

Integrating Empiricism and Jean Piaget's Cognitive Theory to Foster Creativity in Dance Learning in Elementary Schools: A Systematic Literature Review

Wecya Sugevin¹, Sigit Wibowo²

¹ Universitas Negeri Yogyakarta, Sleman, Indonesia

² Universitas Negeri Malang, Malang, Indonesia

wecyasugevin.2023@student.uny.ac.id, sigit.wibowo.fip@um.ac.id

corresponding author: wecyasugevin.2023@student.uny.ac.id

ABSTRACT

Dance learning in elementary schools plays an important role in fostering students' creativity through aesthetic and experiential activities. However, learning practices are still frequently dominated by teacher demonstrations and video-based instruction, limiting students' opportunities to explore their environment and construct creative experiences independently and actively. Previous studies have widely discussed experiential learning and Jean Piaget's cognitive theory separately, but studies integrating the empiricism paradigm with Piaget's cognitive perspective in elementary school dance learning remain limited. Therefore, this study aims to examine the relevance of the empiricism paradigm and Jean Piaget's cognitive theory in fostering creativity in elementary school dance education. This study employed a literature review method using a narrative review design. Data were collected from 52 scientific sources, including international journal articles, accredited national journals, conference proceedings, and relevant books, obtained from the Scopus, SINTA, and Google Scholar databases. The data were analyzed descriptively using the interactive analysis model of Miles and Huberman, including data collection, data reduction, data presentation, and conclusion drawing. The findings indicate that the empiricism paradigm emphasizes sensory experience, environmental interaction, and observation as the primary foundations for the development of creativity in dance learning. Meanwhile, Jean Piaget's cognitive theory holds that elementary school students at the concrete operational stage require contextual and direct learning experiences to actively construct knowledge. The study further reveals that both perspectives are conceptually interconnected through three major aspects: sensory experience, active learning, and environmental exploration, which collectively support students' creativity formation in dance learning. In practice, this study implies that teachers should design dance learning activities that prioritize direct interaction with the environment, student exploration, and experiential learning to create more meaningful, creativity-oriented learning processes in elementary schools.

Keywords: *dance learning, creativity, elementary school, empiricism, jean piaget's cognitive theory*

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INTRODUCTION

Art education plays an important role in developing students' creativity, expression, imagination, and aesthetic sensitivity in elementary schools. Creativity development in arts learning is also closely related to students' independence and opportunities for self-expression through artistic activities (Meilindya et al., 2022). Through artistic activities, students are encouraged to express ideas, explore experiences, and develop creative thinking skills that support holistic child development (Irawana & Desyandri, 2019; Yuniarti & Maknun, 2024). In contemporary education, creativity is considered an essential competency for addressing the challenges of the twenty-first century because it supports problem-solving, innovation, and adaptive thinking (Weber & Reed, 2022; Zhang & Jia, 2024). Creativity is also recognized as an essential component of 4C competencies in elementary education, alongside critical thinking, communication, and collaboration skills (Dafit et al., 2024). Therefore, arts learning should not focus solely on imitation and technical mastery, but also provide students with opportunities to construct ideas and experiences through meaningful learning activities actively. Active and creative learning experiences are important to stimulate students' higher-order thinking and creativity in elementary education (Fatonah & Pranata, 2022). Several studies also emphasized that project-based and experiential learning in art can significantly improve students' creative thinking and active participation in elementary education (Ghozelin et al., 2023; Yoeliana et al., 2022). Previous research

also reported that problem-solving learning integrated with digital platforms significantly improves elementary students' creativity and higher-order thinking skills (Lingga et al., 2025; Selfa-Sastre et al., 2022; Tursynkulova et al., 2023; Wang & Li, 2024).

One important aspect of arts education in elementary schools is dance learning. Dance is one aspect of the arts applied at the elementary school level. Dance learning is closely related to kinesthetic activities, cultural expression, creativity, and students' emotional development (Devi Triana et al., 2024; Huang et al., 2025). Dance is part of the learning process and is included in both intracurricular and extracurricular activities. Dance instruction in elementary schools is divided into three phases, in accordance with the independent curriculum's phase divisions: phase A for grades 1 and 2, phase B for grades 3 and 4, and phase C for grades 5 and 6. Each phase has different Learning Outcomes (CP) adapted to the characteristics of each age group. Dance is a learning activity grounded in kinesthetic intelligence, taking into account norms closely aligned with the local community's culture and mindset (Devi Triana et al., 2024; Huang et al., 2025). Through dance, students can increase their creativity and appreciation for creating art, and can interpret phenomena in everyday life (Setiaji, 2023). Creativity stimulation in elementary students can also be strengthened through contextual and thematic learning activities that encourage imagination and self-expression (Y. Sari & Syahdan, 2023).

