

A Model for the Sustainable Development of Learners' 21st-Century Skills in Performance to Promote Equal Education (SDG4)

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KEYWORDS

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ABSTRACT

This research aimed to develop and evaluate the appropriateness of a model for the sustainable development of learners' 21st-century skills in performances to promote equal education (SDG4). The sample group was selected through purposive sampling, consisting of seven experts in the fields of performances, music, dance, education, measurement and evaluation, or other related disciplines, each with at least two years of teaching experience. The research instruments used were a semi-structured interview form and an appropriateness and feasibility assessment form for the application of the model. The statistical tools used for data analysis were mean and standard deviation. The research results found that the model for sustainable development of learners' 21st-century skills in performances to promote equal education (SDG4) effectively enhanced learners' creativity, communication, collaboration, and social responsibility. The learning process emphasized learning by doing and reflective thinking, consisting of the following key components: 1) The background and rationale of the learning model; 2) The components of the model, including its principles, objectives, and six instructional steps; Step 1: Introduction to the lesson; Step 2: Reading and interpreting the script; Step 3: Individual practice of emotional expression; Step 4: Group practice integrating body movement and emotional expression; Step 5: Rehearsal and performance presentation and Step 6: Reflection and conclusion. 3) Direct and indirect support, including environment, attitudes, and motivation 4) Assessment and evaluation and 5) Implementation methods of the model. The evaluation of the model's appropriateness indicated an overall mean score of $\bar{x} = 4.25$, S.D. = 0.60, which corresponds to a high level of appropriateness. Each aspect of the model was rated highly appropriate, as follows: Aspect 1: Principles and fundamental concepts ($\bar{x} = 4.33$) Aspect 2: Objectives ($\bar{x} = 4.19$), Aspect 3: Learning activity process ($\bar{x} = 4.24$), Aspect 4: Evaluation process ($\bar{x} = 4.24$), Aspect 5: Model implementation ($\bar{x} = 4.19$), Aspect 6: Learner outcomes ($\bar{x} = 4.36$). In overall, the findings suggest that the developed model is highly appropriate and practically applicable for promoting sustainable performance education aligned with SDG4: Quality and Equal Education..

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1. INTRODUCTION

A continuously evolving society directly affects the Thai education system, which must urgently modernize and align with the needs of the community. These transformations not only influence students' learning processes but also impact their quality of life, health, and essential skills for future employment. However, such rapid changes have resulted in increasing educational inequality, as educational development has not been evenly distributed across all regions. Many schools still lack curriculum updates aligned with labor market demands, leaving a significant number of students without opportunities to



acquire essential skills and ultimately hindering both individual and national development (Siratjaoen & Chauychu, 2023; Channuwong et al., 2025). According to Wiengjanda et al. (2024), educational inequality not only creates disparities in learning quality among different areas but also contributes to a shortage of skilled labor. Meanwhile, well-educated workers often choose to seek employment abroad for better quality of life and career advancement (Ahmed et al., 2020).

Education, therefore, serves as a fundamental pillar of human development in all dimensions—economic, social, and quality of life. In Thailand's 20-Year National Strategic Plan (2018–2037) and the United Nations Sustainable Development Goals (SDGs) established in 2015, Goal 4 (Quality Education) emphasizes ensuring inclusive and equitable access to education for all by 2030 (Carlsen and Bruggemann, 2021; Colglazier, 2015). Sustainable education extends beyond basic literacy and numeracy; it also encompasses the development of life skills essential for the 21st century, such as critical thinking and problem-solving (UNESCO Institute for Lifelong Learning, 2020).

