do not know. When parents turn off the initiative, it makes children feel guilty. Meanwhile, according to Sigmund Freud's theory, children are in a phallic phase, where children begin to recognize the differences in the sexes of women and men. Children will also identify the figures or behavior of their parents so that they tend to imitate the behavior of the adults around them. Preschoolers are children aged 3-5 years when most of the body's systems are mature and stable and can adapt to moderate stress and change. Preschool children are early childhood, which is at the age of three to six years. Preschool children are individuals who have various kinds of potential. These potentials are stimulated and developed so that the child's personality develops optimally. At this age children experience many changes both physically and mentally, with the following characteristics, development of self-concept, the emergence of egocentricity, curiosity, imagination, learning to weigh feelings, the emergence of internal control (body), learning from their environment, developing ways of thinking, developing language skills, and the

emergence of behavior.

At the age of preschool children experience a process of changes in eating patterns where in general children have difficulty eating. The process of elimination in children has shown that the process of independence and cognitive development have begun to show progress, the child is already preparing to enter school. The development of this school period is faster in physical and cognitive abilities compared to the preschool age. At the stage of adolescent development, there are differences between women and men. In general, women 2 years earlier enter the stage of adolescence/puberty than boys and this development is shown in the development of puberty.

2.1. Child Ability Development

Childhood is a period with many processes of growth and development. Every child will experience various developments which show that his brain and abilities are developing. One development that is very important for parents to monitor is the development of the little one's cognitive abilities. The skills of a child are accompanied by a set of life vitality be it physical, spiritual, and existential. Physical means a physical set that experiences growth, it must be nurtured and given the material to be able to survive, be healthy, so physical education begins with this concept. Spirituality is a physical set of development, so it must be nurtured and given guidance in the direction of life in order to be able to have the meaning of life. Existence means a set of values that have changed in existence, it must be developed and directed so that children have one social value in their environment (Nemeth & Glozman, 2020).

The psychological concept of child development, of course, is not only based on the existence of the parents' environment, the only role is the role of the child's personal formation. In this case, according to cognitive psychologists, the utilization of the capacity of the cognitive domain of humans has started to work since humans began to utilize their motor and sensory capacitances, however, the method and intensity of the cognitive shutter capacity utilization is still not clear. Children's cognitive development varies from one another. However, there

are certain things that can be a general description that characterizes the cognitive development of children at each age. Cognitive development refers to the stages of a child's ability to obtain meaning and knowledge from the experiences and information he gets. Cognitive development includes the process of remembering, problem-solving, and also decision making. Cognitive abilities are a construction process that involves the brain. This includes the ability to think, remember, solve problems, and make decisions. Of course, this is an ability that is very important to pay attention to, because it will greatly affect your little one's life. Sometimes parents pay more attention to the physical development than the cognitive development of children. In fact, cognitive development is no less important than physical development. Therefore, it is important for parents to recognize what the stages of their child's cognitive development are.

There is a theory of cognitive development developed by a Swiss psychologist, Jean Piaget, which is known as Piaget's Theory. First published in 1952, Piaget argued that cognitive ability is a genetic process based on the biological mechanism of nervous system development. As you get older, the arrangement of nerve cells becomes more complex so that their abilities also increase. When a person grows, he will adapt biologically to the environment. This led to some qualitative changes in his cognitive structure. Piaget concluded that the thinking abilities and mental powers of children of different ages will be qualitatively different. Jean Piaget's theory of cognitive development or Piaget's theory shows that intelligence changes as a child grows. The cognitive development of a child is not only about gaining knowledge, the child must also develop or build mentally. Please note, Jean Piaget is a psychologist from Switzerland who studies children in the early 20th century. His theory of intellectual or cognitive development, published in 1936, is still used today in several branches of education and psychology (Zwingmann et al,2012).

The stage of children's cognitive development is also one of the focuses of parents' attention on their children. Cognitive development focuses on the child's ability to understand something which includes the process of remembering, problem-solving, and decision making. Piaget's theory focuses on children, from birth to adolescence, and describes various

stages of development, including language, morals, memory, and thinking. Based on the theory made by the famous psychologist, Jean Piaget, children's cognitive development is divided into four stages, namely :

Sensorimotor Stage (0-24 Months)

First, there is the sensorimotor stage experienced by newborns (0 months) to the age of 24 months or 2 years. In the early stages of life, your little one is still very limited in terms of abilities. However, every child is born with innate reflexes and stimuli to find out his world. The sensorimotor stage is the first of four stages in Piaget's theory of cognitive development. This theory extends from birth to about 2 years and is a period of rapid cognitive growth. During this period, babies develop an understanding of the world through the coordination of sensory experiences (seeing, hearing) with motor actions (reaching, touching).

A major development during the sensorimotor stage is the understanding that objects and events occur in the world naturally from their own actions. For example, if the mother puts a toy under the blanket, the child knows that the usual play (he sees) is now invisible (is missing), and the child is actively looking for it. At the beginning of this stage, the child behaves as if the toy just disappeared. At this stage of cognitive development, your little one's abilities are very limited, but he can learn about his surroundings with reflexes and stimuli, for example, he likes to pay attention to an object for a long time, dance to stimuli through sounds, and lights. Development is based on actions that are carried out in stages. He is also not able to consider what the wants, interests, and needs of others make him considered egocentric. Some of the abilities your little one has at this age include:

- Likes to pay attention to things for a long time.
- Noting an object as constant and wanting to change its location.
- Seeing himself as a being different from the objects around him.
- Seek stimulation through sound and light.
- Interpret something by manipulating it.

The first three months of a child's life are a very amazing stage. The main development

milestones of children at this age center on the exploration of the five senses and their surroundings. During this period, most babies begin to show the following developments:

- See objects more clearly at a distance of 30 cm.
- Start focusing on moving objects.
- Recognizes sweet, salty, bitter, and sour tastes.
- Detects differences in speaking pitch and volume.
- See all colors in the human visual spectrum.

Starting from 3–6 months of age, a child's perception begins to develop. During this period, most babies begin to show the following developments:

- Recognizing the faces of family members.
- Responds to other people's facial expressions.
- Recognizing and responding to surrounding voices.
- Start mimicking other people's facial expressions.

Entering the developmental stages at the age of 6–9 months, usually, babies begin to show the following developments:

- Understand the difference between living and inanimate objects.
- Recognizes different pictures with different numbers of objects.
- Begins to be curious about 'impossible things', like how an object can hang in the air.

Along with physical maturity, cognitive development is more mature. This is due to his increasingly mature physical development which supports him to explore the world around him in greater depth. During this period, most babies are able to:

- Mimic gestures and actions, such as clapping hands.
- Respond to things with gestures and sounds.
- Loves to look at picture books.
- Start trying to place one object onto another object, for example putting a toy in a basket.

The physical, social, and cognitive development of a child develops rapidly at the age of 1–2

years. During this period, children spend a lot of time observing the actions of adults. Therefore, it is very important for parents and caregivers to set examples of good behavior. During this period, the child begins to develop:

- Understand and respond to words.
- Remember the characteristics of an object and identify its similarities with other similar objects.
- Understand when to use “I” or “you”.
- Mimic adult actions and speech.
- Learn about the environment by exploring it.