In learning dance, an approach is needed in the form of interrelated elements, namely experiencing, creating, and reflecting, which lead to artistic thinking and work, so that it has an impact on oneself and others (Ministry of Education and Culture, 2022). The learning process carried out using this approach requires a supportive learning environment (Kerimbayev et al., 2023; Vistorte et al., 2024). The learning environment can be a physical, social, or designed environment that facilitates students' needs in the learning process (Ole & Dipan, 2023). The learning environment is not only the space designed within the classroom, but also the students' surroundings (Destrinelli et al., 2018). The surrounding environment can serve as a medium and a stimulus for students' learning, especially in learning environmentally based dance arts (Aji et al., 2025; Anugerah & Masunah, 2022; Dwishiera et al., 2025). Through environment-based learning, students will be better able to understand the material because they can learn directly, not only through pictures or teacher explanations (Syamsudin et al., 2025; Wajdi et al., 2022).

However, empirical conditions in schools indicate that dance learning is still frequently dominated by teacher-centered approaches. Students tend to imitate teacher demonstrations or merely observe learning videos, rather than actively exploring their environment and experiences. Such conditions make students passive recipients of knowledge and limit opportunities for creative exploration (Mailina & Kasmahidayat, 2023). Such conditions limit students' opportunities to construct creativity independently and reduce meaningful engagement during learning activities (Lathifah et al., 2022). Previous studies also found that teachers rarely use the surrounding environment as a learning resource, leading to monotonous, less meaningful learning activities (Anggraini et al., 2022; Hasanah, 2023). In many elementary schools, learning still emphasizes instructional delivery rather than student exploration and experiential engagement, even though creativity develops optimally through active participation and direct experience (Rizkasari et al., 2022; Syamsudin et al., 2025).

Several recent studies have emphasized the importance of experiential and environment-based learning in fostering creativity. Environment-based and problem-based learning can encourage students to develop observation skills, problem-solving abilities, and creativity by engaging them directly with real situations and learning contexts (Mahmudah et al., 2020; Rahma et al., 2024; Rahmawati et al., 2022; L. S. Sari & Fitria, 2021). Environmentally oriented dance learning can enhance students' creativity, social sensitivity, and aesthetic awareness by engaging them directly with real-life contexts (Aji et al., 2025; Anugerah & Masunah, 2022; Dwishiera et al., 2025). Likewise, observation-based learning and sensory engagement are considered effective in stimulating students' creative thinking and meaning construction (Frei-Landau et al., 2022; Revenko et al., 2024). These findings indicate that creativity in dance learning is strongly influenced by students' opportunities to experience, observe, and explore their environment directly.

Theoretically, the importance of direct experience in learning can be explained through the empiricism paradigm and Jean Piaget's cognitive theory. Empiricism emphasizes that knowledge is obtained through sensory experience and interaction with the environment (Mahmudatunnisa & Mawardi, 2023; Vera & Hambali, 2021). Through observation, experimentation, and sensory engagement, students construct understanding based on real experiences (Agung et al., 2019). In dance learning, empirical experiences can serve as stimuli for movement exploration and creative expression, as students process environmental experiences into artistic ideas (Asmarani, 2020; Pata'dungan et al., 2023).

Meanwhile, Jean Piaget's cognitive theory explains that elementary school students are generally in the concrete operational stage, where learning becomes more meaningful when students interact with concrete objects and real situations (Istiqomah & Maemonah, 2021; Mifroh, 2020). Piaget emphasizes that children actively construct knowledge through interaction with their environment and through direct experiences that support cognitive growth (Erawati & Adnyana, 2024; Waite-Stupiansky, 2022). Therefore, creativity development in elementary school dance learning requires contextual, experiential, and student-centered learning processes that align with students' cognitive characteristics (Ita, 2018).