Furthermore, Watcharinrat et al. (2024) identified the top three student skills for the 21st century as media literacy, social skills, and information literacy, with key developmental priorities being collaboration, creativity, and communication. Sustainable education also emphasizes lifelong learning, defined as the opportunity for learners to continually develop themselves, not limited to school years or classrooms but through real-life experiences, enabling them to adapt to global changes in society, technology, and the economy (UNESCO, 2020). This aligns with the learner-centered approach, which takes into account learners' needs, interests, and individual potential to foster balanced growth in knowledge, morality, and responsibility (Bhardwaj et al., 2025; UNESCO, 2017). This is also consistent with Somthawinpongsai et al. (2025) and Rattananda et al. (2025) who highlighted the importance of collaborative and culturally rooted design as a powerful tool for sustainable development, particularly in semi-urban communities. Watcharinrat et al. (2025) and Wider et al. (2025) also stated that this spatial media is a scalable model for creating creative spaces, community empowerment, and policy-oriented innovation that connects local knowledge with global development frameworks. This reflects that education or fieldwork with communities can promote sustainable development

Thai educators such as Prachagool and Nuangchalerm (2021) emphasized that current learning management should focus on developing 21st-century skills that are applicable to both professional and daily life contexts, through experiential learning in situations closely related to students' real experiences. Performance is an important medium for developing learners' physical, mental, social, and intellectual skills (Rattanan, 2017). Learning through performance is not limited to practicing movement or singing but also fosters creativity, critical thinking, collaboration, and effective communication core competencies of 21st-century learning (Avdiu et al., 2025; Thornhill-Miller et al., 2023). However, in many educational institutions, performances education still lacks integration of 21st-century skill development with artistic training, as well as insufficient emphasis on educational equity and lifelong learning. Factors such as rigid curricula, limited teacher expertise integration, and unsupportive learning environments have constrained learners' full potential in Performance development (UNESCO, 2015). Thus, developing a learning model for Performance aligned with SDG4: Quality and Equitable Education is crucial—not only to promote equal access to education but also to help learners develop holistic competencies in creativity, social interaction, and emotional intelligence. A sustainable learning model in Performance serves as a key mechanism for producing high-quality learners equipped to meet the challenges of the 21st century (Peña-Ayala, 2021). At present, the Thai education system still lacks a focus on integrating domain-specific skills with contemporary competencies, resulting in learners who possess underdeveloped or outdated performing skills, misaligned with modern labor market needs.

From the aforementioned context, this research aims to develop a sustainable model for learner skill development in the 21st century: the performance dimension, to promote equitable education (SDG4). The study focuses on creating a practical, adaptable, and effective model that supports Performance learning while enhancing sustainable skill development ultimately contributing to long-term educational equity and sustainable advancement.

2. METHODS

The research instruments used for data collection included a semi-structured interview form and an appropriateness and feasibility assessment form for applying the model of sustainable development of learners' 21st-century skills in performance to promote equal education (SDG4).

2.1 Population and Sample

The sample was selected using the purposive sampling method, consisting of 7 participants who met the following criteria: Three instructors in the field of performance or related disciplines, each with at least two years of teaching experience. They possess a comprehensive understanding of teaching principles, theories, and methodologies and are capable of integrating interdisciplinary knowledge.

Four instructors in the field of education or related areas, each with at least two years of teaching experience. They also have a strong grasp of educational theories and practices and are able to apply knowledge across disciplines effectively.

2.2 Research Instruments and Instrument Quality Verification

The research instruments used for data collection consisted of a semi-structured interview form and an appropriateness and feasibility assessment form for applying the model for the sustainable development of learners' 21st-century skills in performance to promote equal education (SDG4). To ensure the effectiveness of the research process, the researcher



established the following procedures to verify the quality of the instruments:

Review of literature and relevant theories related to learner skill development, performance education management, and sustainable development concepts to synthesize the theoretical foundation.

Formulate the main topics and key questions for the semi-structured interview.

Develop a draft model of the model for the sustainable development of learners' 21st-century skills in performance to promote equal education (SDG4) based on the data collected.

Submit the draft model to experts or academic specialists for content validity verification, including the appropriateness of interview topics, content coverage, and clarity of language used.

Study related literature and theories on constructing an assessment form for evaluating the appropriateness and feasibility of applying the model.

Create an assessment form for evaluating the appropriateness of the model for the sustainable development of learners' 21st-century skills in performance.

Submit the assessment form to 5 experts or academic specialists for verification of accuracy and completeness of content using the Index of Item-Objective Congruence (IOC). The evaluation criteria were as follows:

+1 = The item clearly corresponds to the research objective.

0 = Uncertain whether the item corresponds to the research objective.

-1 = The item does not correspond to the research objective.

