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Creative Imagination Skills of Preschool Students: Meta Analysis of Antecedent Factors to Encourage Students Achievement

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Abstract
The purpose of this study was to design active e-learning models and applications to develop the creative imagination skills of preschool children. However, before the real study can be done the researcher has been doing a meta analysis study on creative imagination skills. This meta analysis study was include two objectives. Therefore, (1) to defines the creative imagination skills and (2) to identify the antecedent factors of creative imagination skills that influenced the achievement amongs the pre-school students. Through the meta analysis study, the researcher has been analyzed about fifty articles that related to this research. It is important to do a critical review before proceed to the real study, so that the researcher will have a clear picture about the research. The main contribution of this meta analysis study is to get a brief and clear information on the creative imagination skills among the preschools students in Malaysia.
Keywords: Creative Imagination Skills, Preschoolers, Antecedent Factors

Introduction

Creative imagination has been identified as the instrument of the act of discovery (Rugg, 1963), acts as the power of problem solving and synthesis of the human mind by the recombining of past life experiences in the creation of new images and image patterns (Wilner, 1975), and can be describes as a skill of seeing the imaginative possibilities, understanding the relations between two concepts and seeing the dynamic force between them (Courtney, 1968). According to Vygotsky (2004), the development of a creative individual who strives for the future is enabled by creative imagination embodied in the present. The European Union had recognised creative imagination by emphasizing the role of education system in the development of creativity and innovation in a lifelong learning perspective (European Union, 2008).

Garcia and Mukhopadhyay (2019) states that creative imagination appears to be active from an early age, instrumental in learning and problem-solving strategies and can be discovered in the products of creative life especially children. It can be observed during children's play because the children tend to explore imaginative creative scenarios which are interesting and meaningful (Moller, 2015). Children may employ creative activities and imaginative

playfulness (Schousboe, 2013) to make everyday activities enjoyable (Alcock, 2007; Hedegaard, 2012) from a broader perspective to experience situational involvement (Olwig, 2011). Vygotsky (1930) also once said, "the more a child sees, hears, and experiences, the more he knows and assimilates, the more elements of reality he will have in his experience, and the more productive will be the operation of his imagination".

Imagination is considered as creation of something new with capacity to combine, process and create new representations and new behaviour (Vygotsky, 2005). Vygotsky's basic proposition reveals how children can use creative imagination to make sense of this world (Garcia & Mukhopadhyay, 2019) through the integration of neurobehavioral functions that employ imagination (Lindqvist, 2003). Imagination also has been mentioned as one of the aspects of creativity in current researches that involves the theories of creativity and it defines creativity during preschool years primarily through curiosity and imagination (Maksić & Pavlovic, 2011). Therefore, nurturing child imagination is the most promising way of building up a creative personality and contributing to individual creative production in the future (Pavlovic & Maksic, 2013).

Research on children's fantasy has began since 1980s and 1990s underscore how imagination could control a child's understanding of corresponding aspects of reality (Morison & Gardner, 1978; Carey, 1985; Siegler, 1996; Stanovich, 1994). Torrance (1966) has made great contributions to the study of creativity by designing a test to evaluate the four basic skills that reflect creativity which are fluency, flexibility, originality, and elaboration. The Torrance's Creative Thinking Test (2008) which is based on Guilford's theory of intellect is a useful tool to evaluate both quantitative and qualitative aspects of divergent thinking. According to Gundogan et al., (2013) children may unfold their creative imagination at different ages in different ways, and a drama program is effective on developing the creative imagination of children.

Therefore, an experiment had been conducted on 60 children (30 from the age group of 10, 30 from the age group of 13) from two primary schools with equal socio-economic backgrounds. The findings suggested that children from age group 10 produced more original ideas and did more elaborate drawings than children from age group 13. The observation also showed that creative ideas by girls are higher in number than boys. Overall, it can be said that a drama program is more effective on younger age groups, and drama programs are suitable to be implemented in education programs to develop creative imagination from early ages. Meanwhile, Garcia and Mukhopadhyay (2019) had conducted a test on children's creative imagination by giving tasks that involves narrative and drawing abilities for participants between the age of 8 and 12 years.

The results suggested that creative imagination causes variations in specific aspects of creativity such as narrative and graphic improvisation, and modifies 'general' creativity as understood from the perspective of a developmental psychology of learning abilities in growing children within the defined age group. Creative imagination also regarded as a component of the creative competence for primary school students that can be stimulated and improved with the help of a psychological-pedagogical influence during the integrated classes of the aesthetic course carried out as part of extracurricular activities of children (Dmitriev et al., 2020). Meanwhile in Malaysia, research on children's creative imagination

still new and not extensively been explored. Thus, a study has been conducted to create more awareness on the importance of cultivating creative imagination skills among young children.