Although many studies have discussed experiential learning, environmental learning, creativity, and Piaget's cognitive theory separately, research that conceptually integrates the empiricism paradigm with Jean Piaget's cognitive theory in the context of elementary school dance learning remains limited. Previous studies mostly focused on learning methods, environmental utilization, or cognitive development independently (Rofi'a, 2024; Sanaya et al., 2022; Wandani et al., 2023; De Felice et al., 2022). Studies specifically examining how empiricism and Piagetian cognitive development collectively provide a conceptual foundation for fostering creativity in dance learning are still rarely explored. This indicates a theoretical and conceptual gap in the literature.

The novelty of this study lies in the integrative analysis between the empiricism paradigm and Jean Piaget's cognitive theory as a conceptual framework for fostering creativity in elementary school dance education. This study not only discusses experiential learning practices but also theoretically explains the relationships among sensory experience, cognitive development, and the formation of creativity in dance learning. By integrating philosophical and psychological perspectives, this study offers a more comprehensive conceptual foundation for designing meaningful, contextual, and creativity-oriented dance learning in elementary schools.

Therefore, this study aims to examine the relevance of the empiricism paradigm and Jean Piaget's cognitive theory in fostering students' creativity in elementary school dance learning. The findings of this study are expected to contribute theoretically to the arts education literature and practically to the development of innovative dance-learning approaches that emphasize direct experience, environmental exploration, and active student participation.

METHOD

This research uses a literature study method. In a literature study, library sources are used to obtain information. The first step in developing this research strategy is conducting a literature search, including using library sources to collect data (Aveyard, 2023; Chigbu et al., 2023). This literature study uses a narrative review research design. A narrative review will combine existing theories and research methods (Cronin & George, 2023). According to (2018), a literature review is a review of the literature on a subject under study, combining it into a coherent whole that produces an interpretation that highlights important issues, trends, complexities, and debates. In preparing this literature review, a systematic identification, discovery, and analysis of documents related to the research problem are carried out.

In this study, descriptive techniques are used to describe, analyze, and discuss data, and to draw conclusions. The descriptive method emphasizes the strength of data analysis derived from various sources, including books and other writings, and relies on existing theories that are clearly and in-depth interpreted to produce a thesis and antithesis (Wibowo et al., 2025). The article search was conducted by entering the

keywords "empiricism theory, Jean Piaget's cognitive theory, dance learning, and creativity formation" into Scopus, SINTA, and Google Scholar. The selected articles span the time range 2022-2025. Research results based on publications in international journals, accredited national journals, and national seminars were used to select articles for secondary data collection. Through the selection process, the results from the selected articles can be organized into a systematic, transparent, and replicable study (Raudhatunnur & Shaleh, 2025).

Validation was conducted by considering Open Access Journals (OJS), the quality of the research methodology used in the article, the presentation and discussion of the data, the suitability of the data for analysis, and whether the references used were relevant. The data analysis technique used was the PRISMA flowchart, which included article identification, screening, and eligibility.

