

The Implementation of Jean Piaget's Constructivist Theory Using the Zentangle Method in Junior High School Visual Arts Learning

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Abstract

The purpose of this study is to describe the implementation of Jean Piaget's constructivist theory using the Zentangle method in visual arts learning for junior high school students. This research employed a descriptive qualitative approach with 30 ninth-grade students of SMP Negeri 1 Nawangan as the research subjects. Data were collected through observation, interviews, and documentation during the visual arts learning process. The results of the study indicate that the application of Jean Piaget's constructivist theory through the Zentangle method provides a holistic learning approach by engaging students' cognitive, affective, and psychomotor aspects. Consequently, visual arts learning becomes more meaningful, enhances students' learning motivation and self-exploration, and improves the quality of students' learning and artistic practice.

Keywords: Constructivism, Zentangle, Art Education, Visual Arts Learning



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Introduction

In this era, 21st-century learning is often touted as requiring changes in learning patterns to prepare and produce a generation that is ready to face global challenges. Several efforts have been made to achieve these challenges, such as the implementation of 4C (Critical Thinking, Creativity, Collaboration, Communication) (Maharani et al., 2025). Thus, in general, 21st-century education requires not only educators or teachers to play an active role, but also students to be active in learning activities. To realize this, it is very important for educators to understand learning theories and their application. That way, learning activities can be carried out systematically, the quality of learning can be improved, and the education process can be as expected (Djamaluddin, 2019). In this paper, the learning theory that the author will discuss is constructivism.

Constructivism is a learning approach that prioritizes activity in the learning process. Constructivism comes from the word "construct," which means to build. Thus, constructivism learning theory is an important approach in learning psychology in constructing one's thoughts or knowledge through interaction with the surrounding environment (Mustika, F. A., 2024). This theory emphasizes the active role of individuals in engaging in constructing meaning from their respective experiences, rather than simply receiving information passively.

Arts education is one of the efforts to train students to play an active role in the learning process because arts education does not only require theoretical explanations, but students are also invited to be involved in creating works according to their respective abilities so that some of the 4C objectives, one of which is creativity, can be achieved. However, it is unfortunate that there are still many people

who consider arts education to be merely a supplement to other subjects. This is because many parents still view and judge their children's success based on their grades or achievements, rather than the process experienced by the children themselves. In fact, arts education today is not only a complement to other subjects, but also a driver of social transformation and sustainable development (Sampurno et al., 2025).

Arts education is considered very important for developing creativity, imagination, social emotional skills, physical abilities, and aesthetic experiences in children (Evant et al., 2024). Arts education is an important platform for students to freely express their emotions, thoughts/ideas, and perceptions as individuals (Tambunan & Napitupulu, 2015). With this potential for subjective expression, art should be a medium for play for every individual. The instinct to play is rooted in basic human traits that have evolved over time (Bregman, 2020). Throughout thousands of years of human civilization, art has been a medium closely linked to cultural development. Prehistoric paintings in Chauvet Cave, Cueva de las Manos, and Leang-Leang Cave represent the daily activities of hunter-gatherer societies, such as hunting, spiritual beliefs, and handprints as a form of celebration. These findings show that art as a medium for play has functioned since the beginning as a means of communication, expression, and shaping human culture. Play is the origin of culture (Huizinga, 1949). The problem, based on observations and interviews with arts and culture teachers, especially at Nawangan 1 Public Junior High School, is that in arts classes, students are often trapped in patterns of visual standardization that have been established over many years. In this modern era, however, subjectivity, aesthetics, and thought in works of art cannot always depend on standards of beauty that have been determined for centuries (Handayani et al., 2022). This kind of standardization makes the learning process and understanding of the material by students tend to be passive rather than students trying to actively process their own creativity and imagination to create something new in accordance with their desire to communicate their respective ideas and emotions. Students tend to be more comfortable copying images from the internet or other media without making any effort to develop their own creativity. Meanwhile, the author also found that many junior high school students lose motivation when creating art because the works they copy from references do not match their ideals, resulting in suboptimal final products. Ultimately, students will feel that they "cannot draw," which makes art learning activities that should be constructive become destructive efforts. Art education for children needs to be free from certain standards, so that their expressions are purely the result of playing in accordance with their intellectual grasp of all the experiences they have had (Saragi, 2014). In an effort to break away from standardization and passivity in creating art, the author uses the zentangle method as a means of conducting visual arts learning activities.

The Zentangle method is a meditative drawing method that combines the concepts of Zen Buddhism and tangles. The Zentangle method is carried out by creating repetitive patterns into a new pattern that does not represent anything and is unplanned, so that the artist does not need to worry about the final result (Zentangle, Inc., n.d.). The reason the author chose this method in applying constructivism theory to art at the junior high school level () is that the Zentangle method does not have a specific standard for the final result. This is because zentangle works are created by organizing random patterns into a new harmonious pattern. Without being constrained by certain visual standards, students can be more free to work according to their individual drawing abilities.

