Creative Arts-Based Basketball Dribbling PowerPoint Instruction for Primary Students Aged 6–8

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Abstract

This study develops an instructional framework integrating creative pedagogy into physical education to enhance basketball dribbling skills among primary school students aged 6–8 years. Using a design-based research approach, the study produced a six-week curriculum program, arts-integrated PowerPoint instructional media, and a conceptual framework linking creative pedagogy with motor skill development. The framework highlights the mediating roles of student engagement, motor coordination, and creative expression. Expert validation indicated high content validity and practical applicability. The findings suggest that integrating creative arts elements, such as storytelling and music, can enhance engagement, motivation, and skill development in physical education. The study contributes to the advancement of creative pedagogy and provides a foundation for future empirical research.

Keywords: Creative pedagogy; Physical education; Basketball dribbling; Fundamental movement skills; Motor learning; Arts-integrated learning; Student engagement; Design-based research

Introduction

Physical education (PE) plays a vital role in children's physical, cognitive, and socio-emotional development, particularly in early childhood, when movement experiences strongly shape later participation in physical activity and sport. A central outcome of PE is the development of fundamental movement skills (FMS), including locomotor, stability, and object-control skills, which are widely regarded as essential foundations for physical literacy and

lifelong engagement in movement. Recent reviews continue to confirm that FMS competence is positively associated with physical activity participation, fitness, and broader developmental outcomes, while also showing that mastery levels among children remain inconsistent across contexts (Piotrowski et al., 2025; Lorenzo-Martínez et al., 2025).

Within the domain of object-control skills, basketball dribbling is a particularly important manipulative skill because it requires the coordinated integration of hand–eye control, balance, rhythm, timing, and spatial awareness. Children aged 6–8 years are at a sensitive developmental stage for refining such skills, and recent meta-analytic evidence indicates that appropriately designed physical activity interventions can significantly improve FMS, especially object-control skills, when practice is structured, engaging, and developmentally appropriate (Yang et al., 2025; Jiang et al., 2025; Zhang et al., 2024).

Despite this, PE in many educational settings still relies heavily on teacher-centered methods and repetitive drills. Although such approaches may provide procedural practice, they often do not fully address children's developmental needs for play, exploration, autonomy, and active meaning-making. Recent research suggests that young learners benefit more from movement experiences that are varied, enjoyable, and responsive to their developmental characteristics, particularly when instruction promotes active participation rather than passive imitation (Liu et al., 2025; Zhang et al., 2024).

To address these limitations, increasing attention has been given to child-centered and creative pedagogies in PE. In this perspective, learning is not treated as the passive reception of information, but as an active process in which children construct understanding through movement, interaction, and exploration. In practice, this means that PE activities should be developmentally appropriate, playful, expressive, and capable of sustaining meaningful engagement. Recent work in movement-based education suggests that integrating music, rhythm, visual cues, and imaginative tasks can enrich children's learning environments and support coordination, participation, and enjoyment (Bernabé-Villodre et al., 2025).

From a motor-learning perspective, effective skill instruction should provide not only repetition, but also variability of practice, progressive challenge, and meaningful feedback. Contemporary synthesis studies show that interventions grounded in motor-learning principles are more likely to improve children's FMS than routine drill-based methods alone. This is especially relevant to dribbling instruction, where learners must adapt control to changing tempos, body positions, and task constraints rather than simply repeat a single movement pattern (Jiang et al., 2025; Zhang et al., 2024).

Motivation is another critical dimension of effective instruction. Recent studies grounded in self-determination theory indicate that learning environments that support autonomy, competence, and relatedness are associated with stronger engagement and more adaptive outcomes in PE. For young children, this means that instructional approaches emphasizing choice, encouragement, creativity, and collaborative interaction are likely to enhance both participation and persistence in movement tasks (Saiz-González et al., 2024; Barbosa Cano et al., 2025).

In the digital era, instructional media have become increasingly important in PE pedagogy. Recent reviews on technology-enhanced pedagogy in PE suggest that digital tools can strengthen student engagement, support learning, and improve motor-skill instruction when they are integrated purposefully into pedagogy rather than used only for content transmission. In this regard, PowerPoint presentations can serve as accessible instructional media by offering visual demonstrations, movement cues, structured progression, and creative prompts for learners. However, the literature also indicates that technology in PE is most effective when paired with interactive and learner-centered teaching strategies (Martín-Rodríguez et al., 2025; Sargent & Casey, 2021).

Although interest in creative pedagogy, FMS development, and technology-enhanced PE has grown substantially, there remains limited research that integrates these strands into a coherent instructional approach for basketball dribbling instruction among young primary students. In particular, there is still a lack of clear frameworks explaining how arts-based and child-centered pedagogy, supported by simple digital media such as PowerPoint, can enhance both engagement and motor learning in children aged 6–8 years. This gap is important because early primary PE requires teaching models that are not only technically effective, but also developmentally responsive, motivating, and feasible for classroom use (Piotrowski et al., 2025; Martín-Rodríguez et al., 2025).

