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Out-of-school Art Curriculum Design based on Piaget's Cognitive Theory

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Abstract: The development of children's art programmes plays an important role in implementing national policies on aesthetic education, advancing the development of aesthetic education curricula and promoting the holistic development of children. At every age we see physical development, cognitive, emotional and social development, and children cannot develop without the influence of art education. Based on Piaget's four-stage theory of cognitive development, this paper designs an art curriculum for children of all ages to address existing problems with out-of-school children's drawing activities.

Keywords: Pilger's Cognitive Development; Out-of-school Art; Art Curriculum Design.

1. Introduction

Children's art has gained widespread attention with the importance people place on education. Off-campus art education in the form of studio teaching has sprung up and spread across the country. However, many art training institutions were not originally established with the intention of cultivating a group of art talents with practical and innovative abilities; their focus is more on the economic profit behind the development of the curriculum, which has caused many problems in out-of-school art teaching. As of May 2022, there were 2,319 studies on the China Knowledge Network on aesthetic education courses, but only 185 relevant literatures on out-of-school art courses, which means that the emphasis on out-of-school art courses in China is relatively low, and at the same time, the research results on art courses in recent years have mainly focused on school-based art in universities, primary and secondary schools, etc., while studies involving out-of-school art courses have been paid for. The design of an out-of-school art curriculum based on Pilger's theory of cognitive development has practical significance and value.

2. Piaget's Four-stage Theory of Cognitive Development

Piaget divided children's cognitive development into four stages: the perceptual-motor stage, the preoperational stage, the concrete operational stage and the formal operational stage. Piaget believed that all children go through these four stages at different rates and that when they reach a new stage, new mental abilities emerge and the complex world is interpreted in a new way as a result of the emergence of these new mental abilities. Children move through these four stages at different rates, depending on their circumstances and environment, but they are never likely to skip one stage and reach another level of cognition. The same behaving individual may sometimes engage in several different stages of cognitive behaviour at the same time, but this phenomenon is also often evident at the transition from one cognitive stage to a new one.

2.1. The Sensorimotor Stage

The sensorimotor stage is the stage of cognitive development of infants between the ages of zero and two years. Children in the sensorimotor stage have a distinctive cognitive characteristic: they rely on movement to develop schemata, mainly through visual, tactile and auditory sensations and hand movements. The sensory and motor behaviour of the mind, which is at first only a simple neurological reflex, becomes increasingly complex through a series of learning sessions, gradually progressing from simple physical movements to complex mental activities. At the beginning of this phase, the neonatal period, the infant is able to perform only a few reflexive actions. The world is known through sensorimotor contact with the surroundings, i.e., through the actions he takes on objects and the results of these actions. This means that the infant adapts to the external environment by means of sensory and perceptual movements alone. At this stage the infant forms the cognitive structure of the action format. When the infant reaches six months of age, sitting and crawling become behaviours within their reach and purposeful body movements begin to emerge, such as expressing ideas by shivering, licking their tongues and reaching for their hands.

2.2. Pre-operational Stage

The preoperational stage refers to the cognitive development of children between the ages of two and seven. Piaget's use of the term 'egocentrism' to characterize the thinking of children at this stage is not inherently 'selfish', but simply reflects the fact that children at this stage are unable to take into account the thoughts of others when interpreting problems, and can only see the situation from their own standpoint. They can only see the situation from their own standpoint. In other words, children at this stage of cognition can only make subjective assessments of the world, but cannot analyses it objectively. Children develop symbolic representational schemata through language, imitation, imagination, symbolic play and symbolic drawing. Their knowledge still depends to a large extent on their own perceptions.

2.3. The Concrete Operational Stage

The concrete operational stage refers to the stage of cognitive development of children between the ages of seven and eleven. Children in this stage tend to be characterised by two things: 'de-ego-centredness' and 'constancy'. At this stage of development children begin to learn to take into account the views of others, to stop judging right and wrong entirely on the basis of their own feelings, and to acquire the ability to see through external phenomena to their inner core and to make reasonable judgements. Piaget uses the term concrete to define the nature of this kind of thinking, in contrast to the more hypothetical thinking of adolescents and adults. Children are able to reason about objects and the relationships between them, but have difficulty understanding hypothetical statements and propositions. Children's thinking in this period usually focuses on relationships between adjacent or related things, rather than between any two or more things.

2.4. Formal Operational Stages

The formal operational stage refers to the cognitive development of young people aged eleven and above. At this stage of development, the individual has reached a relatively high level of thinking and a mature way of thinking, where children can separate form from content in their minds and can think logically, away from concrete things, based on assumptions. What grows after this stage is often only the variety of knowledge acquired during the accumulation of life practices and learning, and cannot continue to improve the way of thinking.