The acceptable IOC value should be ≥ 0.50 , and the obtained value was 0.88, indicating high content validity.

Revise the instruments according to experts' suggestions and recommendations.

Submit the finalized assessment form to experts in performance, music, dance, or specialists in education and educational measurement and evaluation to assess the overall appropriateness. The interpretation criteria were based on Srisawat (2011) as follows:

4.51 – 5.00 = Most appropriate

3.51 – 4.50 = Highly appropriate

2.51 – 3.50 = Moderately

1.51 – 2.50 = Slightly appropriate

1.00 – 1.50 = Not appropriate

2.3 Population and Sample

In this research, the data were analyzed using descriptive statistics, including frequency, percentage, mean, and standard deviation. These statistical methods were employed to interpret and report the research findings clearly and systematically.

3. RESULTS AND DISCUSSION

Based on the research process, data collection, and subsequent analysis, the findings revealed that the model for the sustainable development of Learners' 21st-century Skills in Performance to promote equal education (SDG4) consists of the following components (Figure 2):

Origin of the Learning Management Model. The conceptual and theoretical foundation that guided the model development.

Components of the Learning Management Model. These include principles, objectives, and learning process steps, which are structured into 6 stages as follows:

(1) Introduction to the lesson.

(2) Reading and interpreting the script.

(3) Individual emotional expression training.

(4) Group physical and emotional expression training.

(5) Rehearsal and performance presentation.

(6) Reflection and conclusion.

Direct and indirect support, including environment, attitudes, and motivation.

Measurement and evaluation.

How to apply the pattern.