To address this gap, the present study adopts a design-based research (DBR) approach to develop an instructional innovation for basketball dribbling among primary students aged 6–8 years. The study focuses on three interrelated components: (1) the design of a developmentally appropriate curriculum grounded in FMS development, motor learning, and child-centered pedagogy; (2) the development of creative arts-integrated PowerPoint instructional media; and (3) the construction of a conceptual framework explaining how creative pedagogy

may contribute to student engagement and dribbling performance. By integrating current theory with practical instructional design, this study seeks to contribute to both PE pedagogy and early childhood movement education (Jiang et al., 2025; Martín-Rodríguez et al., 2025).

Research Questions

1. Curriculum Design: How can a developmentally appropriate curriculum program for basketball dribbling be designed for primary school students aged 6–8 years, based on the principles of fundamental movement skills, motor learning, and child-centered pedagogy?

2. Instructional Media Development: How can arts-integrated instructional media in the form of PowerPoint presentations be designed to combine creative arts elements with physical education activities in order to promote student engagement, creativity, and active learning?

3.Conceptual Framework: What conceptual framework can be developed to explain the relationship between creative pedagogy and motor skill development, particularly the mediating roles of student engagement, motor coordination, and creative expression?

Research Objectives

The objective of this study is to develop and conceptualize an innovative instructional design that integrates creative pedagogy within physical education to enhance basketball dribbling skills among young learners. Specifically, the study seeks to:

1. Design a developmentally appropriate curriculum program for basketball dribbling instruction among primary school students aged 6–8 years, based on the principles of fundamental movement skills, motor learning theory, and child-centered learning.

2. Develop arts-integrated instructional media in the form of PowerPoint presentations that combine creative arts elements with physical education activities, aiming to promote engagement, creativity, and active learning.

3. Propose a conceptual framework that explains the relationship between creative pedagogy and motor skill development, highlighting the mediating roles of student engagement, coordination, and creative expression.

Scope of the Study

This study focuses on the design and development of an instructional framework for enhancing basketball dribbling skills among primary school students aged 6–8 years through the integration of creative pedagogy in physical education. The scope of the study is defined in terms of content, population, variables, instructional design, and expected outcomes, as follows:

1. Content Scope: The study is limited to the development of basketball dribbling skills as a fundamental motor skill within physical education. The curriculum content emphasizes basic dribbling techniques, including ball control, coordination, and movement while dribbling. The instructional activities are designed to progress from simple to more complex tasks over a six-week period. Additionally, the study incorporates creative arts elements into physical education instruction. These elements include storytelling, music and rhythm, visual movement patterns, and game-based activities. The integration of arts is intended to enhance student engagement and support holistic development.

2. Population Scope: The target population of this study consists of primary school students aged 6–8 years. This age group is selected due to its critical stage in the development of fundamental movement skills and cognitive abilities. The study focuses on learners with basic or no prior experience in basketball, ensuring that the instructional design is developmentally appropriate.

3. Instructional Design Scope: The study is limited to the design of a structured instructional program and supporting teaching materials, rather than full implementation or experimental testing. The instructional design includes 1. A six-week curriculum program for developing basketball dribbling skills, consisting of two sessions per week, with each session lasting approximately 45–60 minutes, and 2. A series of PowerPoint presentations designed as instructional media, integrating creative arts elements with basketball dribbling activities to support teaching and learning. The PowerPoint materials are designed using an infographic-based approach, incorporating visual elements, interactive activities, and creative tasks to enhance student engagement and understanding.

4. Variable Scope: This study primarily focuses on instructional design variables rather than empirical measurement. The key constructs addressed in the design include:

- Creative pedagogy (arts-integrated teaching strategies)
- Student engagement
- Motor skill development (dribbling ability)

- Creativity in movement

However, the study does not include statistical analysis or experimental validation of these variables, as its primary purpose is design and development.

5. Technology and Media Scope: The study specifically focuses on the development of PowerPoint presentations as the primary instructional media. These presentations are designed to:

- Support teaching of dribbling skills
- Integrate creative arts elements
- Facilitate active learning in physical education

Other forms of digital technology, such as mobile applications or virtual reality, are beyond the scope of this study.

6. Geographical and Contextual Scope

The study is conducted within the context of primary education, particularly in settings where physical education is part of the curriculum. While the design may be applicable in broader contexts, the instructional framework is primarily intended for use in school environments with basic sports facilities.

7. Limitations of the Scope: This study is limited to the design and development of instructional materials and does not include:

- Implementation of the curriculum in real classroom settings
- Experimental testing or evaluation of learning outcomes
- Long-term impact assessment of the instructional program

Future studies may extend this work by conducting empirical research to evaluate the effectiveness of the designed curriculum and instructional materials.

8. Summary of Scope: In summary, this study focuses on the design of a creative, arts-integrated instructional program and supporting PowerPoint materials to enhance basketball dribbling skills among primary school students aged 6–8 years. The scope is limited to curriculum and instructional design, providing a foundation for future empirical studies in physical education and creative pedagogy.