Furthermore, the meta analysis for this article will be answer two research questions

1) What is the definition of creative imagination skills and how to measures?
2) What are the antecedent factors of creative imagination skills that influenced the achievement amongs the pre-school students?

Methodology

This study will be conducted quantitatively and qualitatively by using questionnaires, observations, interviews and document analysis and guided by a research development approach that goes through three phases, namely application needs analysis, model design and activities through Interpretive Structural Modeling techniques and test models and applications by using Fuzzy Delphi Method. For the first phase, sample of study was 100 preschool teachers under MOE at Central Zone which Perak, Selangor, Putrajaya and Negeri Sembilan. For the second phase, Interpretive Structural Modeling (ISM) was used to get data from 20 selected expertises in the field, curriculum and preschool education about their opinions and agreements. The data was used to determine suitable contents, application and active e-learning activities to enhance creative imagination skills of MOE's preschool children.

There were two instruments used in this phase namely lists of active e-learning activitiy frameworks to enhance children's creative imagination which obtained from literature references, and software of Interpretive Structural Modeling which build by Sorach Incorperation named Concept Star. Next, phase three tested the usability of active e-learning models and applications by using Fuzzy Delphi Method (FDM). Evaluation of the models were divided into three parts which application suitability, convenience activitiy and model usability. Instrument used was a set of questionnaire that had four parts namely demography, selection of the suitability of e-learning applications, selection of suitability of e-learning activities and usability of the model. A pilot study was conducted first before the questionnaire was randomly distributed to selected preschool teachers.

However, before proceed to the real study a meta-analysis on creative imagination skills of preschool students and the antecedent factors has been reviewed and discussed in this article. In summary according to Cohen et al (2018) meta-analysis is research that involves an in-depth survey related to an issue that has been selected and analyzed, it involves combining the results of existing studies and taking them into account to find the main effect. Based on the method proposed by Webster and Watson (2002) was adapted in the process of searching and selecting articles related to be analyzed. Some databases subscribed to by university libraries such as EBSCOHost, Science Direct, Proquest, and Sage were used to search for relevant articles. Also, the engine Google Scholar and Google Search are also used to ensure a more extensive search done. Articles related to creative imagination skills of preschool students have been downloaded for analysis. The article has been systematically analyzed to answer research questions that have been set.

Findings and Discussion

The results of a meta analysis of reading material from a previous literature review will be discussed based on the the following research questions.

RQ1: What is the definition of Creative Imagination Skills and how to measures?

Preschoolers love to express themselves and their ideas using crayons, paints, playdough, clay, scissors, glue and paper. The child will begin making basic shapes and might enjoy experimenting with texture, space and colours (Xamidovna, 2021). For example, preschoolers often draw houses with shining suns above the roof. To answer this question, the data has been summarized from the past researchs. Imaginative and creative play is how children learn about the world. During imaginative play, children manipulate materials, express themselves verbally and non-verbally, plan (intentionally or unintentionally), act, interact, react, and try different roles (Mirzayeva, 2021). Having an imagination is the ability of the mind to be creative and resourceful. Creativity is children's unique response to all that they see, hear, feel and experience. A child's individual responses to materials, experiences and ideas inspire their creativity and imagination (Erkinovna, 2022). Imagination helps boost kids' social, emotional, creative, physical, linguistic and cognitive development is some crucial skills children will take into adulthood. Most importantly, playing pretend is an enjoyable activity. Kids will be having too much fun to notice they're learning vital life skills.

Play fosters creativity and imagination in preschoolers, which is important for overall development. It is because, preschoolers have vivid imaginations. They often enjoy pretend games, art, craft and music. For examples, play ideas to stimulate preschooler imagination include reading, nature walks, busy boxes, dress-ups, puppet play and more. In a classroom, child's creative activity can help teachers to learn more about what the child may be thinking or feeling. Creativity also fosters mental growth in children by providing opportunities for trying out new ideas, and new ways of thinking and problem-solving (Jankowska et al., 2019). By giving children various experiences they will learn to concentrate and express and control their feelings and thinking differently when solving problems. Whilst, creative development includes a developing imagination and imaginative play that will responding to experiences and expressing ideas, exploring media and materials.