Pre-Operational Stage (2 - 7 Years)

The preoperational stage is the second stage in Piaget's theory. This stage starts around 2 years and lasts up to about 7 years. During this period, the child thinks at a symbolic level but has not yet used cognitive operations. The child's thinking during this stage is prior to cognitive surgery. This means that children cannot use logic or change, combine, or separate ideas or thoughts.

Child development consists of building experiences about the world through adaptation and working towards the (concrete) stage when he is able to use logical thinking. During this final stage, the child can mentally represent events and objects (semiotic functions or signs) and engage in symbolic play. The main characteristic of the development of your little one's cognitive abilities at this stage is the development of intuitive concepts and the use of symbols.

Entering the second stage, children will begin to develop memory and imagination. At this stage of cognitive development, your little one also begins to understand something symbolically, for example by collecting objects based on criteria. For example, collect all red toys. Then entering the age of 4-7 years, children have also begun to be able to express their thoughts. This pre-operational stage is divided into two, namely:

Pre-operational (2 - 4 years): Your little one has been able to develop the concept using simple

language which often experiences errors in understanding an object. The characteristics include:

- Able to group objects singly and prominently.
- Able to collect objects based on criteria.
- Able to arrange several objects in a row.
- The self counter is very prominent.

Intuitive (4 - 7 years): the knowledge your little one has is based on a somewhat abstract impression. He can conclude but has not been able to put it into words. For this reason, the little one in this age category is able to express his heart's content, especially for children who have a lot of experience. The characteristics of your little one at this stage include:

- Already starting to recognize the logical relationship to things that are more complicated.
- Even though you don't realize it, your little one can categorize objects.
- Can realize the ideas that are in his mind.

In the age period of 2–3 years, children are more independent because they can better explore their surroundings. This is the right age for the child to be introduced to places where he can explore and provide knowledge, such as museums and zoos because most of the child's learning during this stage is the result of his own experiences. The following is a cognitive development shown by children aged 2 years to 3 years:

- List objects by category, such as animals, flowers, and objects around them.
- Mimicking more complex adult actions, such as playing house, pretending to wash, or cooking.
- Responding to simple orders from parents.
- Matching objects to their uses, such as a spoon for eating and a glass for drinking.

In the 3–4 year period, children are increasingly able to analyze the world around them in more complex ways. Children also become more active in the learning process. In addition, they will also start asking various questions related to the things around them. Cognitive development shown by children aged 3–4 years includes:

- Start actively looking for answers to his questions.
- Learn by observing and listening to instructions.
- Can arrange objects based on their size and shape.
- Understand how to group and match objects according to their color.
- Often ask questions with the question word "why" to get information.

When approaching school age (4 and more years), a child's ability to use sentences, imitate adult actions, count, and other basic activities have matured. The following is the cognitive development shown by children aged 4 and more years:

- Identify more complex colors, such as Donker blues and pinks.
- Draw a person's shape.
- Draw objects they often call and describe.
- Count from 1 to 5.
- Know and tell where he lives.

Concrete Operational Stage (7-11 Years)

The third stage of the development of children's cognitive abilities is concrete operations owned by children in the 7-11 year age category. The concrete operational stage is the third stage in Piaget's theory. The period lasts around the age of 7 to 11 years and is characterized by the development of organized and rational thinking. Piaget considered the concrete stage as the main turning point in the cognitive development of the child because it marked the beginning of logical thinking. At this stage, your little one is mature enough to use logical thinking or thinking but can only apply logic to physical objects. Children begin to show conservation abilities (number, area, volume, orientation). Although children can solve problems in a logical way, they are not yet able to think abstractly or hypothetically. At this stage, the child has understood the concept of cause and effect rationally and systematically. His egocentric attitude gradually waned, and he began to understand if not everyone could speak his thoughts and feelings. The following are the characteristics of development at this stage:

- Already able to group certain objects or situations and sort things.

- His ability to remember and think logically has also improved.
- Understand the concept of causation in a rational and systematic manner.
- Starting to learn to read and math.
- His egocentric attitude gradually diminished.

Formal Operational Stage (Starting 11 Years)

In this last phase, the child's cognitive experience is rich with experiences, both concrete and abstract. Thinking rationally becomes more obvious by having the courage to sort out which one is logical which is imaginative and abstract. The development of this phase is not only guided and developed but must be more a lot of attention is paid to controlling the child's actions because this phase gets more attention about controlling the actions of the child. Because this phase coincides with the phase of puberty on the emotional aspects of children, they acquire the ability to think abstractly by manipulating ideas in their heads, without relying on concrete manipulations. At this stage, the child has entered the pre-adolescent age. Children already have the ability to use their logic to solve problems, draw conclusions from the information they get, and plan for their future. Entering pre-adolescence, children at the formal operational stage have the following characteristics:

- Already mastering reasoning and thinking abstractly.
- Be able to draw conclusions from the information he gets.
- Understand abstract concepts, such as value and love.
- Can see the reality that sometimes can be gray, not just black and white. This ability is very important because it will help him get through the transition from adolescence to adulthood.

In Piaget's psychology vocabulary, many children's cognitive skills are detected as an original ability of the child himself. Some of these capabilities are as follows:

- Sensory-motor schema (motor sensory scheme) is or a series of open behaviors arranged systematically to respond to the environment such as people, goods, circumstances, or events.
- Cognitive-schema (cognitive schema) is closed behavior in the form of a series of

cognitive steps (perceptions) that function to understand what is implied or conclude the environment being responded to.

- Object-permanence (stipulation of objects), namely the assumption that every object will still exist even though it has been abandoned or not seen again.
- Assimilation, namely the balance between the scheme used and the environment that was responded to as a result of the provision of accommodation.
- Accommodation, namely the balance between the schemes used and the environment that was responded to as a result of the accommodation provisions
- Equilibrium, namely the balance between the scheme used and the environment that is responded to as a result of the speed of accommodation.

The first five years of a child are the most important stage in the formation of his intellectual abilities. Most of the cognitive development of children is influenced by close family relationships, especially their parents. So, parents are in an important position in helping the formation of patterns of learning, thinking, and developing children. At home, parents can help their children understand the world around them. For example, when a baby shows interest in an object, you can help your child to touch and observe that object.

As they get older, parents must also continue to stimulate their children to always be active in exploring the environment around them. Give your child the opportunity to organize and organize items, such as books and toys. Practicing the ability to move and maintain a child's balance can also lead to better cognitive development. In addition, be patient when children have a series of questions about everything around them. Parents can also ask questions to children to hone their ability to solve problems. No less important, you must always ensure that your child's nutritional needs are fulfilled, starting from the need for protein, healthy fats, carbohydrates, and vitamins and minerals, such as vitamin D, calcium, and iron.

Paying attention to and honing children's cognitive development is important for every parent to do. But keep in mind, the stage of development for each child is different. So, you don't need to compare their development with other children. Just observe your child's development from day to day and make sure that the stage of development is appropriate for

his age. However, sometimes assessing a child's abilities is not as easy as the theory. If you feel your child's cognitive development is delayed or not appropriate, don't hesitate to ask for help and advice from a doctor.