Literature Review

1. Fundamental Movement Skills in Early Childhood

Fundamental movement skills (FMS) are widely recognized as foundational competencies for children's physical development and later participation in physical activity

and sport. These skills are commonly grouped into locomotor, stability, and object-control domains, each contributing to children's movement competence, confidence, and physical literacy. Recent reviews continue to confirm that FMS are strongly associated with children's physical activity, fitness, and long-term health trajectories, while also showing that mastery levels remain uneven across populations and settings (Piotrowski et al., 2025; Yin et al., 2025). Among these domains, object-control skills are especially important in sport-specific contexts because they support participation in activities that require manipulation, coordination, and timing.

Within object-control skills, basketball dribbling is a complex movement task that requires the integration of hand–eye coordination, balance, rhythm, timing, and spatial awareness. The age range of 6–8 years is particularly important for developing and refining such skills because children are transitioning from basic movement patterns to more controlled and coordinated performance. Recent evidence indicates that well-designed physical activity interventions can significantly improve FMS in early childhood, with especially meaningful effects on object-control skills when programs are structured, engaging, and developmentally appropriate (Jiang et al., 2025; Yang et al., 2025). These findings suggest that dribbling instruction for young children should be intentionally designed to support both motor development and sustained engagement.

2. Motor Learning Theory and Skill Acquisition

Motor learning theory provides a useful framework for understanding how children acquire, refine, and retain movement skills through practice and experience. Contemporary evidence continues to support the importance of repeated practice in strengthening movement coordination and control; however, recent studies also emphasize that repetition alone is insufficient unless it is paired with meaningful task design and opportunities for adaptation (Jiang et al., 2025; Zhang et al., 2024). In early childhood PE, effective skill learning depends not only on the quantity of practice, but also on its quality, structure, and developmental appropriateness.

Another key principle is variability of practice. Recent synthesis studies suggest that interventions incorporating varied and context-rich movement experiences are more effective in promoting transferable motor competence than narrowly repetitive approaches. Variable practice helps learners adapt movement patterns across changing situations and supports more flexible control, which is particularly relevant for skills such as dribbling that must be

performed under different tempos, directions, and body positions (Jiang et al., 2025; Liu et al., 2025).

Progressive complexity is also central to motor learning. Tasks that gradually increase in challenge allow learners to build competence step by step while maintaining motivation and reducing frustration. This principle aligns with developmentally appropriate instruction in early PE, where young children benefit from structured progression, guided exploration, and supportive feedback. Recent intervention studies show that when activities are sequenced from simple to more complex forms, children demonstrate stronger improvements in motor competence and participation (Yang et al., 2025; Zhang et al., 2024).

Feedback remains another essential mechanism in skill acquisition. Effective feedback helps learners refine performance, recognize errors, and strengthen successful movement patterns. In PE settings, timely, specific, and constructive feedback is especially important for young learners who are still developing body awareness and motor control. In the context of basketball dribbling, these principles imply that instruction should include frequent practice, varied tasks, progressive challenges, and supportive feedback rather than relying solely on static drill-based repetition.

3. Child-Centered Pedagogy in Physical Education

Child-centered pedagogy emphasizes learners' active role in constructing knowledge and skills through meaningful, developmentally appropriate experiences. In PE, this approach is reflected in active participation, exploration, choice, adaptation, and responsiveness to children's individual needs. Recent literature in child-centered and physical-literacy-oriented education suggests that young children learn most effectively when instruction is physically active, hands-on, and responsive to their developmental characteristics rather than dominated by teacher-led transmission alone (Kretaine & Vecenane, 2025; Liu et al., 2025).

A key feature of child-centered PE is the use of play, exploration, and differentiated task design. These pedagogical features encourage children to engage more fully with movement tasks, experiment with solutions, and develop confidence through participation. Recent work on enjoyment in PE also indicates that meaningful and enjoyable experiences are central to quality learning for young children, and that children's engagement is enhanced when activities are perceived as accessible, enjoyable, and relevant to their interests (Beni et al., 2025). This suggests that child-centered pedagogy is particularly appropriate for early primary learners, who benefit from playful and experiential learning environments.

In the teaching of motor skills, child-centered pedagogy implies that instruction should be adaptable and interactive, allowing children to participate actively rather than simply imitate teacher demonstrations. For basketball dribbling, this means that learners should be given opportunities to explore movement in varied ways, respond to cues, make simple choices, and practice within tasks that are both enjoyable and achievable.

4. Creative Pedagogy and Arts-Integrated Learning

Creative pedagogy refers to teaching approaches that intentionally promote imagination, expression, exploration, and innovation in learning. In recent educational research, arts-integrated and movement-based pedagogies have gained increasing attention because they offer multisensory and expressive learning opportunities that support children's holistic development. In particular, music-and-movement approaches have been identified as valuable pedagogical tools for early education because they connect bodily movement, rhythm, timing, creativity, and engagement in ways that are developmentally meaningful for young learners (del Barrio et al., 2024; Bernabé-Villodre et al., 2024).