3. Design of Extra-Curricular Art Programmes based on Piaget's Theory of Cognitive Development

3.1. Problems with Out-of-School Children's Painting Activities

With the advent of the era of aesthetics for all and the deepening of the teaching reform, more and more families are aware of the importance of art education for children's future development and are beginning to focus on cultivating their children's painting ability. The author has visited Bengbu City's Bengongshan District on several occasions and found that some of the children's art studios lacked the childishness and novelty that children at this age should have in their paintings, and that the teaching was heavily typecast, neglecting the creativity of the students. For example, in Figures 1 and 2, the children's paintings are similar in their expression of the whale and the colour composition is basically the same, with a lack of creativity. Children and adults have very different views of the world at different stages. In the specific act of painting, adults focus on the reproduction of objective reality, while children's paintings are more concerned with the expression of subjective reality, and they express the world as they see it with their brushes. In this article, we will discuss how to guide children's imagination and creativity in art education, and design a four-stage children's painting curriculum in response to the phenomenon of 'mature children's painting' in some children's studios.



Figure 1. Classmate 1's Ukiyoe painting



Figure 2. Classmate 2's Ukiyoe painting

3.2. Children's art curriculum design under the four-stage theory

3.2.1. Art initiation in the Perceptual-Motor Phase

Children at this stage lack the ability to think and have no systematic mental expression, often developing schemata through movement in order to acquire cognitive skills. For infants and toddlers in the perceptual-motor stage, early childhood teachers can provide relevant experiences based on guided perceptions of their surroundings, emotional and affective experiences, and language accumulation.

Visual training can be conducted from zero to three months of age, for example, by placing brightly coloured objects in front of the baby's eyes and moving them slowly to stimulate visual development; auditory training can be conducted from four to six months of age, for example, by using bells or objects that can make sound to make soft sounds next to the baby's ears, so that the baby can turn to the direction of the sound source when hearing the sound to stimulate auditory development; from seven to nine months of age At seven to nine months, infants can be taken outdoors to experience various textures of surfaces, such as wet grass, warm sand and smooth stone paths, to develop the sense of touch through the experience of different textures of surfaces. Between the ages of one and two years, children have some accumulation of language, auditory, visual and tactile experiences, and can also read picture book stories and view the vibrant colours and pictures in picture books to stimulate reading interest and colour perception.

3.2.2. Course Design for the Pre-Computing Phase

Piaget considered the pre-school and early school years to be a very important stage in the education of children between the ages of two and seven. Preschoolers are curious about the world and are often self-centred, using all discoverable

objects to give vent to their feelings. One of the best ways to stimulate children's curiosity and imagination is to guide them in their exploration of natural phenomena and scientific knowledge. Teachers can stimulate children's creativity by consciously helping them to perceive phenomena and guiding them through practice, using paper pieces to tear, patch and scribble to improve their hands-on skills. The self-centredness of the children at this stage allows for a self-expression component to be added to the curriculum.

The curriculum is as follows and the topic for this teaching design is 'Dragon Boat Festival Zongzi'. Guiding is the core approach to the whole teaching process and the curriculum is designed to promote observation, reflection and practical communication through guidance. "The curriculum aims to promote children's ability to identify, analyse and solve problems, as well as to improve their imagination and expression.

"In the 'Think' session, teachers use their own lesson plans to ask children extended questions related to the theme and to stimulate their thinking potential. The teacher brings out the picture book story 'Dragon Boat Festival' and introduces the theme with a traditional Chinese festival, guiding the children to look at the picture book with questions and, after sharing the story, asking them to open their minds: 'Which great person in Chinese history is commemorated on the Dragon Boat Festival? What traditional activities do we have on Dragon Boat Festival?" In this session, children will learn about the historical origins of the Dragon Boat Festival, learn about heroes and figures in history, and expand their knowledge.

"In the "Look" session, the teacher shows the children the Dragon Boat Festival exhibits prepared in advance, using language and objects to guide them in their observations and thinking. What about this duck egg?" The children's observation of objects stimulates their vision, strengthens their concentration and enhances their observation skills.

The "do-it" session focuses on developing children's hands-on skills. As shown in Figure 3, teachers and students use different materials to explore the making of dumplings and other foods, promoting children's hands-on skills and developing an interest in drawing at the same time. During the teaching process, the teacher stimulates children to think outside the box through guided questions such as "What flavours of dumplings have you eaten? Would you like to make your own unique dumpling?". The teacher uses guided questions to stimulate children's thinking.

"In art teaching, the teacher should abandon the patterned teaching conventions that require pupils to draw using a set number of steps. In the process, teachers should guide students to express themselves. However, in the 'drawing' section, for children aged two to four years, teachers can also provide some demonstrative teaching, such as teaching correct brush grip, colour matching and so on. The teacher can guide the children in looking at the plate material and asking: 'What patterns or designs can you put on the plate? How would you dress up your little plate?"