Making smart children skilled and courteous is indeed a big task for both educators, parents, teachers, and the community. The ideal ideals of children's abilities seen from the point of view of this development are certainly in line with the goals of national education, so there are at least two statements that must be answered, what and how to do it. First, is by introducing the meaning of intelligence, skill, and morality for the environment of children, which according to the curriculum must always be entrusted to each level, each type, and even each educational institution. The second, is to provide experience, namely;

- sharpening the brain in order to think critically and objectively
- physical training in order to be skilled and dexterous in acting
- appreciation of the heart in order to realize the meaning and existence of himself in the middle of life.

The modern psychological approach certainly does not favor one of the two paths above, where striving for a conception with the empowerment of children's potential is not only made aware of the aspects of abilities that are inherent in children. But also strong management capabilities to guide and nurture this potential. In fact, cognitive psychology is more directed at the existence of integration which is able to provide a bridge between cognitive development and the efforts made through the creation of an integrated and integrated environment. This means that the creation of an environment that can nourish children's cognitive development must start from the environment, parents than teachers. Parents provide more opportunities for children's creativity, and teachers provide guidance on the progress of the child's mind as well as parents and teachers provide children's cognitive control.

2.2. Understanding of the Heredity Factor

Humans are creatures that are created most perfectly compared to other creatures. Even though when a new person is born they still look weak and helpless, over time people

continue to learn and do not stop developing. This is different from other creatures, such as animals, which are seen to be able to walk and do activities immediately after birth. Development is related to changes that are quantitative in nature which refers to the number, size, and area of a concrete nature which usually involves the size and biological structure. Growth is a physiological change as a result of the maturation process of physical functions that takes place normally over a certain period of time. The result of growth is in the form of an increase in the quantitative size of the child's physical condition such as height and weight, strength, or proportion so that in summary, growth is a process of change and physical maturity involving changes in size or comparison.

In humans, development does not stop throughout life. For one thing, humans are equipped with a mind that keeps them from learning as long as they live. The ability to learn and develop is also influenced by many factors, one of which is heredity. Heredity factors in this case are traits or traits acquired in a child on the basis of heredity or inheritance from generation to generation through germ cells. These innate characteristics exist from birth and are still seeds, which are still hidden strengths/potentials in a person. The new potential will be actual and grow and develop after receiving stimuli and external influences / external factors. In its position in the educational process, heredity can be interpreted as the inheritance or biological transfer of individual characteristics from their parents. This inheritance occurs through a genetic process (Chapin,2018).

Making a quality child, of course, is not an easy thing. There are many things to do, but also a lot to understand and understand. One of them is regarding the factors that affect child development. These factors need to be considered so that we do not take the wrong steps in educating children and do not force the will on the child so that the child can grow and develop optimally. There are two main factors that affect the development of children, namely congenital factors and environmental factors.

Congenital or hereditary factors (heredity) are the first factors that affect child development. This factor can be interpreted as all the characteristics or individual characteristics that are

passed on to the child or all the physical or psychological potential that a person has since conception as an inheritance from the parents. Congenital factors are also known as endogenous factors. Endogenous factors are factors that are carried by individuals from the womb to birth. Because the individual occurs from the meeting of the ovum from the mother and the sperm from the father, it is not surprising that the endogenous factors carried by the individual have characteristics like their parents. Like the Indonesian proverb which states "The water in the shower eventually falls into the dump too" this means that the condition or characteristics of the child do not leave the characteristics of the parents.

There are several things to this endogenous factor. The fact shows that every individual who is born into the world will carry certain traits, especially traits related to the physical factor. For example body shape/structure, hair color, skin color, eye color, face shape, and so on. These traits are traits they get due to heredity, as is known by Mendel's law. The innate factors related to the physical state are generally irreversible. No matter how much people desire to have pure white skin color, it will not be fulfilled if their heredity is black or brown, as well as others. In addition, individuals also have psychological traits that are closely related to their physical condition and temperament. Temperament is an inherited trait that is closely related to the physical structure of a person, which is related to physiological functions such as blood, glands, other fluids that are present in humans.

Hypocrates and Galenus linked the physical characteristics (physical structure) with the psychological characteristics of the individual. According to both, there are several types of human temperament, namely: sanguinic, phlegmatic, cholericus, melancholicus. The temperament is different from the character or character, in which sometimes the two meanings are equated with one another. Character or character, which is the whole of a person's character that appears in his daily actions, as a result of nature and the environment. Temperament is generally constant, while character or character is more inconstant, and can change according to environmental influences (Plante,2020).

Besides individuals have innate factors related to physical characteristics and temperament,

individuals still have innate traits in the form of talents (aptitude or talent). Talent is not the only factor that individuals are born with, but is only one factor. Talent is a potential that contains possibilities to develop in one direction. Talent is not something that has been made, which has been formed at the time the individual is born but is only a potentiality. In order for this potential to become actualized, it takes an opportunity to actualize these talents. Therefore there may be talents that cannot develop or cannot actualize because opportunities do not or do not allow them. To actualize talents requires a good or supportive environment. Herein lies the role of the environment in individual development. Because it is a good step is to give children the opportunity to develop their talents as well as possible. To be able to find out a person's aptitude, an aptitude test is generally used.

In certain cases, the inherited factor here includes susceptibility to disease. For example, parents who have diabetes will also decline in their children, as well as shortness of breath, epilepsy, and others. This innate aspect of the individual has the potential to develop. However, the extent to which development and the quality of development occurs depends on the innate qualities themselves and the environment that influences them. Still related to heredity, research on twins shows that identical twins have a relatively similar height compared to twins who come from 2 eggs (fraternal twins). Both parents make an equal contribution to the development of the height of their children. In general, it can be concluded that from two parents who have a height, their child will have a tall body as well. Conversely, children who are short are likely to have parents who are not tall either.

According to the theory of Nativism pioneered by philosopher Schopenhauer, humans are born with certain potentials that cannot be influenced by the environment. Based on the theory, the level of intelligence has been determined since the child was born. Psychologists Loehlin, Lindzey, and Spuhler argue that the intelligence level of 75% - 80% is hereditary. The second factor is environmental factors. The environment can be interpreted as various events, situations, and conditions outside the individual that directly or indirectly affect child development or individual development. This environment consists of the physical environment and the social environment.

The physical environment is everything that is physical in nature around the individual, such as the state of the house, yard, rice field, land, water, seasons, and so on. The physical environment is often referred to as the natural environment. Different natural environments will have different effects on individuals. For example, mountainous areas will have a different effect when compared to coastal areas. An area that has winter will have a different effect from an area full of summer. Meanwhile, the social environment includes all human beings with their various interactions which create a distinctive social environment. The social environment is a community environment, wherein this community there are interactions of individuals with other individuals. The state of society will also have a certain influence on individual development.