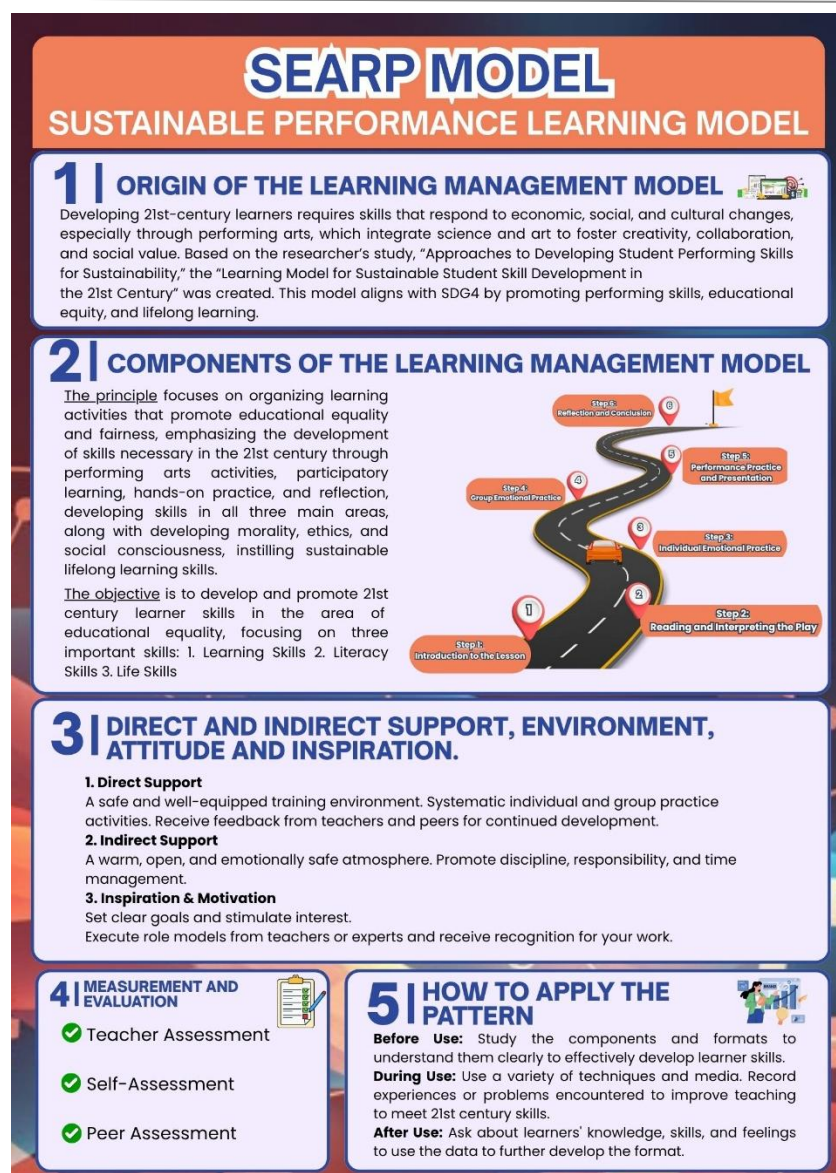


Figure 1. SEARP Model

3.1 Evaluation Results of the Appropriateness and Feasibility of Applying the Model for Sustainable Development of Learners' 21st-Century Skills in Performance

3.1.1 Part 1: General Information

To ensure the validity of the research instrument, expert validation was conducted by a panel of seven specialists who were purposively selected based on their academic qualifications and professional expertise related to the study's domain. Among the experts, four were male (57.14%) and three were female (42.86%). With respect to academic position, two experts held the rank of Lecturer (28.57%), two were Assistant Professors (28.57%), and three were Associate Professors (42.86%), thereby ensuring an appropriate balance across academic levels. In terms of specialization, three experts possessed expertise in Performance, Music, or Dance (42.86%), while two specialized in Education and another two in Measurement and Evaluation, each representing 28.57% of the total sample. Each expert was invited to evaluate the relevance and appropriateness of the instrument's items in relation to the research objectives. The evaluation was carried out using a three-point rating scale: +1 for items considered clearly congruent with the objectives, 0 for uncertain items, and -1 for incongruent items. The Index of Item-Objective Congruence (IOC) was then calculated for each item, and items with an IOC value of 0.50 or higher were deemed acceptable. This expert validation process ensured both the content validity and construct alignment of the research instrument, thereby enhancing the overall methodological rigor of the study.

3.1.2 Part 2: Evaluation Form

This section presents the results of the evaluation regarding the appropriateness of the proposed learning management model designed to foster the sustainable development of learners' 21st-century skills through performance-based activities that



promote equitable and inclusive education in alignment with Sustainable Development Goal 4 (SDG 4). The findings from the expert evaluation of the model's appropriateness are summarized as follows:

Assessment Items	Mean	Standard Deviation	Appropriateness Level
1. Principles and Fundamental Concepts			
1.1 The principles and concepts were academically accurate.	4.29	0.45	Highly appropriate
1.2 The concepts aligned with the context of performance education and SDG4.	4.29	0.70	Highly appropriate
1.3 The principles and concepts were feasible for practical application.	4.43	0.49	Highly appropriate
Mean score of principles and fundamental concepts	4.33	0.54	Highly appropriate
2. Objectives			
2.1 The objectives were clear and aligned with the main concept.	4.57	0.79	Most appropriate
2.2 The expected outcomes corresponded to learners' 21st -century skills and competencies.	4.14	0.69	Highly appropriate
2.3 The objectives were measurable and assessable.	3.86	0.69	Highly appropriate
Mean of Objectives	4.19	0.72	Highly appropriate
3. Learning Activity Process			
3.1 The learning process was systematic and continuous.	4.29	0.49	Highly appropriate
3.2 The steps promoted participation and sustainable performance competencies in the 21st century.	4.00	0.58	Highly appropriate
3.3 The process corresponded to available time, resources, and learning environment.	4.43	0.53	Highly appropriate
Mean of Learning Activity Process	4.24	0.53	Highly appropriate
4. Evaluation Process			
4.1 The assessment methods were diverse and covered the intended skills.	4.43	0.79	Highly appropriate
4.2 The assessment tools were suitable, clear, and consistent with the objectives.	4.14	0.69	Highly appropriate
4.3 The assessment could authentically reflect learning outcomes.	4.14	0.69	Highly appropriate
Mean of Evaluation Process	4.24	0.72	Highly appropriate
5. Model Implementation			
5.1 The model could be applied in real-world situations.	4.29	0.76	Highly appropriate
5.2 The model was not overly complex for teachers and learners.	4.00	0.00	Highly appropriate
5.3 The model was flexible and adaptable to different contexts.	4.29	0.49	Highly appropriate
Mean of Model Implementation	4.19	0.41	Highly appropriate
6. Learner Outcomes			