To asses the creativity among the preschoolers, the reasearcher will be used the TCAM test. It consists of the behavioural observations of four different tasks. The TCAM test defines the creative thinking abilities, fluency, originality and imagination, as increasing a persońs chance to act creatively (Torrance, 1965, 1981). The TCAM test also will assumes that divergent thinking is predicting creativity. Torrance's TCAM test is a classic test of early childhood creative thinking in action and movement. Even though it is not a new test, according to (Torrance, 1965) it is still a valid and reliable instrument to measure creative movement in preschool children. In the TCAM test, the environment and tasks are considered in the test instructions. According to Torrance (1981), there are four important issues to consider when measuring the creativity of preschool children. Firstly, moving is a more appropriate way for preschool children to be creative than, for example, writing or verbal answers. Secondly, there should be a warm up and motivating procedure. Thirdly, tasks should make sense to children and are important in the lives of children. Fourthly, tests should be easy to administer and score, and they should be natural to experiences of children and not take too much time. In the TCAM test there are three activities that measure fluency and originality. In Activity 1 (How many ways?), children are asked to move from a yellow line to a red line using as many ways as they can invent. In Activity 3 (What other ways?), the child is asked to put a paper juice cup in the waste basket using as many ways as they can imagine. In Activity 4 (What

might it be?), the child is asked to imagine how many different things they can do with the paper cup. Fluency is measured by counting different things or ways the children will produce. Originality is measured by scoring 0–3 points to responses that the children will produce.

RQ2: What are the antecedent factors of creative imagination skills that influenced the achievement amongs the pre-school students?

From the meta analysis study also, the researcher found that's there are several antecedent factors which is will influence the achievement among the preschoolers. Creativity and aesthetics are developed through music education, plays and visual arts. Such art activities will provide opportunities for children to explore through the use of various materials and techniques to enhance their imagination and creativity naturally (Wojciehowski & Ernst, 2018). There are several antecedent factors that contribute to preschooler's achievement, they are; (1) the factors which are specific to child (species-specific readiness, maturation, age, intelligence, motivation, general state of arousal and anxiety, physiological state, prior experiences, individual differences, and child psychology) and (2) environmental factors (family, school, teacher, peer groups). However, some scholars (Behnamnia et al., 2020; Karaca et al., 2020; Mukhiddinovna & Mukimovna, 2021) stated that, high levels of creativity and innovation can be hard to obtain from people. There are several factors influencing this, but four of the most important ones are: motivation, leadership, positivity and personality traits. Dongauser et al (2020) propose that personality, intelligence, knowledge, thinking style, motivation, and environment are factors associated with creativity. Though a child may have the innate or genetic ability for creativity (Turdieva, 2021), parents and teachers have roles to enhance and foster creative traits (Trawick-Smith et al., 2011). Garaigordobil & Berrueco, (2011) asserted that family support, availability of learning materials, and social pressures are factors that influence the development of creativity. In addition, the four school conditions for learning include physical and emotional health (Lucchiari et al., 2019) and safety (Marsh et al., 2018); sense of belonging, connectedness, and support (Ernst & Burcak, 2019); academic challenge and engagement; and social and emotional competence for students and adults (Dziedziewicz & Karwowski, 2018). Children's early experiences and relationships in the first five years of life are critical for development. In the early years, these child's main way of learning and developing is through play. Other influences on development include genes, nutrition, physical activity, health and community (Fleer, 2021). Family is almost certainly the most important factor in child development. In early childhood especially, parents are the ones who spend the most time with their children will influence the way they act and think and behave.

Conclusion

Creativity needs to be developed in the early stages of schooling to enable students to discover their hidden potential and potential self-tendencies within themselves. Through certain activities, children can realize their imagination. Activities such as drawing, coloring, making handicrafts, singing, dancing, making sculptures and so on. Especially to pre-schoolers, their minds begin to develop and need to be stimulated with various activities so that they grow and generate a positive and creative mind. Creativity is a continuous process to process information to produce something new and original. The response to environmental stimuli is a factor in the formation of creativity as a way to solve problems and further bring individuals to a better level. Meanwhile, creativity also is the ability to produce

something new from past experiences, where it is in a new form, very broad and covers all aspects of our lives. Children's cognitive excellence can not only be seen in the form of counting numbers, but is still needed in the fields of literature, culture and social and more related to creativity. Pre-schools childrens will enjoy engaging in creative activities. So that, teachers need to be always prepared and make careful plans especially in preparing the materials they want to use for an activity because good planning helps smooth teaching and learning.

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