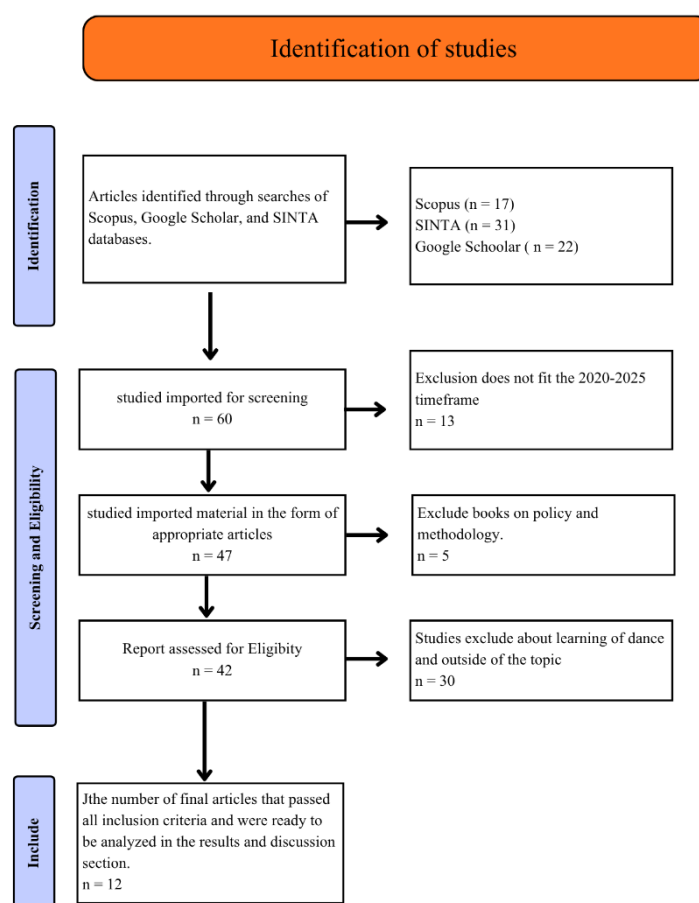


Figure 1. Prisma's flow chart

RESULTS AND DISCUSSION

The Prisma flowchart literature source selection process yielded 12 articles. The selected articles were assessed for their suitability and relevance to the topics discussed in this study. The following is a summary synthesis of the selected articles.

Table 1. List of Articles

No	Author/ Year	Findings	Relevance
1	Aji, F., et al (2025)	Dance lessons are based on local culture, integrating students' creativity, motor skills, and social skills. This has proven effective in enhancing students' expressiveness during learning.	Strengthening dance learning and fostering creativity through psychomotor activities.
2	Anugerah, S.Y., & Masunah, J. (2022)	A gradual dance creation process that stimulates students' imagination and thinking processes in solving aesthetic problems.	Relevant to efforts to foster creativity through hands-on learning practices.
3	Barent, I., et al (2022)	Empiricism is natural, not artificial, within humans. The process of knowledge formation is based on direct sensory experience of the external environment.	It serves as a theoretical foundation for explaining the empirical paradigm in the learning process. Learners undergo a sensory process in which they take in their surroundings to form knowledge.
4	Dashko, Y., et al (2024)	Active, student-centered learning methods can activate creative potential in the learning process.	This is relevant to learning strategies that require students to be actively involved in dance learning activities to foster creativity.
5	Erawati, N.K., & Adnyana, P.B (2024)	Jean Piaget's cognitive theory focuses on how children assimilate and accommodate new information to build their cognitive schemas.	It provides theoretical reinforcement of Jean Piaget's cognitive theory in the process of absorbing the material taught to students.
6	Rofi'a, N.A. (2024)	Elementary school children's cognitive structures develop rapidly when they are given the space to try, fail, and reconstruct their own understanding.	This is relevant to the creative process of discovering dance movements, where students actively seek to create new ones.
7	Sanaya, N.N.a., et al (2022)	Empiricism theory asserts that environmental stimulation and formal education play a dominant role in shaping a child's abilities, compared to innate factors.	The Empiricism Paradigm justifies the notion that dance creativity is not simply talent, but rather the result of the learner's environment.
8	Sari, Y., & Syahdan, A. (2023)	Providing themed visual stimuli, such as images, effectively stimulates imagination and early creativity in lower-grade elementary school students.	This is relevant to the concept of combining empirical stimuli to stimulate elementary school children's creative thinking.
9	We'u, G., et al (2023)	The concrete implications of empiricism theory in elementary school demonstrate that abstract material is easier to understand if it begins with sensory-motor experiences.	This is highly relevant to the title; it shows that the combination of empiricism and student motor activity is effective in elementary education, especially in dance learning.
10	Weber, R., & Reed, S (2022)	Developing dance students' creativity requires a pedagogical approach that allows children to improvise movements based on what they see and feel.	Fully relevant to the field of dance education through aesthetic exploration to develop students' creativity.
11	Yildiz, T (2025)	A comparative analysis shows that the interaction between cognitive	Provides a modern perspective on Jean Piaget's Cognitive Theory, focusing on

	development and cultural context strongly influences children's cognitive development.	adapting instructional movements to learners' cognitive development.
12 Yuniati, N.I., & Maknun, L (2024)	Arts instruction in elementary schools, particularly those involving physical expression, is effective in fostering children's creative freedom of thought.	This research is relevant to the study, as dance instruction in elementary schools strongly involves students' movement expression and fosters creativity.