Based on these conditions, the research question is how Jean Piaget's constructivism theory can be applied through the Zentangle method in art education at the junior high school level.

Methods

This study uses a qualitative descriptive approach with the aim of describing the application of Jean Piaget's constructivism theory using the Zentangle method in junior high school students' art learning. Qualitative research is a research method used to examine objects in their natural conditions, where the researcher acts as the main instrument in the data collection and analysis process (Salim, 2019).

The research subjects included 30 ninth-grade students from Nawangan 1 Public Junior High School. Data collection was carried out through observation, interviews, and documentation of art lessons that applied Jean Piaget's constructivism theory using the Zentangle method. Data analysis was carried out through data reduction, data presentation, and conclusion drawing.

Results and Discussions

1. Jean Piaget's Constructivism

Piaget was a Swiss expert in the fields of biology and psychology (Leni, 2020). Jean Piaget is known as the first constructivist figure who had a major influence on constructivism theory. Piaget explained that constructivism is a system designed to enable students to adapt and improve the knowledge they have acquired (Nurfatimah, 2019). Every experience that occurs in children contains unique elements that must be accommodated by the child's cognitive structure. A child's cognitive structure will change through interaction with their environment and enable continuous development of experience. Piaget refers to this cognitive structure as "schemata," which will always develop through existing schemata. In general, students are able to construct new information or understanding when they already have the capital in the form of basic information or understanding. Thus, Piaget divides the learning process into two processes, namely the organization and adaptation processes (Sunanik, 2014).

In the organization process, students acquire new information and then connect it with information obtained from previous learning experiences. Meanwhile, Piaget divides the adaptation process into several stages, namely:

- a. Assimilation is the integration of new information with information that has been obtained previously, either through direct or theoretical experience. Assimilation usually occurs in learning when students are able to connect newly acquired material with their prior knowledge.
- b. Accommodation is a cognitive process that occurs when new information or experiences cannot be fully understood through existing schemas, so individuals need to modify old schemas or form new ones. In learning, accommodation usually occurs when students are faced with cognitive conflicts that encourage them to improve their previous thinking processes.
- c. Equilibration is a regulatory mechanism that regulates the relationship between assimilation and accommodation in order to achieve cognitive balance. In learning, when students are unable to adequately assimilate new information, a state of disequilibrium arises that encourages accommodation. Thus, students need to reorganize and readjust their cognition in order to achieve a new equilibrium with a higher level of understanding.

Jean Piaget explained that cognitive development in individuals occurs through a genetic process (Henri, 2020). This process involves the development of the nervous system in the human brain. As a person ages, the nerves that are formed become more complex, thereby increasing their ability to understand learning. Piaget described this process in four stages (Utami, 2016):

- a. Sensorimotor (0-2 years), which is the stage when children understand their world through their senses and physical stimuli such as touch, smell, sight, and hearing.
- b. Preoperational (2-7 years), which is the stage when children become familiar with symbols and language and are able to imagine. At this stage, children are still dominated by their emotional brain rather than their rational brain, which makes them tend to be egocentric or find it difficult to understand other people's points of view.
- c. Concrete Operational (7-11), which is the stage when children are able to develop logical or rational thinking. At this stage, children already understand conservation and classify objects, but they still have difficulty thinking abstractly, such as making hypotheses. The tendency at this stage is that children need more concrete examples to understand something.

- d. Formal Operational (11 years and above), this stage enters adolescence to adulthood. At this stage, individuals are able to think abstractly and achieve intellectual maturity. They are able to consider various possibilities and even think about abstract concepts such as equality, love, humanity, and so on.

Based on the above explanation, the essence of learning using Jean Piaget's constructivism theory is a learning process in which students actively construct new information. The goal of this theory is for students to acquire knowledge that is more meaningful to each individual according to their respective life paths and abilities. Therefore, when using this theory, teachers are expected to act as facilitators in order to provide learning experiences that are interesting and well-received by students in accordance with the learning outcomes and objectives to be achieved (Tirtawaty, 2019).

2. Zentangle Method

The art or method of Zentangle is a method developed by a married couple named Rick Roberts and Maria Thomas in the early 2000s. Rick Roberts is a practitioner of Zen Buddhism meditation, while Maria Thomas is a calligrapher (Zentangle, n.d.). These two different disciplines inspired the name Zentangle, which comes from the word "zen," a school of Buddhist meditation that emphasizes self-awareness in every moment, and "tangle," which is derived from the term used to describe the technique of creating repetitive patterns by composing various elements of art such as lines, dots, and shapes. This method is quite simple because the artist does not have to be skilled at drawing, there are no specific standards for the final result, and the steps are quite easy. However, what needs to be emphasized in this method is patience and focus. So, in general, the Zentangle method is a method of drawing by creating repetitive patterns into a new pattern that has a meditative function.