Environmental factors are also called exogenous factors, namely factors that come from outside the individual, which are experiences, the environment, education and so on which are often expressed in the sense of milieu. The influence of education and the influence of the environment around it is actually different. In general, environmental influences are passive, in the sense that the environment does not impose coercion on individuals. The environment provides possibilities or opportunities to the individual. How individuals take advantage of the opportunities provided by the environment depends on the individual concerned. Not so with education. Education is carried out with full awareness and systematic to develop the potentials or talents that exist in individuals in accordance with the ideals or goals of education. Thus education is active, full of responsibility, and wants to direct individual development to a specific goal.

Although environmental influences are not coercive, it cannot be denied that the role of the environment is quite large in individual development. The environment for children's growth and development can be in the form of a family environment, school environment, and peer group environment.

The family environment has a very important role in the effort to develop the child's

personality. It provides loving parental care and education about the values of life, both religious and socio-cultural, which are beneficial factors for preparing children to become healthy individuals and members of society. This means that the attitudes and treatment of parents towards children have a very large influence on the child's personality and psychological development.

Development is related to changes that are quantitative in nature which refers to the number, size, and area of a concrete nature which usually involves the size and biological structure. Growth is a physiological change as a result of the maturation process of physical functions that takes place normally over a certain period of time. The result of growth is in the form of an increase in the quantitative size of the child's physical condition such as height and weight, strength, or proportion so that in summary, growth is a process of change and physical maturity involving changes in size or comparison.

What parents pass down to their children is the nature of the structure, not the three pieces of knowledge that are obtained as a result of learning or experience. Heredity in a child is in the form of the inheritance of "specific genes" originating from both parents. These "genes" are accumulated in chromosomes or colored bodies. Chromosome chromosomes, either from the father's side or from the mother's side interact to form pairs of pairs. Two members of each pair have the same form and function.

Meanwhile, each individual begins to live with a cell in the ovary that has been fertilized by one sperm. This cell shares in two, each share again in two, again in two, and so on to form organs. The principle of heredity. The principle of stability: heredity, processes by means of germ cells, and not through somatic cells or body cells. This means that the traits that are learned or acquired by parents will not be determined by the child. The principle of conformity: types produce types or each group decreases its class. Alone. Children belong to the same class of parents. Principle of variation: germ cells contain a large number of determinants, at the time of pollination the ova communicate with each other in different ways to produce different offspring. So this principle of variation applies within limits

determined by general racial patterns. Principle of filial regression: in every human trait or trait, the child shows a tendency towards the average state. This means that children of highly intelligent parents tend to be less intelligent children than their parents, and vice versa.

The Role of Heredity in Growth & Development Body shape & physical characteristics (hair, skin color, eye color, etc.) Characteristics (patient, angry, cheerful, quiet, etc.) Intelligence (remembering, understanding, language, etc.) Diseases (Diabetes Mellitus), Ashma, Albino, Color Blindness, Down Syndrome, Hemophilia, Huntington's Disease) Physiologically, the environment includes all physical material conditions in the body such as nutrition, hormones, cells, tissues, organs, organ systems, growth & development, and physical health. Psychologically, the environment includes all stimulation that individuals receive from within the womb, from birth to death. For example, stimulation is in the form of genes traits, the interaction of genes, tastes, desires, feelings, goals, interests, needs, wills, emotions, and intellectual capacities. Socio-cultural, the environment includes all stimulation, interactions, and external conditions in the relationship. with the treatment or work of others. Family life patterns, group interactions, community life patterns, training, learning, education, teaching, guidance, and counseling are included in this environment.

Every individual is born into the world with certain heredity. Heredity in individuals is congenital "specific genes." The inheritance of heredity comes from both parents (Genes) and cannot be manipulated. Congenital has an important role in the growth and development of children. He was born with various religions inherited from both mother-father or grandparents. Heredity is the first factor that affects child development. In this case, heredity is defined as a totality of individual characteristics that parents pass on to their children or all the potential, both physical and psychological, that an individual has since the conception period as parental inheritance through genes. The inheritance of the traits of the parents adheres to the principles of reproduction, conformity, variation, and regression. Inheritance - inherited from father, mother, grandfather, grandmother that cannot be manipulated.

The heredity factor in developmental psychology plays an important role in the development of a child to adulthood. Although this heredity factor does not alone play a role in developmental psychology, where human development is also influenced by environmental factors, heredity can be a quite difficult topic to study because human development itself is a very complex science. Heredity and environmental factors together will interact or influence children's development. Heredity factors exist because of the existence of genes as units of information that are passed down from parents to children to produce themselves and produce proteins that continue to develop. This gene also has a function to bring out the characteristics of a human being. These characteristics include physical characteristics such as weight, height, as well as non-physical characteristics such as talents, intellectual abilities, emotions, and so on. Therefore, genes will also inherit human traits, including the ability to develop children psychologically. The following will discuss 13 factors of heredity in developmental psychology:

1. Body shape

The shape of the child's body is one thing that is often inherited from his genetics. There are children who have a thin body even though they like to eat, while there are other children who find it difficult to eat but their bodies are still fat. This is one proof that a person's body shape is something that has been carried in his genetics. In fact, it is undeniable that the shape of a person's body can have a certain influence on a child's development, especially if there is interaction with the surrounding environment. An example of inheriting body shape is for example a child who has curly hair, so no matter how he tries not to curl, his curls will return. In addition, if there is a child who has a fat body like his mother, it will be difficult for him to be thin, but just eating a little that child can gain weight.

2. Skin color

Similar to body shape, a person's skin color is the result of the hereditary influence it carries. Usually, a child born to light-skinned parents will also have a light skin tone. On the other hand, if the parents have dark skin color, they will also have a dark skin color. This skin color will inevitably also play a role in the developmental psychology of the child in the future.

3. Nature

Traits are things that are also passed down from generation to generation from grandparents, mothers, and fathers. Perhaps this is somewhat confusing with habit and a bit like environmental factors in developmental psychology. When compared to habits, traits are permanent and very difficult to change. This is different from habits that are still possible to change as long as the perpetrator has a strong desire to change them. The existence of this trait will of course greatly affect the development process of a child because it is related to the way the child interacts with his environment. For example, if a child has a closed nature and lacks confidence, then he will tend to find it difficult to develop and withdraw from the environment. This needs to be addressed appropriately by parents, teachers, and other people around them.

Traits are things that are inherited from parents or grandparents. For example, is extravagant, stingy, patient, thrifty. Character is very different from habit, nature is very difficult to change, whereas habits can be changed if there is a real intention. For educators, knowing the nature or character in depth will be very helpful in teaching and learning activities. For example, a child who is insecure needs to raise his enthusiasm and self-confidence so that his soul is not depressed.

4. Intelligence

You may not have questioned anymore about how a child's intelligence can affect the child's development. Usually, children who have high intelligence will find it easier to learn so that it will be easier to develop their potential. The intelligence of a child will affect information processing and other learning processes. In fact, the intelligence of a child is also greatly influenced by the genes in him, even though his environment is also very important in being able to direct the child towards positive self-development.