The Contribution of the Empiricism Paradigm in Fostering Dance Creativity in Elementary Schools

Empiricism emphasizes the importance of the environment (family, learning, and learning resources) in the process of acquiring knowledge. The environment influences how children construct their own knowledge. The substance of knowledge in the empiricist philosophical paradigm is knowledge gained from the environment, which serves as a place for mutual sharing (Berent et al., 2022; We'u et al., 2023).

An interdisciplinary synthesis of science states that the creative movement ideas produced by elementary school children do not arise from abstract space but from the accumulation of sensory knowledge organized by the children. The synthesized data are presented in Table 1, Aji et al. (2025) and We'u et al. (2023), which mutually reinforce the idea that direct observation of the surrounding environment can be the main psychomotor trigger for elementary school children, in accordance with their learning method, namely, concrete operations. The application of empiricism in education will encourage students to learn through direct observation (Frei-Landau et al., 2022; Vieluf & Klieme, 2023). This creative stimulus can come from the results of observations or experiences that students have directly in their surrounding environment (Revenko et al., 2024; Weber & Reed, 2022).

However, an analysis of the theory of pure empiricism must also be presented. If the dance learning process in schools is based solely on pure empiricism, then children are treated as blank slates (*tabula rasa*), with knowledge imparted solely by the teacher. In this situation, children will simply imitate without any creative process in their learning. This is bridged by research presented by (2022) and Anugerah & Masunah (2022), which has shifted the focus of empirical theory from simply receiving stimuli to the process of solving aesthetic problems encountered by students in schools. Visual and audio stimuli, which are sensory input, are actively processed into creative movement output (Y. Sari et al., 2023). The movements, in the form of improvisation and exploration between different students, are where creativity emerges. Therefore, the theory of empiricism in arts learning should not be interpreted simply as imitation, but also as a process of providing sensory resources for each student to process according to their creativity.

Implementation of Jean Piaget's Cognitive Theory: Concrete Operational Deconstruction in Creating Dance Movements

Jean Piaget's cognitive theory is often used in the learning process, especially at the elementary school level. Cognitive development refers to a child's ability to think more complexly, reason, and solve problems. Cognitive abilities facilitate the acquisition of various other kinds of knowledge (Marinda, 2020).

The synthesis of literature on cognitive skills confirms that the effectiveness of dance arts learning materials depends on the suitability of the student's cognitive development (Yildiz, 2025). Temuan Erawati & Adnyana (2024) explain that cognitive development relies on the mechanisms of assimilation and accommodation. In elementary school dance lessons, the processes of assimilation and accommodation are most evident. Assimilation occurs when students integrate new motor stimuli into their existing motor skills, and accommodation occurs when students modify the structure of the movements they receive due to the new movements they must create.

The limitation for elementary school students at the concrete operational stage is that learning materials are presented in concrete form. Synthesis of findings by Rofi'a (2024) and Yunianti & Maknun (2024). This demonstrates that children's physical exploration of their bodies serves as a cognitive laboratory

for students. Through physical activity (movement), physical coordination in movement, and even reconstructing movement, students are simultaneously developing spatial and kinesthetic abilities. This demonstrates that dance learning is not limited to memorizing movements and abstract numerical calculations, but rather emphasizes exploration of the real environment around students. Environment-based exploration can take the form of imitative or imitative imitation of movements.

Therefore, dance instruction in elementary schools remains simple, with material structured around the surrounding environment. The material presented focuses on simple observations related to the surrounding environment. The development of children's creativity is also still at a simple stage, with creative objects sourced from the students' surroundings. In dance instruction, teachers must provide students with freedom of expression, so that they become more active in the learning process (Dashko et al., 2024). Students are allowed to explore themselves and be creative. This will provide them with hands-on experience and foster creativity.

The Relevance of Empiricism to Jean Piaget's Cognitive Theory in Fostering Creativity

Empiricism and Jean Piaget's cognitive theory are not directly related, but when viewed through their respective principles, a common thread emerges: they are complementary. Piaget's cognitive theory adds a constructive dimension in which individuals actively construct their own knowledge through interactions with their environment. Essentially, Jean Piaget's cognitive theory is based on the constructivist paradigm, but upon closer examination, empiricism and constructivism can be seen as complementary approaches to understanding how students learn and construct knowledge.

