**Mindful learning through cognitivism**

Learning through cognitivism is a process of how learners process, store, and retrieve information. It focuses on the mental processes involved in learning rather than just the behaviors seen as a result. In cognitive learning theory, learners actively engage in their learning process, connecting new information to prior knowledge and organizing it meaningfully in their minds.

To understand this learning our group “mindful learners “is presenting a model of learning mathematical fractions through customizing pizza.

The automata project reflects- Jean Piaget’s stages of cognitive development, from sensory explanation to complex logical reasoning.

1. Sensorimotor stage (0-2) years: At this stage, children interact with the world through their senses and motor skills. Here in this project, a young child learns about the properties of pizza, like texture, taste, and smell through direct sensory experience and trial and error.
2. Preoperational stage (2-7) years: In this stage, children start to use symbols and languages but are still not fully logical. Pizza example: the child can understand the idea of dividing a pizza into equal parts, such as sharing it in half. Also, the child can recognize fairness and can understand sharing equally, though they may not be precise with exact fractions.
3. Concrete operational stage (7-11) years: At this stage, children develop logical thinking about concrete objects and can follow multi-step instructions. They understand conservation and can solve hands-on problems, though they will struggle with abstract things. Pizza example: a child can follow a pizza recipe with specific measurements, like adding 1 cup of tomato sauce, ½ cup of pepperoni, and ¼ cup of onions. The child can understand and perform operations like measuring and following a sequence of instructions.
4. Formal operational stage (11 years to adulthood): This stage is marked by the ability to think abstractly, reason logically, and consider hypothetical scenarios. Individuals can think about complex ideas and use abstract reasoning. Pizza example: a child/young adult can interpret data and use abstract concepts. For instance, they might use a pie chart to represent the weekly pizza orders in a shop. They can interpret and analyze data and understand proportions and fractions. Such as a pie chart for weekly pizza order data. Half the orders on Saturday, 1/8 on Sunday, and ¼ on Monday.

**SUMMARY OF COGNITIVE DEVELOPMENT AUTOMATA STAGES**

(stage description input processes output)

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| Sensorimotor stage  (0-2) years | Interaction through senses and physical play | Sensory explanation | Awareness of pizza's tangible features |
| Preoperational  (2-7) years | Basic symbolic understanding and sharing | Divide pizza | Divide the pizza into equal parts |
| Concrete operational  (7-11) years | Logical steps with tangible tasks | Recipe steps and measures | Follow the recipe accurately to make a pizza |
| Formal operational  ( 7 to adulthood) | Abstract reasoning and data analysis | Pizza order data for a week | Constructs a pie chart |

This sequence model shows how cognitive abilities grow from sensory experience to advanced reasoning. It demonstrates how these abilities enable progressively complex tasks about pizza making and collecting data based on order throughout the week.