The term intelligence comes from the Latin word *Intelligence* which means connecting or unifying one another (Walgoti, 1997). So it can also be interpreted that intelligence is a

general ability to make adjustments to situations and problems. The intelligence of a person can be known precisely by intelligence tests. The measure of intelligence expressed in IQ (Intelligence Quotient)

5. Talent

Talent is a hereditary factor in subsequent developmental psychology. Having talent in a person will help a person build his self-confidence so that it can encourage him to interact better in his environment. This will certainly affect the person's development. In lucky children, the presence of talent in him has been discovered since he was a child. This will usually encourage parents to motivate children to do these talents and children will be happy to do it. This will certainly help children develop themselves and their potential. However, unfortunately, many other children cannot find their own talents and thus cannot develop them. Talent is a special ability that stands out among the various types of abilities a person has. This special ability is usually a skill, for example in the fields of music, fine arts, dance, etc. If a child has talent from his parents or grandparents, but the child cannot or does not have the opportunity to develop it, this talent will not develop or it is often called hidden talent. In general, children have what talents their parents will know from when they are young because these children will be happy to do this. Now, in education, if a child gets a score of 9-10 in a subject, it means that it can be concluded that the child has talent in that field of knowledge.

6. Disease

There are several diseases that are congenital. The diseases also vary, ranging from blindness, birth or physical defects, immunity diseases, and so on. These diseases can interfere with or slow down a child's development. So, if a disease is found in a child, parents should make extra efforts in educating and motivating the child to be able to encourage his / her development as optimally as possible. There are diseases that are inherited from birth that can slow down the development of a child. These diseases include blindness, nerves, hemophilia. These diseases are hereditary diseases.

7. The mentality

Child mentality can also be a hereditary factor passed down from parents to children. A child who is mentally good will be able to interact better with his environment. Good interaction between himself and the environment can certainly encourage children's psychological development more optimally. This is certainly different from children who have a low mentality who makes children tend to give up easily so that they will have difficulty learning new things that are usually challenging.

8. Emotions

Emotions can also be referred to as feelings or reactions given by children to the stimulation they receive from the environment. These emotions can also be passed down from parents. For example, parents who tend to be patient and calm will usually have children who are patient and calm. Although it could be that this emotion is something that children learn from the family environment, it could be that heredity or heredity factors also play a role in the emotions possessed by a child.

9. Gender

According to research, the sex of a child is the result of the combination of the chromosomes of both parents at conception. The gender of a person is indeed inherited that cannot be determined or engineered by humans. In fact, a person's gender will certainly affect one's future self-development.

10. Race

No human being can choose from which race he was born. A race that is owned by a human being will give him an influence on habits, traits, and many other things that play an important role in his development.

11. Character

A person's character, whether he is stubborn, gentle, or determined, is one of the traits he gets from his parents. This character can influence a person in his self-development and

learning process.

12. Facial expressions

Facial expressions, unexpectedly, can also be things that are passed down genetically from parents. There is someone who has difficulty expressing and seems to have a "flat" face so that he cannot show his emotions or feelings. This will later affect the way he interacts with his environment so that which will also affect the learning process.

13. Physical development

There are children who look big quickly in terms of their physical development, while there are other children who look small and tend to have slow growth in their bodies. This physical development process is influenced by the heredity of a child which is also supported by nutritional factors or the provision of nutrition for the body. This physical development also plays an important role in developmental psychology, including the development of the child's overall personality.

The principle, in this case, is a rule that is indeed a law or part of a theory that becomes a guide for scientists or users to make heredity the basis of education. The principle of reproduction; meaning to produce or remake. In this case, the process of inheriting the traits or traits of heredity through the germ cells, then the characteristics are in real form, then the child has to start over from the beginning of growth and development as well as experiences that have been experienced by his predecessor generations.

The principle of conformity; that is, every kind of creature descends its own kind, in this case, it will not give birth to or inherit other traits or traits of other creatures which are not its own characteristics. This principle includes a school that denies that humans are descended from other types of creatures. The principle of variation; meaning that each individual in addition to inheriting the same general characteristics or characteristics, also inherits different characteristics or characteristics. Children who come from the same parents, even twins, have different characteristics or characteristics. It is not true that two human beings have exactly

the same characteristics and characteristics on this earth. The principle of filial regression; is a trait or trait passed down from generation to generation that tends towards the average direction. This principle implies that children of highly intelligent parents show a tendency to be less intelligent than their parents. On the other hand, children of weak parents tend to be smarter.

Heredity in a child is in the form of inherited "specific genes" from both parents. These "genes" are accumulated in chromosomes or "colored bodies". Chromosomes, both from the father's side and from the mother's side, interact to form pairs of pairs. Two members of each partner have a form and function the same. Meanwhile, each individual begins to live with a cell in the ovary that has been fertilized by one sperm. This cell shares in two, each sharing again in two, again in two, and so on so forming organs. This cell division process is called "Mitosis". According to experts, it is stated that; all cells in bodies have identical heredities as a result of the process of individuation and differentiation. Approach There is a biological rule system that provides guidance for educational psychology where the child is in birth and growth has been initiated from the lineage not separated from his parents. For that, nativism is a flow in this very important part as a part of studies that should be explored further (Masataka,2020).

CHAPTER 3. LEARNING THAT PAYS ATTENTION TO CHILDREN'S POTENTIAL



Caring for Babies Photo by Kristina Paukshtite (Estonia)

Learning activities are carried out properly efficiently and effectively, achieving optimal results, which is a picture of what educators expect at the end of the education program. The results as expected above are not a gift, do not come from the sky, but must be planned, managed properly controlled. For this reason, learning activities are a process of managing various aspects related to learning (Amhag,2020).

Some of the main factors of learning activities are educators and students. Students who are the subject and the object of learning activity, which it is in itself At the beginning of the activity, he was in his condition analyzed, and it is upon him that the formulation of

objectives is expected. Then a review of students must be carried out in a manner complete, comprehensive, and so on.

Students are members of society who try to develop their potential through the learning process available at certain paths, levels, and types of education. Students as children, owning their world, must be used as the basis for how a teacher designs, manages, and develops learning strategies to evaluate learning success. In terms of designing learning, psychologically the child must really pay attention to according to his circumstances and objective conditions. Children are children, adults are adults so it is not true that children are small adults. For this reason, children with all their worlds are an important factor in how we should treat children in terms of learning activities.

Meanwhile, in the development of background learning strategies for children who grow and develop to get their identity, the strategy must accommodate whether it is with individual learning strategies, group learning, or learning with large classes. Until the learning evaluation activity. It is realized that evaluation is a sign of the success of children in participating in learning activities. A good evaluation is one that provides data, accurate information about what the child is experiencing, what the child might be able to develop to participate in the next learning activity.

3.1. Understanding and Learning Objectives

Learning is an absolute prerequisite for being smart in all matters, both in terms of science and in terms of skills or abilities. An infant, for example, has to learn various skills, especially motor skills such as; learn to face down, sit, crawl, stand or walk. The following are some definitions of learning according to experts: Learning is a process of efforts carried out by individuals to obtain a whole new change in behavior, as a result of the individual's own experiences in interaction with their environment (Uskov et al,2020).