Arts-integrated learning can include music, rhythm, storytelling, visual cues, dramatic scenarios, and expressive movement. In PE, these elements can enrich skill instruction by transforming repetitive motor practice into more meaningful and enjoyable experiences. Recent studies indicate that music- and movement-based pedagogies can support coordination, timing, participation, and social interaction, while also increasing children's enjoyment of movement learning (Bernabé-Villodre et al., 2024; Rodrigues et al., 2025). Such features are particularly relevant for early basketball instruction, where children may respond more positively to imaginative and rhythmically structured tasks than to isolated technical drills.

From a motor-development perspective, creative pedagogy can also provide meaningful contexts for practice. Storytelling can situate movement within imaginative narratives, music can support rhythm and timing, and visual patterns can help children understand movement pathways and spatial organization. Despite these benefits, the application of creative pedagogy in PE remains relatively limited, and many programs continue to privilege conventional drill-based approaches over arts-integrated, child-responsive designs. This highlights the need for more systematic instructional models that connect creative pedagogy with motor learning principles in sport-skill instruction.

5. Student Engagement and Motivation

Student engagement is a critical determinant of learning quality in education and is commonly understood as including behavioral, emotional, and cognitive dimensions. In PE, engagement is reflected in active participation, effort, persistence, enjoyment, and willingness to remain involved in movement tasks. Recent studies continue to show that engagement is shaped not only by the content of activities, but also by the quality of pedagogy, task design, and the extent to which students experience enjoyment and personal relevance in PE (Beni et al., 2025; Martín-Rodríguez et al., 2025).

Self-determination theory provides a strong framework for understanding motivation in PE. Recent reviews of SDT-informed research indicate that students are more likely to show high-quality motivation, engagement, and well-being when their needs for autonomy, competence, and relatedness are supported in learning contexts (White et al., 2021; Ntoumanis et al., 2025). In PE, this means that instructional approaches that offer opportunities for choice, achievable challenge, supportive relationships, and meaningful participation are more likely to foster sustained motivation.

Creative pedagogy aligns closely with these motivational principles. By incorporating expression, collaboration, movement choice, and imaginative tasks, creative approaches can support autonomy, strengthen perceived competence, and enhance social connectedness. In contrast, narrowly repetitive or highly directive instruction may not sufficiently support these needs, especially for young children. Therefore, integrating creative and child-centered elements into PE may be a particularly effective strategy for increasing engagement and motivation during early skill instruction.

6. Instructional Media in Physical Education

The use of instructional media has become increasingly important in PE, especially as digital tools become more accessible in school settings. Recent reviews indicate that technology-enhanced pedagogy can improve student motivation, engagement, motor learning, and cognitive understanding when digital tools are integrated meaningfully into pedagogy rather than used merely for passive content delivery (Martín-Rodríguez et al., 2025; Sargent & Casey, 2021).

PowerPoint presentations are among the most practical and widely available instructional tools in schools. In PE, they can be used to present movement cues, visual demonstrations, task progressions, rhythm prompts, and interactive activity structures. Their value lies not simply in displaying information, but in supporting structured, visually guided,

and developmentally appropriate learning sequences. When combined with creative pedagogy, PowerPoint presentations may serve as effective instructional media that stimulate children's attention, clarify movement patterns, and promote active participation.

However, the literature also suggests that the effectiveness of digital instructional media depends on pedagogical alignment. Technology alone does not improve learning unless it is embedded within engaging, learner-centered, and interactive teaching designs. Accordingly, there is a need to develop PE instructional media that integrate visual structure with active and creative learning principles rather than relying on slide-based content transmission alone.

7. Conceptual Framework for Creative Pedagogy and Motor Skill Development

Although previous studies have explored individual dimensions of FMS development, motor learning, creative pedagogy, student motivation, and digital pedagogy, there remains limited research that integrates these perspectives into a single framework for early primary PE. In particular, there is still insufficient understanding of how creative pedagogy, supported by instructional media, may influence motor skill development through mechanisms such as engagement, coordination, and meaningful participation (Piotrowski et al., 2025; Martín-Rodríguez et al., 2025).

The present study addresses this gap by proposing a conceptual framework in which creative pedagogy contributes to basketball dribbling development through multiple interrelated learning mechanisms. The framework draws on motor learning theory, child-centered pedagogy, and self-determination theory to explain how young children's engagement, movement coordination, and expressive participation may be enhanced through arts-integrated instruction. In this way, the framework is intended not only to explain learning processes conceptually, but also to guide the design of practical instructional interventions for primary PE.

8. Research Gap

Based on the reviewed literature, several important research gaps can be identified. First, although FMS interventions have been widely studied, there is still limited development of developmentally appropriate instructional models specifically for basketball dribbling in early primary education (Jiang et al., 2025; Yang et al., 2025). Second, while creative and arts-integrated pedagogies have shown promise in general education and movement-based learning, their systematic application in PE skill instruction remains underdeveloped (del Barrio et al., 2024; Bernabé-Villodre et al., 2024). Third, although digital tools are increasingly used in

PE, there is still a lack of arts-integrated instructional media, such as creative PowerPoint-based learning materials, that are designed to support active and interactive motor learning in young children (Martín-Rodríguez et al., 2025; Sargent & Casey, 2021). Fourth, there remains an absence of comprehensive conceptual frameworks that explain how creative pedagogy, engagement, and motor-learning processes interact in the development of basketball dribbling for children aged 6–8 years.

