Pedagogy For Developing The Cognitive Abilities Of The Primary Students

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ABSTRACT

Piaget's theory has had a major impact on the theory and practice of education. It has helped to create a view where the focus of attention is on the idea of developmentally appropriate education. This refers to an educational with environments, curriculum, materials and instruction that are consistency with student's physical and cognitive abilities as well as their social and emotional needs. Some general suggestions include: The use of concrete props and visual aids, such as models and/or time lines. Facilitate learning by using familiar examples to explain complex ideas, such as a story problem in math. Give students the opportunities to classify & group information, use outlines & hierarchies to facilitate assimilation of new information with previously learned knowledge. Present problems that require logical analytical thinking, "brain teasers" are a great way to incorporate this. The educational implication of Piaget's theory is the adaptation of instruction to the learner's development level. It is important that the content of instruction needs to be consistent with the developmental level of the learner.

The teacher’s main role is the facilitation of learning by providing various experiences for the students. "Discovery Learning" allows opportunities for students to explore and experiment, while encouraging new understandings. Opportunities that allow learners of different cognitive levels to work together often help encourage less mature students to advance to a higher understanding of the material. One future implication for the instruction of students is the use of hands on experiences to help students learning.

Key words: Piaget’s stages, logic, methods, models, suggestion, teaching implications.

INTRODUCTION

The transition into the school-age years coincides with a shift from an egocentric way of thinking – which is not to be confused with selfishness, but rather a child’s inability to put themselves in other people’s shoes – to a more mature, perceptive, and imaginative way of thinking. Throughout this developmental phase, the child will demonstrate a genuine enthusiasm for learning new concepts, make strides in gaining self-confidence, and develop the necessary skills to understand the world and people around them. At age 8, they will be able to properly articulate their feelings, a range of ideas, and effectively solve problems through dialogue. Jean Piaget proposed stages of cognitive development through which children and adolescents proceed based on maturation and experience. They are: sensor motor stage, preoperational stage, concrete operations and formal operations.

LOGIC

It is characterize into two ways:
- Inductive logic: It involves thinking from a specific experience to general principles.
- Deductive Logic: Using a general principle to determine the outcome of specific events.

Young primary – aged children can do the following:
- Can tell left from right.
- Can able to speak and express themselves.
- In school, they share about themselves and their families.
- During play, they practice using the words and language they learn from school.
- They start to understand times and days of the week.
- They enjoy rhymes, riddles and jokes.
- Their attention span is longer.
➢ They can follow more involved stories.
➢ They are learning letters and words.
➢ By six, most can read words or combinations of words.

INFORMATION PROCESSING MODEL:

Sensor motor Period: Activities for Infants and Toddlers:
The term "sensory motor" comes from the child understanding their world largely through their senses for their first 2 years. This stage is characterized by the lack of language and internal representation. It focuses on the reflexes that the child is born with such as sucking, reaching and grasping. In this stage of development the child eventually develops primary circular reactions, which are activities centered on the child’s body and repetitious in nature. Eventually, children develop the coordination of separate activities and the evolution of language. A final achievement in this stage is recognizing cause-and-effect relationships.

▪ Provide a rich stimulating environment.
▪ Allow the child to play with toys that squeak when squeezed.
▪ Another example of a toy is a rattle; when the baby shakes a rattle it makes noise.
▪ Playing peek-a-boo is another good example of a fun activity for children around this age.

Preoperational Period: Activities for Toddlers and Early Childhood:
This stage is in effect when children are about 2 to 7 years old. This stage is characterized by the inability to understand all the properties of classes. Transductive reasoning is also characteristic of this age groups thinking. Transductive reasoning involves making inferences from one specific to another based on faulty logic. Egocentrism and conservation are also characteristic of this age group. Egocentrism is the inability to take another persons point of view into account. One way to help children overcome egocentrism is to help them face another person’s perspective by putting themselves in the others “shoes”.

▪ One way to do this is by playing dress up and encouraging the child to take on a character.
▪ Sometimes children in this age group enjoy playing house. This is also a good activity because they are playing different roles that they have observed in their own lives.
▪ Hands on activities should also be facilitated at this time.
▪ Encourage children to play with toys that change shape (ex: sand, clay, water) because this will help them move towards the concept of conservation.
▪ Children need physical, hands on practice with facts and skills needed for development.
▪ Use cut-out letters to build words.
▪ Avoid lessons that are very different from the child's world. And steer away from using workbooks or paper and pencil activities very often.
Concrete Operations: Activities for Middle Childhood

In these stage children evolve from prelogical, egocentric thinking to a more rule-regulated type of thinking. Some of the rules of logic include reversibility, identity, and compensation. One activity that a child at this age would enjoy is a cooking activity with their mom or dad. If you get creative you can incorporate several components of Piaget’s theories into this activity. Baking involves measurements, which would be useful to the concept of conservation. Measuring cups come in all different shapes so it would be fun to measure the exact same measurement using different types of measuring utensils. Also, the ingredients could be classified into different categories such as the dry ingredients and the wet ingredients and so on. Numbers and seriating come into play with the distinct steps in the directions. Children around this age group usually really enjoy helping out in the kitchen, especially if it’s baking something fun like cookies, so it turns into a great learning opportunity.