Learning is done intentionally or unintentionally with the teacher or without the teacher, with the help of other people, or without the help of anyone. Learning is also defined as an

attempt to form a relationship between stimuli or reactions. Learning is done by everyone, including children, adolescents, adults, and parents. Learning lasts a lifetime, while life is contained in the body. Various definitions (formulas) of learning have been put forward by experts, all of whom agree that learning aims to make changes. Clearly, learning can be defined as a business or activity that aims to make changes in a person, including; changes in behavior, attitudes, habits, knowledge, skills, and so on.

Learning is an activity/psychic, which takes place in active interaction with the environment which results in a number of changes in knowledge, skills, values, and attitudes that are constant and persistent. learning is a process of the effort carried out by a person to obtain a whole new change in behavior as a result of his own experience in interaction with his environment. Learning can also be defined as a stage of change in all individual behavior that is relatively sedentary as a result of experiences and interactions with the environment that involve cognitive processes.

A person is said to learn when there is a change in his or her behavior which is an ability from the results of experience. In addition, it can also be concluded that learning is a process of gaining knowledge and experience in the form of changes in behavior and the ability to react relatively permanently or permanently due to individual interactions with their environment. Changes in learning are not only related to the addition of knowledge but also in the form of skills, attitudes, understanding, self-esteem, interests, character, self-adjustment, and so on. This change can be in the form of a completely new result or an improvement to the results that have been obtained.

The notion of learning is a process or effort made by each individual to get a change in behavior, both in the form of knowledge, skills, attitudes, and positive values as an experience of the various materials that have been studied. The definition of learning can also be interpreted as all psychological activities carried out by each individual so that their behavior differs between before and after learning. Changes in behavior or responses due to new experiences, having intelligence/knowledge after learning and practicing activities.

The meaning of learning is a process of changing a person's personality where these changes are in the form of improving the quality of behavior, such as increasing knowledge, skills, thinking power, understanding, attitudes, and various other abilities. The notion of learning is very complex, it cannot be interpreted with certainty, because of the opinions of experts from one expert to another in providing a different understanding of learning. This depends on the sect he adheres to. The learning process is essentially educational communication which can lead to a reciprocal relationship between two or more things or the same persons, with the aim of directing themselves to a particular goal to be achieved (McTighe & Silver,2020).

Learn is a very common word heard in the ear. The word learns almost every day even heard and used in various speeches. Learning is basically turning ignorance into knowing something. More than that, learning also results in changes in a person's attitude, nature, and thinking. Learning is all psychological activities carried out by each individual so that their behavior differs between before and after learning. So if a person has not experienced changes in both attitudes, thoughts, and so on, it can be said that he has not learned. Learning will be better if the subject experiences and does it. For example, a student always comes late to school because he missed the bus. If he learns from his mistakes he will correct them by getting up earlier and getting to the bus stop early so he is not late for school. The notion of learning is a process or effort made by each individual to get a change in behavior, both in the form of knowledge, skills, attitudes, and positive values as an experience from the various materials that have been studied. The definition of learning can also be defined as all psychological activities carried out by each individual so that their behavior differs between before and after learning. Changes in behavior or responses due to new experiences, having intelligence/knowledge after learning and practicing activities.

The meaning of learning is a process of changing a person's personality where these changes are in the form of improving the quality of behavior, such as increasing knowledge, skills, thinking power, understanding, attitudes, and various other abilities. Learning is something

in a process and is a fundamental element in each level of education. Learning is a change in a person's behavior towards a certain situation caused by repeated experiences in that situation. Learning is a process of change in the human personality where this change is manifested in the form of an increase in the quality and quantity of behavior, knowledge, attitudes, or thinking power. The definition of learning, in general, is an effort or process carried out by each individual to gain a lot of knowledge, skills, change behavior, attitudes, and positive values as the practice of the various kinds of material that have been studied. In addition, the definition of learning means all the psychological activities that individuals do so that there are differences in behavior or behavior between before and after learning. Changes in attitudes, behavior, responses are formed due to new experiences, having special knowledge, mastering skills after learning, and continuous practice activities. Learning is a process of changing the behavior and personality of an individual, where these changes are an increase in the improvement of thinking power, attitudes, understanding, skills, and various other abilities. learning has its own characteristics, here are the characteristics of learning:

- Changes in behavior resulting from learning are permanent and permanent.
- The learning process takes a long time which will result in positive behavior.
- The occurrence of changes in behavior, either observed or not directly observed.
- The learning process can occur within the scope of social interaction in a community environment where a person's behavior can change due to the environment.
- Some of the changes that are not included in the learning process are due to hypnosis, growth, miracles, unseen things, maturity, physical damage, and disease.

Education as an investment in the future has an important role in building the nation. education buddy really believes that friends also agree that education is very important. the main task of all of us, in general, is to learn. Learning objectives are a number of learning outcomes that indicate that students have done learning actions which indicate that students have done learning actions, which generally include new knowledge, skills, and attitudes, which are expected to be achieved by students. Learning objectives are a description of the behavior that is expected to be achieved by students after the learning process takes place. Learning objectives are an accurate way of determining learning outcomes.

A goal is an aspiration to be achieved from the implementation of an activity. There is no activity that is programmed without purpose because it is something that has no certainty in determining which direction the activity will be taken. Globally, the purpose of learning is that there is a change in a person for the better. So from this statement will be explained in detail some of the following learning objectives:

Learning aims to make changes within, among others, behavior. With the existence of learning activities, the norms possessed by a person after he/she carries out learning activities will change for the better. In this activity, educators can train in learning at school, this can be started by giving examples by the educators themselves. So an educator must always maintain an attitude so that he can be role models for his students because remember that the desired goal in learning is positive. The results of learning activities can be marked by an increase in a person's thinking ability. So, besides having new knowledge, the learning process will also make a person's thinking ability better. In this case, knowledge will increase one's thinking ability, and vice versa, thinking ability will develop through the knowledge that is learned. In other words, knowledge and the ability to think are inseparable things.

Increased knowledge and understanding in mastering the material is the result of the learning process. In addition to increasing knowledge, the learning process will also make a person's thinking power even better, so that person can think critically about a problem. Even though every individual has different skills from one another, be aware that these skills do not come suddenly. They have to go through a learning process in order to hone these skills. Learning can also shape a person's attitude or personality. By going through the learning process, a person is able to grow awareness within himself, thus shaping his character as it is today. The skills possessed by each individual are through the learning process. Cultivation of concepts requires skills, both physical and spiritual skills. In this case, physical skills are individual abilities in appearance and observable movement. These skills are related to technical matters or repetition. Meanwhile, spiritual skills tend to be more complex because they are abstract. This skill is related to appreciation, way of thinking, and creativity in

solving problems or creating a concept.