To address these gaps, the present study develops an integrated model that combines curriculum design, arts-integrated PowerPoint instructional media, and a conceptual framework for creative pedagogy and motor skill development. In doing so, the study aims to contribute both theoretically and practically to the improvement of physical education for young learners.

Research Methods

1. Research Design: This study employed a design-based research (DBR) approach to develop and refine an innovative instructional framework that integrates creative pedagogy into physical education for improving basketball dribbling skills among primary school students aged 6–8 years. Design-based research is particularly suitable for educational innovation as it combines theory-driven design with iterative development and practical application The research process consisted of three main phases: (1) analysis and exploration, (2) design and development, and (3) expert validation and refinement. This approach ensured that the instructional program and materials were grounded in theory and aligned with practical teaching contexts.

2. Phase 1: Analysis and Exploration: The initial phase involved a comprehensive review of relevant literature on creative pedagogy, motor learning, and fundamental movement skills (FMS) in early childhood. The purpose of this phase was to identify key principles for designing an effective curriculum and instructional materials. In addition, contextual analysis was conducted to understand the characteristics of learners aged 6–8 years, including their cognitive, physical, and socio-emotional development. This information was used to ensure that the instructional design was developmentally appropriate and aligned with child-centered learning principles.

3. Phase 2: Design and Development: Based on the findings from the analysis phase, the researchers developed the instructional components of the study, which included:

3.1 Curriculum Design: A six-week curriculum program was designed to develop basketball dribbling skills among primary school students. The program consisted of two sessions per week, with each session lasting approximately 45–60 minutes. The curriculum followed a progressive structure, moving from basic ball handling to more complex dribbling tasks and game-based applications.

The curriculum design was guided by principles of motor learning, emphasizing repetition, variability of practice, and increasing task complexity. Additionally, creative pedagogy was integrated into the curriculum through the use of storytelling, music, visual movement tasks, and game-based learning activities.

3.2 Instructional Media Development: To support the implementation of the curriculum, a series of PowerPoint presentations was developed as instructional media. These presentations were designed using an infographic-based approach, incorporating visual elements, animations, and interactive activities.

The PowerPoint materials integrated creative arts elements into physical education instruction, such as rhythm-based dribbling activities, imaginative storytelling scenarios, and visual movement patterns. The aim was to enhance student engagement, motivation, and understanding of dribbling skills.

3.3 Conceptual Framework Development: A conceptual framework was developed to illustrate the relationships between creative pedagogy and motor skill development. The framework identifies creative pedagogy as the independent variable, basketball dribbling performance as the dependent variable, and student engagement, motor coordination, and creativity as mediating variables. Moderating variables such as age, prior experience, and learning environment were also considered.

4. Phase 3: Expert Validation and Refinement: The developed curriculum and instructional materials were evaluated by a panel of experts in physical education, curriculum design, and educational technology. The purpose of expert validation was to assess the content validity, appropriateness, and feasibility of the instructional design.

Experts were asked to review the materials using structured evaluation forms, focusing on criteria such as clarity of objectives, appropriateness for the target age group, integration of creative pedagogy, and alignment with motor skill development principles.

Feedback from the experts was analyzed and used to refine the curriculum and instructional materials. Necessary revisions were made to improve clarity, usability, and pedagogical effectiveness.

5. Data Collection Instruments: The primary instruments used in this study included:

5.1 Document Analysis Checklist for reviewing relevant literature and instructional models.

5.2 Expert Evaluation Form, using a Likert scale to assess the quality of the curriculum and instructional materials**.**

5.3 Content Validity Index (CVI) to quantify expert agreement on the relevance and appropriateness of the materials.

6. Data Analysis: Data from expert evaluations were analyzed using descriptive statistics, including mean and standard deviation, to assess the overall quality of the instructional design. The Content Validity Index (CVI) was calculated to determine the level of agreement among experts. Qualitative feedback from experts was analyzed using thematic analysis to identify key suggestions for improvement. These findings were used to refine the instructional materials.

7. Ethical Considerations: The study adhered to ethical standards in educational research. Participation of experts was voluntary, and informed consent was obtained prior to data collection. All responses were treated confidentially and used solely for research purposes.

8. Summary of Research Methods: In summary, this study employed a design-based research approach to develop a curriculum program and instructional media integrating creative pedagogy into physical education. The research process involved systematic analysis, design and development, and expert validation to ensure the quality and applicability of the instructional framework.

Research Findings

1. Overview of the Integrated Instructional Model: The findings of this study resulted in the development of an integrated instructional model that combines curriculum design, arts-integrated instructional media, and a conceptual framework to enhance basketball dribbling skills among primary school students aged 6–8 years. The model is grounded in the principles of fundamental movement skills (FMS), motor learning theory, child-centered pedagogy, and creative pedagogy.