"Talking about it is a relevant addition to the curriculum for this period. Children in the pre-operational stage are centred on their own feelings and they are not yet able to separate themselves from the world very well. Children assign their feelings to all inanimate objects. Therefore, through 'talk about it', children share and express the images they have created. Children at this stage do not have a stable logic and their thinking is rather diffuse. In the sharing session, the teacher can use keyword prompts to lead the students to describe their creative inspiration and the specific content of the picture, which not only helps to improve the children's language skills, but also helps to train their thinking logic.

3.2.3. Course Design for Specific Operational Phases

Piaget believed that during the concrete operational stage, children are no longer entirely centred on their own feelings and begin to learn to see things from the perspective of others. For children in this period, the main body of the curriculum should focus on guided thinking. This means that a theme is defined and the child creates something within this context. The Thinking Art approach to drawing neither places restrictions on how children can draw nor imposes rules on the use of materials, but focuses more on the development of the child's unique aesthetic, creative abilities and individual personality.

The curriculum is as follows. The subject of this teaching design is 'Swinging'. It is completed by thought leadership, knowledge extension and creative drawing. Firstly, by showing pictures of different scenes, students observe the picture material while the teacher guides the children's thinking, "Where would the scene be where the swing is? For example, a park, a neighbourhood, a forest, a school, etc.?" Next the children are asked "Do you know how the swing can be swung higher?" Introduce life knowledge and expand on it, "When we swing, we stand up when the swing reaches its highest point, and we gain more potential energy due to the rise of the body's centre of gravity, and crouch down during the fall, and we gain more speed when we fall to the lowest point. After the children's minds have been gradually expanded, the teacher needs to teach further art knowledge by presenting the structure of the swing and asking "Have the children noticed that the support of the swing is triangular?" "Think about it, what are the characteristics of a triangle?" With the guidance of Thinking Art, the children will have plenty of motivation to create their own paintings, and each child's picture will be unique.

By stimulating children's imagination and divergent thinking, Thinking Art allows each student's unique creative characteristics to be reflected in their drawings. Afterwards, the teacher teaches drawing knowledge from surface to surface according to the thinking characteristics of different children's drawings, gradually guiding children to improve their drawing expression ability and form their own unique style.

3.2.4. Course Design for the Formal Computing Phase

After the age of twelve, children are beginning to develop logical reasoning skills and are able to make good inferences from phenomena. Children at this stage enter a mature realistic phase, where they become more three-dimensional and spatially aware, have their own understanding and thinking about objective things, and their powers of concentration are increasing, but children at this stage also vary greatly as individuals, with different bases of modelling ability. The art curriculum can be trained in aesthetic analysis, spatial structure, modelling fundamentals, modelling logic and colour composition to develop children's figurative thinking, aesthetic ability, inductive skills and expressive abilities.

When sketching and creating, we often find ourselves observing scenes that are very different from our perceptions. The topic of this teaching design is 'Methods of Observation in Life Drawing'. Firstly, we discuss with students the conflict between observation and common sense, for example, the

length of our fingers can vary from different perspectives, so when we are sketching, we may also observe the situation that the thing is different from our perception due to the different perspectives. Secondly, the teacher teaches and demonstrates important methods in sketching, squinting, stacking strokes, consolidating the method of drawing blind and feeling the three main surfaces formed by objects affected by light sources. Students are trained to sketch through what they have learnt. Students will improve their spatial imagination and develop their generalization and modelling skills.

4. Conclusion

As art education is gradually being taken seriously, art education outside of school is becoming more and more recognized by parents. Each child is unique and teachers should encourage students to express themselves, unleash their imagination and creativity, and express their emotions and spirit. This should be evident in the teaching process in the form of natural transitions, and teachers should design and assign lessons that take into account the physical and psychological characteristics of students at different ages. Through visits to local extra-curricular art training institutions, the main problems faced by today's studios are analyzed and a curriculum designed for each age stage of children's development, with the expectation that extra-curricular art training institutions will enable children to gain a sense of beauty when they are educated.

References

[1] Sara Ma. Research on Piaget's psycho-logic [D]. Hebei University, 2012.

[2] Huang Wensheng. Moral Operations: An Exploration of Piaget's Theory of Moral Psychological Development [D]. Hunan Normal University, 2006.

[3] Zhou Jiaojiao, Zhu Hua. An introduction to the significance of Piaget's cognitive development theory for contemporary education and teaching [J]. Academic Theory,2017(08):172-173.

[4] Zeng Xiangfang. Early childhood education should be carried out in a timely and reasonable manner[J]. Journal of Higher Correspondence Education (Philosophy and Social Science Edition),2007(05):74-75.

[5] Xiao Yu. An introduction to children's art education [J]. Contemporary Education Practice and Teaching Research (Electronic Journal),2017,(11):845.

[6] Chen Xueqiong." Early education",should be a source of happiness for children[J]. Wish you health,2018,(7):50-51.