Learning activities can also shape a person's attitude. In this case, the formation of students' mental attitudes will be closely related to the cultivation of values so as to foster awareness in themselves. In the process of fostering the mental, behavioral and personal attitudes of students, a teacher must take a wise and careful approach. Teachers must be able to be an example for students and have skills in providing motivation and directing thinking. Educators must have good readiness when they are going to teach and the use of approaches, strategies, and methods so that students do not feel a boring atmosphere in learning. The choice of method must be adjusted to the material, the characteristics of the educator, the facilities and infrastructure, the costs, and so on in order for the learning to be successful. Learning objectives are important in the framework of a learning system, which is a component of a learning system that becomes a starting point in designing an effective system. This goal is not only aimed at students who are used as objects, namely students' achievement is measured when students have finished the learning process only, but this is mutually sustainable between students, teachers, and learning components. With the existence of a goal, a harmonious relationship can be created between teachers and students, students with the learning system, teachers with the learning system, and vice versa.

Learning is one of the human activities which is very important and must be carried out throughout life because it is through learning efforts that we can make changes (improvements) in various matters that concern our own interests. In other words, through learning efforts we will be able to improve our destiny through learning we will be able to arrive at the dreams we have always longed for. Therefore, learning in life and life has a very important and strategic place to direct, straighten, and even determine the direction of one's life.

3.2. Factors Affecting Learning

Learning is a process of activities or activities carried out by individuals to obtain a whole new change in behavior, as a result of the individual's own experience in interaction with his

environment. The conditions that accompany these activities clearly contribute to the process and the goals achieved, so they are called factors that influence learning. The success or failure of a person in learning is responsible for many factors, among others; health conditions, state of intelligence and talents, circumstances, interests and motivation, student learning, family circumstances, and so on. Learning achievement achieved by an individual is the result of the interaction between various factors that influence it both from within (internal factors) and from outside (external factors) of the individual. The recognition of the factors that influence learning achievement is very important in order to assist students in achieving the best possible learning achievement. These two factors influence each other in the individual learning process so as to determine the quality of learning outcomes. Internal factors are factors that come from within the individual and can affect individual learning outcomes. These internal factors include physiological factors and psychological factors (Tran,2020).

Physiological factors are factors related to the physical condition of an individual. These factors can be divided into two kinds. First, the state of physical tone. The state of physical tone in general greatly affects a person's learning activities. A healthy and fit physical condition will have a positive influence on individual learning activities. On the other hand, weak or sick physical conditions will hinder the achievement of maximum learning outcomes. Therefore, the state of physical tone greatly affects the learning process, and efforts are needed to maintain physical health. Second, the state of physical/physiological function. During the learning process, the role of physiological functions in the human body greatly affects learning outcomes, especially the five senses. The five senses that function properly will facilitate learning activities well too. In the learning process, it is the entrance for all information received and captured by humans. So that humans can capture the outside world. The five senses that have a big role in learning activities are the eyes and ears. Therefore, both teachers and students need to take good care of the five senses, both preventively and curatively. By providing learning facilities that meet the requirements, periodic check on the health of the eye and ear functions, consuming nutritious food, and so on.

Physiological factors must be reviewed because there can be a background for learning activities, a state of physical tone, because a body that is fresh and not fresh, tired, not tired will affect the learning situation. Besides that, certain physical functions, especially the functions of the five senses, are because the five senses are the gateway for influences to enter into the individual, people can get to know the world around them and all that learning by using the senses. Psychological factors are a person's psychological state that can affect the learning process. Some of the main psychological factors affecting the learning process are students' intelligence, motivation, interests, attitudes, and talents. This factor has a big share in the ongoing process of one's learning, both the potential, circumstances, and abilities that are described psychologically in a child are always considered to determine the learning outcomes.

In general, intelligence is defined as the psycho-physical ability to react to stimuli or adapt to the environment in an appropriate way. Thus, intelligence is not only related to the quality of the brain, but also other organs of the body. But when it comes to intelligence, of course, the brain is an important organ compared to other organs, because the brain functions as the highest control organ (executive control) of almost all human activities. Intelligence is the most important psychological factor in student learning because it determines the quality of student learning. The higher the intelligence of an individual, the greater the chance that the individual will be successful in learning. Conversely, the lower the level of individual intelligence, the more difficult the individual is to achieve learning success. Therefore, it is necessary to have tutored from other people, such as teachers, parents, and so on. As an important psychological factor in achieving learning success, every prospective professional teacher needs to have knowledge and understanding of intelligence, so that they can understand their level of intelligence. An understanding of the level of individual intelligence can be obtained by parents and teachers or interested parties through consultation with a psychologist or psychiatrist. So that it can be seen that students are at which level of intelligence, very superior, superior, average, or maybe mentally weak. Information about a person's intelligence level is very valuable for predicting a person's learning ability.

Understanding the level of intelligence of students will help direct and plan the assistance that will be given to students.

Motivation is one of the factors that influence the effectiveness of student learning activities. It is the motivation that encourages students to want to do learning activities. Psychologists define motivation as a process within the individual that is active, encourages, provides direction, and maintains behavior at all times. Motivation is also defined as the influence of needs and desires on the intensity and direction of a person's behavior. From the source point of view, motivation is divided into two, namely intrinsic motivation and extrinsic motivation. Intrinsic motivation is all factors that come from within the individual and provide encouragement to do something. Like a student who likes reading, he doesn't need to be told to read because reading is not only a pleasant activity but has become a necessity. In the learning process, intrinsic motivation has an effective effect, because intrinsic motivation is relatively longer and does not depend on external (extrinsic) motivation. Included in intrinsic motivation to learn include:

- The drive is curious and wants to explore the wider world
- The existence of positive and creative traits that exist in humans and the desire to move forward
- There is a desire to achieve achievement so that it gets support from important people, for example, parents, siblings, teachers, and friends.
- There is a need to master knowledge or knowledge that is useful for him.

Extrinsic motivation is a factor that comes from outside the individual but has an influence on the willingness to learn. Such as praise, rules, rules, role models of teachers, parents, and so on. Lack of response from the environment will positively affect one's enthusiasm for learning to become weak.

Memory is the ability to hold impressions or remember. This ability is not the same quality in every student subject. However, there is something common to anyone: that as soon as one has finished the act of learning, the process of forgetting takes place. Things that are forgotten at first accumulate quickly, then progress more slowly, and finally, some things will remain

and remain in memory for a relatively long time. In order to achieve a sufficient proportion to remember, according to educational psychologists, students must repeat what they learn in a not too long period of time. The implication of this view in the learning process is that it is possible for students to repeat or recall the learning material they have learned. This, for example, can be done by giving tests after a learning sub material is complete. Theoretically, there are 3 aspects related to the functioning of memory, namely:

- Receive impressions,
- Save an impression, and
- Produce an impression.

Perhaps because of these functions, the term "memory" has always been defined as the ability to receive, store and reproduce impressions.

The ability to receive impressions has a very central role in learning. Through this skill, students are able to remember the things they have learned. In the context of learning, this skill can be influenced by several things, including the learning techniques used by educators. Learning techniques that are accompanied by teaching aids will have a deeper impression on the student. In addition, the development of learning techniques that utilize "memory paths" is also more impressive for students, especially for learning materials in the form of formulas or sequences of certain symbols. The ability to reproduce, namely the activation or the process of reproducing things that have been learned, is no less interesting to note. However, things that have been learned, in time, must be produced to meet a student's particular needs, for example, the need to answer questions on an exam or to respond to the challenges of the world around him. Educators can sharpen students' abilities in this case by giving learning material assignments that have been given.