The Zentangle method has several steps (Sugiyanto & Setyobudi, 2023). These steps are:

- a. Gratitude and Appreciation. This stage begins with a mindfulness technique, which involves preparing the media and tools to be used before drawing and relaxing to create a sense of comfort before starting to draw.
- b. Corner Dots. In this stage, the artist makes several dots to serve as the corners of the drawing.
- c. Border. From the corner dots that have been made, the artist connects the corner points with lines as the edges of the drawing to form a single whole area.
- d. String. In this stage, the artist divides the area formed by the border into several smaller areas by making straight, curved, or zigzag lines.
- e. Tangle. The smaller areas are filled with simple patterns formed by organizing dots, lines, and areas.
- f. Shade. The artist shades the patterns that have been created with a pencil to give the patterns a sense of depth.
- g. Initial Sign. The artist signs their name or adds a mark of authenticity as a form of appreciation.
- h. Appreciate. Once the drawing is complete, the artist appreciates their personal work as a form of pride.

3. The application of constructivism theory in art education using the Zentangle method

From the two theories described above, both Jean Piaget's constructivism and the Zentangle method can support each other during the learning process. Piaget believes that students are actively involved with their environment to construct knowledge. Similarly, in Zentangle, students are actively involved in creating complex patterns and designs. They are not passive recipients of information, but active participants in the process of creating art.

At the junior high school age, students are in the formal operational phase where they are capable of abstract and logical thinking. In this phase, students have idealistic tendencies (Rianduli & Sianturi, 2023). However, it should be understood that this age cannot yet be considered a mature adult phase. Conny Semiawan (1984) explains that students at this age enter adolescence, commonly

referred to as the "negative phase." Although, in Piaget's constructivism theory, students are capable of abstract thinking, they tend to hesitate to explore. In fact, this abstract thinking ability is used to create new standards of that suppress their freedom in creating art. Constructivism theory focuses on how this theory requires students to play an active role in building their learning experiences. In order to build activity and minimize hesitation, the zentangle method is used to achieve meaningful learning experiences. The following is an explanation of the stages of applying Jean Piaget's constructivism theory in junior high school art education using the zentangle method.

a. Organization

The organization stage is when students acquire new information and then connect it with information obtained from previous learning experiences. At the organization stage, students are explained the concept of drawing using the Zentangle method. By understanding that Zentangle is a method of drawing by creating repetitive patterns, this material can be linked to the visual elements material obtained at the beginning of the semester in phase D.

In the practical work activity, the organization stage is carried out by giving students the task of creating various patterns or motifs on small squares or circles, the number of which is adjusted to the size of the paper provided. These patterns or motifs are formed based on the elements of dots, lines, and planes, which are the most basic elements in zentangle art. The creation of dot, line, and plane patterns is done separately so that students first learn how to create patterns from one simple element. This project aims to bridge the ability to create motifs that has been acquired in the decorative elements, visual arts elements, and drawing with the zentangle method materials.

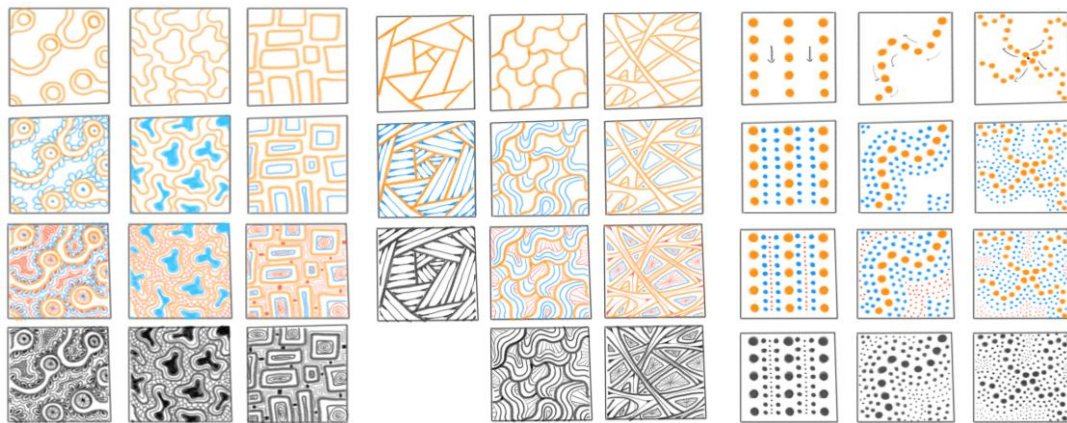


Figure 1. Example of steps in composing dot, line, and shape elements

b. Adaptation

1) Assimilation

Piaget emphasized the importance of exploration and discovery in the learning process. Therefore, Piaget also encouraged the importance of teachers as facilitators, who must create a supportive environment and provide challenges appropriate to the students' stage of development (Alfadhilah, 2025). Zentangle encourages students to explore different patterns, lines, and shapes, allowing them to discover new possibilities and combinations. Thus, the assimilation stage is carried out by combining new information with information that has been obtained previously, either through direct or theoretical experience. The information that has been learned previously is related to the reintroduction of the elements of form by creating various patterns using dots, lines, and planes separately. After students understand how to create various patterns or motifs based on the three elements of form, namely points, lines, and planes, the next stage is to combine or combine these three elements into new motifs.