6.1 The model enhanced creativity and sustainable learning.	4.43	0.53	Highly appropriate
6.2 The model effectively developed sustainable 21st-century performance skills	4.29	0.76	Highly appropriate
Mean of Learner Outcomes	4.36	0.65	Highly appropriate
Overall Mean	4.25	0.60	Highly appropriate

Aspect 1: Principles and Fundamental Concepts: The mean score was $\bar{x} = 4.33$, S.D. = 0.59, interpreted as highly appropriate.

Evaluation items included: The principles and concepts were academically accurate ($\bar{x} = 4.29$, S.D. = 0.45, highly appropriate). The concepts aligned with the context of performance education and SDG) 4 ($\bar{x} = 4.29$, S.D. = 0.45, highly appropriate). The principles and concepts were feasible for practical application ($\bar{x} = 4.43$, S.D. = 0.53, highly appropriate).

Aspect 2: The mean score was $\bar{x} = 4.19$, S.D. = 0.72, interpreted as highly appropriate.

Evaluation items included: The objectives were clear and aligned with the main concept ($\bar{x} = 4.57$, S.D. = 0.79, most appropriate). The expected outcomes corresponded to learners' 21st-century skills and competencies ($\bar{x} = 4.14$, S.D. = 0.69, highly appropriate). The objectives were measurable and assessable ($\bar{x} = 3.86$, S.D. = 0.69, highly appropriate).

Aspect 3: Learning Activity Process: The mean score was $\bar{x} = 4.24$, S.D. = 0.53, interpreted as highly appropriate.

Evaluation items included: The learning process was systematic and continuous ($\bar{x} = 4.29$, S.D. = 0.49, highly appropriate). The steps promoted participation and sustainable performance competencies in the 21st century ($\bar{x} = 4.00$, S.D. = 0.58, highly appropriate). The process corresponded to available time, resources, and learning environment ($\bar{x} = 4.43$, S.D. = 0.53, highly appropriate).

Aspect 4: Evaluation Process: The mean score was $\bar{x} = 4.24$, S.D. = 0.72, interpreted as highly appropriate.

Evaluation items included: The assessment methods were diverse and covered the intended skills ($\bar{x} = 4.43$, S.D. = 0.79, highly appropriate). The assessment tools were suitable, clear, and consistent with the objectives ($\bar{x} = 4.14$, S.D. = 0.69, highly appropriate). The assessment could authentically reflect learning outcomes ($\bar{x} = 4.14$, S.D. = 0.69, highly appropriate).

Aspect 5: Model Implementation: The mean score was $\bar{x} = 4.19$, S.D. = 0.41, interpreted as highly appropriate.

Evaluation items included: The model could be applied in real-world situations ($\bar{x} = 4.29$, S.D. = 0.76, highly appropriate). The model was not overly complex for teachers and learners ($\bar{x} = 4.00$, S.D. = 0.00, highly appropriate). The model was flexible and adaptable to different contexts ($\bar{x} = 4.29$, S.D. = 0.49, highly appropriate).

Aspect 6: Learner Outcomes: The mean score was $\bar{x} = 4.36$, S.D. = 0.65, interpreted as highly appropriate.

Evaluation items included: The model enhanced creativity and sustainable learning ($\bar{x} = 4.43$, S.D. = 0.53, highly appropriate). The model effectively developed sustainable 21st-century performance skills ($\bar{x} = 4.29$, S.D. = 0.76, highly appropriate).