In simple terms, interest (interest) means a tendency and high excitement or a great desire for something. Interest is not a popular term in psychology due to its dependence on various other internal factors, such as concentration, curiosity, motivation, and needs. But regardless of his popularity, interest is the same as intelligence and motivation, because it influences learning activities, he will not be excited or even unwilling to learn. Therefore, in the context

of classroom learning, a teacher or other educator needs to arouse students' interest to be interested in the subject matter they will face or learn. To generate interest in learning, there are many ways that can be used. Among others:

- By making the material to be studied as attractive as possible and not boring, both from the form of a material book, learning design that frees students to explore what is being learned, involves all student learning domains (cognitive, affective, psychomotor) so that students become active, as well as teacher performance which is interesting when teaching.
- Selection of majors or fields of study. In this case, it would be nice if the department or field of study was chosen by students according to their interests.

In the learning process, individual attitudes can affect the success of the learning process. Attitude is an internal symptom that has an affective dimension in the form of a tendency to react or respond in a relatively constant way to objects, people, events, and so on, both positively and negatively. Attitude is also the ability to provide an assessment of something that carries itself according to the assessment. The existence of an assessment about something results in an attitude of accepting, rejecting, or neglecting. Students get learning opportunities. However, students can accept, reject, or ignore these learning opportunities.

Students' attitudes in learning can be influenced by feelings of pleasure or displeasure with teacher performance, lessons, or the surrounding environment. And to anticipate the emergence of negative attitudes in learning, teachers should try to become professional teachers and be responsible for the profession they choose. With professionalism, a teacher will try to give the best for his students, trying to develop a personality as a teacher who is empathetic, patient, and sincere to his students; trying to present the lessons he teaches well and interestingly so that students can participate in lessons happily and not tediously, convincing students that the field of study they are studying is beneficial for students.

Another psychological factor that influences the learning process is talent. In general, aptitude is defined as the potential ability a person has to achieve success in the future. Talent is the general ability a student has to learn. Thus, talent is a person's ability to be one

of the components needed in one's learning process. If a person's talent is in accordance with the field he is studying, then that talent will support his learning process so that he is likely to succeed. Basically, everyone has the talent or potential to achieve learning achievement according to their respective abilities. Therefore, talent is also defined as the basic ability of an individual to perform certain tasks without depending on educational and training efforts. Individuals who already have certain talents will find it easier to absorb information related to talents who learn languages other than their own. Because learning is also influenced by the potential of each individual, educators, parents, and teachers need to pay attention to and understand the talents their children or students have, among other things by supporting, developing, and not forcing children to choose majors that are not suitable. with his talent.

Learning concentration is the ability to focus on the lesson. The focus of attention is focused on the content of the learning material and the process of obtaining it. To strengthen attention to lessons, teachers need to use a variety of teaching-learning strategies and take into account study times and rest intervals. In classical teaching, the power of attention for thirty minutes has decreased. It is recommended that the teacher give a few minute breaks. With this interlude, the student's learning achievement will improve again. In daily activities, it is found that there are poor learning habits. These study habits include:

- Study at the end of the semester
- Studying is disorganized
- Waste of learning opportunities
- School is only for prestige
- Late dating style like a leader
- Manly acting like smoking, pretending to patronize other friends,
- Be stylish asking for "compassion" without studying.

These bad habits can be found in schools in big cities, towns, villages and other schools. For some people, this study habit is caused by students' lack of understanding of the meaning of learning for themselves. Things like this can be corrected by fostering self-learning discipline.

In general, every child has an ideal in life. These ideals are intrinsic motivation. However,

there are times when there is no "clear picture" of role models for students. As a result, students only behave in part. Ideals as intrinsic motivation need to be educated. Planting has an aspiration to start from elementary school. In high school, education for ownership and achievement of goals has become increasingly focused. Ideals are a form of self-exploration and emancipation of students. Cultivating ownership and achieving ideals should start from the ability to achieve, starting from the simple things to the more difficult ones. By linking the ownership of ideals with the ability to achieve, students are expected to have the courage to explore according to their own abilities.

Apart from student characteristics or endogenous factors, external factors can also influence student learning. External factors are factors that come from outside the student. External factors that influence learning can be classified into two groups, namely social environmental factors, and non-social environmental factors.

Non-social factors can also be said to be insignificant, such as air-condition, air temperature, weather, morning, or afternoon, night, location of the place, the tools used for learning, in other words, learning tools. It must be arranged in such a way so that it can meet the requirements according to didactic, psychological, and pedagogical considerations. The factors which include non-social environment are;

- Natural environment, such as fresh air condition, not hot and not cold, light that is not too bright/strong, or not too weak/dark, the atmosphere is cool and calm. These natural environments are factors that can influence student learning activities. Conversely, if the conditions of the natural environment are not supportive, the student learning process will be too late.
- Instrumental factors, namely learning tools that can be classified into two types. First, hardware, such as school buildings, learning equipment, learning facilities, sports fields, and so on. Second, software, such as school curricula, school rules, manuals, syllabi, and so on.
- Subject matter factors (taught to students). This factor should be adjusted to the age of the student's development as well as the teacher's teaching method, adjusted to the

conditions of student development. Therefore, so that teachers can make a positive contribution to student learning activities, the teacher must master the subject matter and various teaching methods that can be applied according to the student's condition.

The social factor is the human factor, whether the human is present (present) or absent. The presence of other people, while one is studying greatly, interferes with the learning situation. For example, a class is doing an exam, then hears the sound of children making noise next to the class or someone is studying in the room, then there are one or two people going back and forth in and out of the room and many other examples. The social factors that have been stated are generally disturbing the situation of the learning process and learning achievement, because they interfere with concentration, this needs to be arranged so that learning takes place as well as possible. The general social environment includes:

- The school's social environment, such as teachers, administration, and classmates can affect a student's learning process. The harmonious relationship between the three can be a motivation for students to learn better in school. Behavior that is sympathetic and can be a role model for a teacher or administration can be an incentive for students to learn.
- Social environment. The environmental conditions in the community where students live will affect student learning. The slum environment of students, many unemployed and neglected children can also affect student learning activities, at least students have difficulty when they need study companions, discussions, or borrow learning tools that they do not happen to have.
- Family social environment. This environment greatly influences learning activities. Family tensions, parental characteristics, family demographics (where the house is located), family management can all have an impact on student learning activities. A harmonious relationship between family members, parents, children, brothers, and sisters will help students carry out learning activities well.

The factors that influence the learning process consist of internal and external factors. Internal factors are factors that come from within the individual and can affect individual learning outcomes. These internal factors include physiological factors and psychological factors. Meanwhile, external factors that influence learning can be classified into two groups, namely social environmental factors, and non-social environmental factors. Physiological

factors are factors related to the physical condition of an individual. Psychological factors are a person's psychological state that can affect the learning process. Some of the main psychological factors affecting the learning process are students' intelligence, motivation, interests, attitudes, and talents. External factors which include the social environment include school, community, and family factors. Meanwhile, external non-social environmental factors include natural, instrumental, and subject environments.

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