2) Accommodation

This is a cognitive process that occurs when new information or experiences cannot be fully understood through existing schemas, so individuals need to modify old schemas or form new ones. This stage is carried out by implementing the motif development that has been done previously on certain shapes or objects. At this stage, students who are able to freely create various pattern variations in the assimilation phase will reach the next

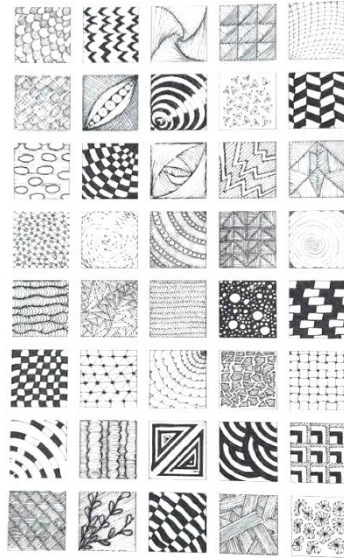


Figure 2. Example of a Zentangle pattern

stage, which is the equilibration phase. Meanwhile, students who have difficulty creating patterns will experience the disequilibrium phase, requiring more guidance from teachers and peers in the process to help them reorganize and readjust their cognition so that they can achieve a new equilibrium with a higher level of understanding.

3) Equilibration

Equilibration is the final stage when students have reached a balance between assimilation and accommodation. This equilibration can be seen through students' understanding after practicing drawing using the Zentangle method, such as the emergence of confidence, focus, and better hand control in their work. If students reach this stage, some of them experience a state of "flow," which is the peak of human performance when a person is completely immersed, focused, and engaged in a particular activity (Goleman, 1995). In addition, students who were initially fixated on standardization, either due to their environment or internal standardization, can better understand that drawing is not always about producing a certain shape, but also about the fun process of playing.



Figure 3 Example of student work

The above explanation proves that the Zentangle method is able to effectively realize Piaget's constructivism theory in art education. In accordance with the basis of constructivism theory, which states that learning needs to prioritize creative activities and the construction of new knowledge based on experience or something that has been learned previously, student involvement is not only in the cognitive realm but also in the psychomotor and affective realms. Based on interviews conducted with students, the majority of them never expected to be able to create works like this. The author also observed that some of them documented their personal works using smartphones before the works were collected as a form of appreciation and pride.

The use of the Zentangle method can create learning that supports student development in cognitive, psychomotor, and affective aspects. In the cognitive aspect, students are trained to focus when practicing pattern making. In the psychomotor aspect, when students practice making patterns, they also practice being sensitive to how to arrange and create patterns harmoniously. Practicing making pattern variations can also train precision and the ability to control hand movements. In the affective aspect, the Zentangle method can train patience and increase students' self-confidence because Zentangle does not aim to create a specific shape or object, but rather to organize simple patterns into new patterns that were never expected or planned beforehand by the artist.

Conclusion

Based on the results of the research and discussion presented, it can be concluded that Jean Piaget's constructivism theory has strong relevance as a foundation for art education at the junior high school level. This theory emphasizes the importance of direct experience and active student involvement in constructing knowledge, so that the learning process is not only oriented towards the final result but also towards the thinking process and learning experience of the students.

The application of the zentangle method in art education has been proven to facilitate the process of knowledge construction in students. Through the activity of drawing patterns that are not bound to the representation of objects or certain visual standards, students can relate their prior knowledge of visual elements such as points, lines, and planes to new experiences in a more free and enjoyable way. This condition encourages a change in the way students think, from a tendency to imitate and fear of making mistakes to being more courageous in exploring and understanding the creative

process as an important part of learning. In addition to its impact on cognitive aspects, the application of the Zentangle method also contributes positively to the development of students' affective and psychomotor aspects. Students show increased confidence, perseverance, focus, and the ability to control hand movements in the drawing process.

Thus, the use of the Zentangle method to realize the application of Jean Piaget's constructivism theory is able to produce a comprehensive approach because it involves cognitive, affective, and psychomotor aspects in students. As a result, art learning becomes more meaningful, able to increase learning motivation and self-exploration, as well as improve the quality of students' learning and work.

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