✓ Give children the chance to manipulate objects and test out ideas.
✓ Do simple experiments, with participation of the students.
✓ Avoid dealing with more than three of four variables at a time.
✓ Reading selections should have a limited number of characters.
✓ Experiments should have a limited number of steps.
✓ Students should have practice classifying objects and ideas on complex levels.
✓ Have student’s group sentences on a piece of paper.
✓ Use analogies to show the relationship of new material to already acquired knowledge.

Formal Operations: Activities for Adolescents

This period is characterized by applying their logic directly to real objects or situations.

At the beginning of this stage:
❖ Teachers should continue using strategies and materials used in the concrete operations stage.
❖ Use charts and illustrations, as well as incorporate new more sophisticated graphs and diagrams.
❖ Give step by step explanations and materials
• Students need the opportunity to explore various hypothetical situations.
• Children in this stage should be encouraged to work in groups in school to explain and discuss hypothetical topics.
• Have them write a short story on a hypothetical topic such as what life would be like in outer space. This allows the child to apply their new creative aspect.
• Students should also be encouraged to explain how they solved a problem.
• Students could work in pairs; one is the listener, while the other is the problems solver. The problem solver works the problem out loud, while the listener checks to see that all steps are followed and seem logical.
• Teachers could put a few essay questions on a test, which allows students the opportunity to give more than one final answer. Teachers should try to teach broad concepts, rather than just facts.
• Use materials and ideas relevant to the students.
• Use lyrics from a popular song to teach poetry.

There are four main teaching implications drawn from Piaget's theory (Slavin, 2005):

1. A focus on the process of children's thinking, not just its products:
   Instead of simply checking for a correct answer, teachers should emphasize the student's understanding and process they used to get the answer.
2. Recognition of the crucial role of children's self-initiated, active involvement in learning activities:

In a Piagetian classroom, children are encouraged to discover themselves through spontaneous interaction with the environment, rather than the presentation of ready-made knowledge.

3. A de-emphasis on practices aimed at making children adult like in their thinking:

This refers to what Piaget referred to as the "American question" which is "How can we speed up development?". His belief is that trying to speed up and accelerate children's process through the stages could be worse than no teaching at all.

4. Acceptance of individual differences in developmental progress:

Piaget's theory asserts that children go through all the same developmental stages, however they do so at different rates. Because of this, teachers must make special effort to arrange classroom activities for individuals and groups of children rather than for the whole class group.

Around age 6, children begin to change the way they think about the world. They leave behind the preschooler's egocentric thinking and begin developing more mature ways of understanding. A typical first-grader is able to perform simple addition and subtraction, and he or she usually begins to read and write sentences. These tasks require that the child consider information from several sources, evaluate it, and come up with an interpretation. These cognitive abilities continue to evolve over the next 4 to 5 years as the child does increasingly complex, sequential, and symbol-based tasks, such as interpreting the context of a paragraph and composing stories. With these new cognitive skills, the appreciation of humor and word games increases. Board games are a great way to enhance cognitive development. Games that use memory skills, such as checkers, tic-tac-toe, and hangman, are especially useful. Don't worry if your child "needs" to win games while playing with you. But also help your child learn games that he or she can play alone, such as memory matching.

Children this age are also now able to think of themselves in more sophisticated ways. This more advanced thinking brings about comparisons to others, self-examination, and changing self-concept and self-esteem. Still, reasoning is immature. In the kindergarten and early elementary school years, children's reasoning is tied to the here and now. They are not good at problem solving because it requires abstract thinking, the ability to imagine other perspectives or alternatives, and the ability to anticipate needs and actions.

CONCLUSION

Cognitive development in school-age children has been one of the most active areas of research in developmental science. Yet the range of issues investigated has been relatively narrow and based primarily on Piaget's theory of cognitive development, school-related concerns about the testing of intelligence and achievement, and behaviorist theories of conditioning and learning and, more recently, information-processing theories.

Today many cognitive-developmental scholars are moving toward a broader, more integrative orientation, emphasizing relationships among the traditional categories for behavior (cognition, emotion, social behavior, personality, and so forth) and constructs that highlight the interaction or collaboration of child and environment. There has also been a growing emphasis on constructing and using methods and statistics that allow direct tests of cognitive-developmental hypotheses, in place of traditional methods and statistics, which often do not allow appropriate tests.

REFERENCES

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