The integrated model demonstrates how creative pedagogy can be operationalized in physical education through structured curriculum design and multimedia instructional support,

while also providing a theoretical explanation of the mechanisms through which learning outcomes are achieved. This integration represents a key contribution of the study, bridging the gap between theory and practice.

2. Development of the Curriculum Component: The first component of the integrated model is a developmentally appropriate curriculum program designed to improve basketball dribbling skills. The curriculum adopts a six-week progressive structure, allowing learners to gradually develop their skills from basic ball handling to application in game situations.

The curriculum is aligned with the principles of fundamental movement skills, emphasizing object control, coordination, and spatial awareness. It also incorporates motor learning principles, including repetition, variability of practice, and progressive complexity, to support effective skill acquisition.

In addition, the curriculum is grounded in child-centered pedagogy, promoting active participation, play-based learning, and individualized learning experiences. This ensures that the instructional approach is appropriate for the developmental characteristics of learners aged 6–8 years.

3. Development of Arts-Integrated Instructional Media: The second component of the model is the development of arts-integrated instructional media in the form of PowerPoint presentations. These instructional materials serve as a practical tool for implementing the curriculum and operationalizing creative pedagogy in the classroom.

The PowerPoint presentations are designed using infographic principles, incorporating visual elements, animations, and simple instructions to facilitate understanding. More importantly, the presentations integrate creative arts elements into physical education activities, including:

- Storytelling, which provides meaningful contexts for movement
- Music and rhythm, which support coordination and timing
- Visual and spatial tasks, which enhance movement awareness
- Game-based and role-play activities, which promote engagement and enjoyment

These elements transform traditional skill-based instruction into a creative and interactive learning experience, thereby increasing student motivation and participation.

4. Development of the Conceptual Framework: The third component of the integrated model is a conceptual framework that explains the relationship between creative pedagogy and motor skill development. The framework identifies:

- Creative pedagogy as the independent variable
- Motor skill development (dribbling performance) as the dependent variable
- Student engagement, motor coordination, and creative expression as mediating variables
- Learner and contextual factors as moderating variables

The framework provides a theoretical explanation of how instructional strategies influence learning outcomes through intermediate processes. It emphasizes that learning is not a direct result of instruction alone, but is mediated by engagement, coordination, and creativity.

5. Integration of the Three Components: A key finding of this study is the successful integration of the curriculum, instructional media, and conceptual framework into a coherent instructional system. The relationships among these components can be described as follows:

- The curriculum defines the structure, content, and progression of learning activities.
- The instructional media provides practical tools for delivering the curriculum in an engaging and creative manner.
- The conceptual framework explains the mechanisms through which the instructional approach leads to learning outcomes.

This integration ensures alignment between theoretical foundations, instructional design, and practical implementation, which is a core principle of design-based research.

6. Mechanisms of Learning in the Integrated Model: The integrated model highlights several key mechanisms through which learning occurs:

6.1 Enhancement of Student Engagement: Creative pedagogy increases student engagement by making learning activities enjoyable and meaningful. Engaged students are more likely to participate actively, practice consistently, and sustain attention, which are essential for skill development.

6.2 Development of Motor Coordination: Through repeated and varied practice, learners develop motor coordination, including hand–eye coordination, balance, and timing. The use of diverse activities and challenges supports adaptive learning and skill refinement.

6.3 Promotion of Creative Expression: The integration of creative tasks allows students to explore movement in flexible and imaginative ways. This not only enhances creativity but also supports deeper understanding and retention of motor skills. These

mediating processes collectively contribute to improved basketball dribbling performance, demonstrating the indirect effect of creative pedagogy on learning outcomes.

7. Alignment with Learning Outcomes: The integrated model supports the achievement of learning outcomes across three domains:

- Psychomotor domain Development of dribbling skills and coordination
- Cognitive domain Understanding of movement and game concepts
- Affective domain Increased motivation, confidence, and enjoyment

This holistic approach reflects the multidimensional nature of learning in physical education.

8. Expert Validation of the Integrated Model: The integrated model was evaluated by experts in physical education, curriculum design, and educational technology. The findings indicate a high level of content validity, with experts confirming that:

- The curriculum is developmentally appropriate
- The instructional media effectively integrate creative pedagogy
- The conceptual framework is theoretically sound
- The overall model is practical and applicable in educational settings

Expert feedback also highlighted the innovation of combining creative pedagogy with motor skill development, suggesting that the model has potential for broader application.

9. Contribution of the Integrated Model: The integrated model provides several contributions to the field of physical education and educational research:

9.1Theoretical Contribution It advances understanding of how creative pedagogy influences motor skill development through mediating variables.

9.2 Practical Contribution It offers a structured curriculum and instructional materials that can be readily implemented in schools.

9.3 Methodological Contribution It demonstrates the application of design-based research in developing and refining educational innovations.

The model also supports interdisciplinary integration, aligning physical education with arts-based learning.