The results of the literature data synthesis found a reconstruction of the bridge between the two theories. The synthesis of the research findings in Table 1 shows that the two theories cannot be separated but rather form an interdependent cycle in the formation of creativity in dance learning. The functional relationship can be deconstructed: the empiricism paradigm is fully responsible for the cognitive input phase, namely, the input of raw data from students' direct sensory experiences. Jean Piaget's cognitive theory is fully responsible for students' internal processes, namely, transforming raw data from direct sensory experiences into more structured cognitive understanding, in line with students' concrete operational development stage in elementary school.

The relevance of both is validated by (2022), who highlight the importance of environmental stimulation and formal education in shaping students' knowledge, and by Yunianti & Maknun (2024), who highlight students' freedom of expression. Elementary school students who are exposed to a wealth of environmental stimuli and then given cognitive freedom to interpret movement independently will develop authentic creativity. Dance learning in elementary school is no longer about imitation but rather becomes a creative and artistic thinking process that meets the natural needs of students' cognitive development.

Thus, the empiricist paradigm can provide a strong foundation, in the form of raw materials, through sensory experience, for the exploration and development of artistic creativity. Through sensory experience, students can accumulate extensive knowledge about movement. Meanwhile, Jean Piaget's cognitive theory processes sensory experiences into creative movement based on the student's stage of cognitive development.

CONCLUSIONS AND RECOMMENDATION

This study successfully provides a comprehensive conceptual framework by integrating the philosophical paradigm of empiricism and Jean Piaget's cognitive development theory in the context of elementary school dance learning. Based on a systematic literature review, this study concludes that cultivating dance creativity in elementary school students operates through an interdependent cognitive cycle rather than a rigid instructional approach. In this cycle, the empiricist paradigm is solely responsible for the cognitive input phase, which gathers raw data through direct sensory experiences and environmental interactions. Simultaneously, Jean Piaget's cognitive theory governs the internal processing phase, in which students actively assimilate and accommodate these sensory stimuli into structured kinesthetic schemas

aligned with their concrete operational developmental stage. Ultimately, this integrative lens shifts the view of dance pedagogy from a passive, imitation-heavy model to an active, meaningful, and artistic thinking process that fosters authentic children's creativity.

Theoretically, this study fills a significant gap in the literature by cross-examining philosophical and psychological perspectives traditionally discussed separately in arts learning. It redefines empirical application by going beyond the tabula rasa or pure imitation model and framing sensory experience as a dynamic catalyst for aesthetic problem-solving and kinetic exploration for elementary school students. Furthermore, it contextualizes Piaget's cognitive mechanisms specifically within the physical laboratory and body-space of elementary school students who are still in the concrete operational stage. Practically, these findings serve as a pedagogical blueprint for educators and curriculum designers. For teachers, this study offers empirical justification for abandoning rigid, teacher-centered demonstration styles and for using the surrounding environment as a living textbook to design dance movements for students. For curriculum designers, this study supports the structural alignment of dance materials with the local cultural context and specific developmental stages of elementary school students. Consequently, educational implications call for a shift toward experiential and environmental learning models, in which schools foster a supportive ecosystem that provides students with the physical and cognitive freedom to explore, experiment, fail, and reconstruct their kinesthetic expressions.

Although this study builds strong theoretical integration, its narrative and literature-based approach is limited, necessitating a more in-depth study that goes beyond the existing literature. Therefore, future research should move toward empirical and field validation to obtain stronger data to demonstrate a concrete correlation in dance learning among elementary school students. Future researchers are strongly encouraged to conduct quasi-experimental or action research to test the actual effectiveness of an environment-based dance learning model in the classroom on students' creative thinking scores. Finally, further investigation is recommended into how digital tools or video support can be integrated to complement exploration of the physical environment without diminishing students' direct sensorimotor experiences in the real world.

Credit Authorship Contribution Statement

Wecya Sugevin: Conceptualization, Methodology, Resources, investigation, and writing- original draft; as well as **Sigit Wibowo:** Data Curation, formal analysis, and Writing – Review & Editing. All authors have read and approved the final version of this manuscript.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have influenced the work reported in this paper.

Ethical Declaration

All participants provided informed consent prior to their involvement in the study. They were informed about the study's purpose, procedures, and their right to withdraw at any time without consequence.

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