4. DISCUSSION

This study titled “A Model for the Sustainable Development of Learners’ 21st-Century Skills in Performance to promote equal education (SDG4)” had two primary objectives. The discussion of findings is presented as follows:

The development of a learning management model to enhance 21st-century skills in Performance revealed that learners demonstrated noticeable improvements in creativity, communication, collaboration, and social responsibility. The Learning by doing and reflection approaches enabled students to engage in self-directed and collaborative learning, fostering equality among learners. This finding aligns with Trilling and Fadel (2009) and Damrongsiri et al. (2022) who stated that “Education in the 21st century must aim to build competencies that integrate knowledge, skills, and values, allowing learners to live sustainably in a changing world.” The learning process in this model consists of six stages: 1) Introduction to the lesson 2) Reading and interpreting the script 3) Practicing internal emotional expression individually 4) Practicing physical and emotional expression in groups 5) Rehearsal and performance presentation 6) Reflection and conclusion. These stages encouraged participatory learning and the development of both artistic and social skills. Particularly, the group work and reflection stages correspond with Vygotsky’s (1978) concept that learning is a social process that occurs through interaction with others. This also resonates with Sethi (2024) and Channuwong (2024) who emphasized that essential skills for success in performance include confidence, communication, networking, adaptability, self-discipline, creative problem-solving, and attention to detail—all of which are key to a long and successful career (Prathaban, 2025).

Moreover, the learning management model developed in this study is consistent with the United Nations’ Sustainable Development Goal 4 (SDG4), which aims to ensure inclusive and equitable quality education for all. The model encourages all learners to participate in artistic expression regardless of socioeconomic background or ability, promoting self-confidence and self-worth as “lifelong learners.”

The outcomes also align with the conceptual foundation of 21st-century education, which emphasizes three key skill



domains, learning Skills, Literacy Skills, and Life Skills—through performance-based activities that integrate critical thinking, communication, creativity, and collaboration (González-Salamanca et al., 2020). Consequently, learners develop both professional and emotional capacities while contributing to an equitable learning society.

Evaluate the appropriateness of model for the sustainable development of learners' 21st-century skills in performances to promote equal education (SDG4).

The data from seven experts showed that four were male (57.14%) and three were female (42.8%), reflecting gender diversity that enriched the evaluation perspectives. Regarding academic positions, there were two lecturers (28.50%), two assistant professors (28.50%), and three associate professors (43.00%), indicating a high level of expertise and academic experience among the evaluators. Concerning areas of specialization, three experts specialized in Performance, music, or dance (43.00%), and two each in education and measurement & evaluation (28.50%). This corresponds with Samiya (2025), who noted that effective evaluation should encompass diverse dimensions to reflect balance between art and education, thereby ensuring comprehensive assessment.

The evaluation results of the learning management model for the sustainable development of learners' 21st-century skills in performances to promote equal education (SDG4) showed an overall mean score ranging between 4.19–4.36, interpreted as highly appropriate. This indicates that the model is practical and consistent with the UNESCO (2017) principles of sustainable education development. The highest mean score was found in the aspect of learner outcomes (\bar{x} = 4.36, S.D. = 0.65), demonstrating that the model effectively enhances creativity and sustainable 21st-century skills. This finding supports Trilling and Fadel (2009), who asserted that learning in the 21st century must foster flexible, creative, and self-directed competencies. The principles and conceptual foundations and learning process design also scored highly (\bar{x} = 4.33 and 4.24, respectively), indicating that the model was systematically structured, conceptually clear, and feasible for real-world application—consistent with the ADDIE instructional design model emphasizing systematic and continuous development (Spatioti et al., 2022).

5. CONCLUSION

In summary, the developed learning management model comprises six sequential stages: (1) introduction to the lesson, (2) reading and interpreting the script, (3) individual emotional expression training, (4) group physical and emotional expression training, (5) rehearsal and performance presentation, and (6) reflection and conclusion. The model was evaluated as highly appropriate in all aspects and demonstrates strong potential for practical implementation. It effectively enhances learners' performance skills in alignment with 21st-century competencies while promoting educational equity, consistent with Sustainable Development Goal 4 (SDG 4): Quality Education, which aims to ensure inclusive and equitable access to quality education for all.

Recommendations Educators intending to implement this model should thoroughly understand its theoretical framework and procedural steps. Moreover, it is essential to integrate performance-based skills with learners' everyday life skills to foster long-term and sustainable skill development. Continuous reflection and assessment are also recommended to ensure effective and meaningful learning outcomes.

6. CONFLICT OF INTEREST

The authors have no conflicts of interest to declare. There is also no financial interest to report. The author certifies that the submission is original work and is not under review at any other publication

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