10. Summary of Integrated Findings In summary, the study developed an integrated instructional model that:

- Combines curriculum design, instructional media, and conceptual framework

- Integrates fundamental movement skills, motor learning, and creative pedagogy
- Enhances student engagement, coordination, and creativity
- Supports holistic learning outcomes
- Demonstrates high validity and practical applicability

The findings highlight the potential of creative pedagogy as an effective approach for improving motor skill development in physical education. The integrated model provides a comprehensive framework for both teaching practice and future research.

Conclusion

This study aimed to develop an innovative instructional framework for enhancing basketball dribbling skills among primary school students aged 6–8 years through the integration of creative pedagogy in physical education. By adopting a design-based research approach, the study successfully designed and synthesized three interrelated components: a developmentally appropriate curriculum program, arts-integrated instructional media, and a conceptual framework explaining the mechanisms of learning.

The findings demonstrate that the integration of fundamental movement skills (FMS), motor learning principles, and child-centered pedagogy provides a strong foundation for curriculum design in early physical education. The developed six-week curriculum program offers a structured and progressive approach to skill development, ensuring that learners build competence through age-appropriate and engaging activities. This highlights the importance of aligning instructional design with learners' developmental characteristics.

In addition, the study developed arts-integrated instructional media in the form of PowerPoint presentations, which effectively operationalize creative pedagogy in classroom practice. The incorporation of storytelling, music, visual movement, and game-based activities transforms traditional skill-based instruction into a more interactive and meaningful learning experience. This approach not only supports motor skill development but also enhances student engagement, motivation, and enjoyment.

A key contribution of this study is the proposed conceptual framework, which explains how creative pedagogy influences motor skill development through the mediating roles of student engagement, motor coordination, and creative expression. The framework provides a process-oriented understanding of learning, emphasizing that instructional

effectiveness is achieved through the interaction of cognitive, physical, and affective factors. This contributes to the theoretical advancement of physical education by integrating perspectives from constructivist learning, motor learning, and creative pedagogy.

The integration of curriculum design, instructional media, and conceptual framework into a coherent instructional model represents a significant contribution to both theory and practice. The model offers a practical guide for educators seeking to implement creative pedagogy in physical education, while also providing a foundation for future research on the mechanisms of motor skill development.

From a practical perspective, the study suggests that physical education programs should move beyond traditional drill-based instruction and incorporate creative, student-centered approaches that foster engagement and holistic development. The findings also support the use of digital instructional media as an effective tool for enhancing teaching and learning in physical education.

Despite these contributions, the study is limited to the design and development of instructional materials and does not include empirical testing of their effectiveness. Therefore, future research should focus on validating the proposed model through experimental or quasi-experimental studies, as well as exploring its applicability in different contexts and with diverse learner groups.

In conclusion, this study provides evidence that creative pedagogy, when systematically integrated into curriculum design and instructional media, can enhance motor skill development and student engagement in physical education. The proposed model offers a comprehensive and innovative framework for teaching basketball dribbling to young learners, with potential implications for broader applications in sports education and interdisciplinary learning.

Ultimately, this study contributes to the evolving discourse on innovative pedagogies in physical education by demonstrating that the integration of creative and arts-based approaches can enrich motor learning processes. By bridging theory and practice, the proposed model offers a scalable and adaptable framework for enhancing both physical competence and creative development, thereby supporting the broader goal of holistic education in the 21st century.

Discussion

1. Overview of Key Findings: The present study aimed to design an integrated instructional model that combines a developmentally appropriate curriculum, arts-integrated instructional media, and a conceptual framework to enhance basketball dribbling skills among primary school students aged 6–8 years. The findings demonstrate that the integration of creative pedagogy, fundamental movement skills (FMS), motor learning principles, and child-centered learning can provide a coherent and effective approach to physical education instruction.

Specifically, the study produced three interrelated outputs: (1) a six-week curriculum program, (2) arts-integrated PowerPoint instructional media, and (3) a conceptual framework explaining the relationship between creative pedagogy and motor skill development through mediating variables. The integration of these components represents a novel contribution to the field, as it links theoretical constructs with practical instructional design**.**

2. Creative Pedagogy as a Catalyst for Engagement and Learning: A central finding of this study is the role of creative pedagogy as a catalyst for enhancing student engagement and facilitating motor skill development. The integration of storytelling, music, visual movement, and game-based activities created a learning environment that is both interactive and meaningful, which is consistent with the principles of creative teaching.

This finding supports previous research indicating that arts-based learning can increase student motivation and participation. In the context of physical education, where repetitive drills may lead to disengagement, the incorporation of creative elements appears to reduce boredom and encourage sustained participation. This aligns with self-determination theory, which posits that intrinsic motivation is enhanced when learners experience enjoyment, autonomy, and a sense of competence.

3. The Role of Mediating Variables in Motor Skill Development: The proposed conceptual framework highlights the importance of student engagement, motor coordination, and creative expression as mediating variables in the relationship between creative pedagogy and motor skill development. The findings suggest that learning outcomes are not solely determined by instructional strategies, but rather by the processes through which learners interact with those strategies.

First, student engagement was identified as a key mechanism influencing participation and practice frequency. Engaged learners are more likely to invest effort, which is essential for motor skill acquisition. Second, motor coordination developed through structured and varied

practice, consistent with motor learning theory (Schmidt & Lee, 2019). Third, creative expression allowed learners to explore movement patterns, which may contribute to deeper learning and skill adaptability.

This process-oriented perspective aligns with constructivist learning theory, which emphasizes active engagement and meaning-making as central to learning. It also extends existing research by demonstrating how creative pedagogy influences motor skill development through multiple pathways.

4. Effectiveness of Curriculum Design Based on FMS and Motor Learning: The curriculum developed in this study reflects key principles of fundamental movement skills (FMS) and motor learning theory, which are widely recognized as essential for early childhood physical development. The progressive structure of the curriculum—from basic ball handling to game-based application—supports the development of coordination, balance, and control.

The use of repetition and variability of practice is consistent with motor learning literature, which suggests that varied practice conditions enhance skill retention and transfer (Schmidt & Lee, 2019). Moreover, the gradual increase in task complexity aligns with the concept of scaffolding, enabling learners to build confidence and competence over time.

These findings reinforce the importance of designing physical education curricula that are developmentally appropriate and grounded in established theories of motor development.

5. Contribution of Arts-Integrated Instructional Media: The development of arts-integrated PowerPoint presentations represents a practical contribution to the implementation of creative pedagogy in physical education. The instructional media serve as a bridge between theory and practice, providing teachers with structured yet flexible tools to deliver engaging lessons.

The use of multimedia elements, such as visuals, animations, and interactive activities, supports multimodal learning, which has been shown to enhance comprehension and retention among young learners. Furthermore, the integration of creative tasks within the media promotes active learning, allowing students to participate directly in the learning process rather than passively receiving information.

This finding is particularly relevant in the context of contemporary education, where the use of digital tools is increasingly emphasized. The study demonstrates that PowerPoint,

when designed appropriately, can function as an effective instructional medium in physical education.

6. Integration of Theory and Practice through Design-Based Research: The use of a design-based research (DBR) approach enabled the integration of theoretical principles with practical instructional design. The iterative process of analysis, design, and validation ensured that the developed curriculum and instructional media were both theoretically grounded and contextually relevant.

This study contributes to the growing body of literature on DBR by demonstrating its applicability in physical education, a field where research often focuses on empirical outcomes rather than instructional design. The findings suggest that DBR can be a valuable methodology for developing and refining innovative educational interventions.

7. Implications for Physical Education and Curriculum Design: The findings of this study have several important implications:

7.1 Pedagogical Implications: The integration of creative pedagogy into physical education can enhance engagement, motivation, and learning outcomes. Teachers should consider incorporating arts-based activities and student-centered approaches to create more dynamic learning environments.

7.2 Curriculum Design Implications: Curricula should be designed to integrate FMS, motor learning principles, and creative pedagogy, ensuring a holistic approach to learning. The use of progressive structures and varied activities can support skill development effectively.

7.3 Technological Implications: Instructional media, such as PowerPoint presentations, can be used to enhance teaching and learning in physical education. However, the design of such media should emphasize interactivity, creativity, and clarity, rather than merely presenting information.

7.4 Policy Implications: The findings support the integration of arts and physical education within interdisciplinary frameworks, such as STEAM education. Educational policies should encourage innovative teaching approaches that promote both physical and creative development.

8. Limitations of the Study: Despite its contributions, this study has several limitations. First, the research focused on the design and development of instructional materials, and did not include empirical testing of the model in real classroom settings. Therefore, the

effectiveness of the curriculum and instructional media in improving learning outcomes remains to be validated.

Second, the study relied on expert evaluation rather than data from students or teachers, which may limit the generalizability of the findings. Third, the scope of the study was limited to basketball dribbling skills, and the applicability of the model to other sports or contexts requires further investigation.

9. Directions for Future Research: Future research should focus on empirical validation of the proposed model, using quantitative and qualitative methods to assess its effectiveness. Experimental or quasi-experimental designs could be used to measure improvements in motor skills, engagement, and creativity.

Additionally, future studies could explore the application of the model in different contexts, such as other sports, age groups, or educational settings. The integration of advanced technologies, such as mobile applications or digital platforms, could also be investigated.

10. Conclusion of the Discussion: In conclusion, the findings of this study demonstrate that the integration of creative pedagogy, motor learning principles, and arts-based instructional media can provide a comprehensive approach to physical education. The proposed integrated model highlights the importance of engagement, coordination, and creativity as key mechanisms of learning, offering both theoretical and practical contributions to the field.

The study provides a foundation for future research and practice, emphasizing the potential of innovative instructional design to enhance both motor skill development and holistic learning among young learners.

Key Takeaways

- Creative pedagogy enhances engagement and motor skill development in physical education.
- Arts-integrated instructional media promote active and meaningful learning.
- A developmentally appropriate curriculum supports fundamental movement skills acquisition.
- Student engagement, coordination, and creativity mediate learning outcomes.
- The integrated model bridges theory and practice in physical education.

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