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Transforming Sung Heritage into Early Childhood Music Pedagogy: Development and Validation of a Minnan Nursery Rhyme Teaching Module in Quanzhou, China

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Abstract

Local musical heritage is increasingly invoked in early-childhood curricula, yet culturally significant repertoire is not automatically developmentally or pedagogically ready for classroom use. In Quanzhou, although Minnan nursery rhymes already appear in selected language and cultural activities, the available repertoire sources and kindergarten curriculum resources do not by themselves provide an integrated, music-centred pathway from documented songs to developmentally structured teaching. This article reports the Analysis, Design and Development phases of a multiphase mixed-methods doctoral study that developed a Minnan nursery-rhyme teaching module for children aged 5 to 6 years in Quanzhou, China. Needs evidence came from a questionnaire completed by 200 kindergarten teachers, interviews with two experts and four kindergarten teachers, one whole-class singing observation, and document analysis. Integration identified five design requirements: developmentally accessible and culturally grounded content, participatory but scaffolded pedagogy, purposeful technology, process-oriented assessment, and usability within existing kindergarten routines. Fourteen candidate songs were screened against 12 criteria, and seven were selected through song-level screening and whole-repertoire balancing. The module distinguished inherited musical-cultural material from researcher-developed instructional design and organised listening, dialect modelling, singing, movement, cultural connection, and reflection within a flexible lesson architecture. Three experts reviewed 34 validation items; all met the predefined relevance criterion, and all recommended acceptance after minor revision. Feedback was traced to specific revisions. The study contributes a source-sensitive heritage-to-pedagogy transformation process and treats expert validation as formative refinement rather than evidence of instructional effectiveness.

Keywords: Early Childhood Music Education, Heritage Music, Minnan Nursery Rhymes, Pedagogical Transformation, Curriculum Development

Introduction

Local and heritage musics occupy an important but pedagogically demanding position in early-childhood education. Their inclusion can connect music learning with language, family life, community memory, and place, yet cultural significance alone does not establish that a repertoire item is singable, comprehensible, or instructionally usable for young children. This distinction is especially important for orally transmitted traditions, where regional versions, dialect patterns, and performance practices may vary and where the classroom version can easily become detached from its documentary source. The educational problem is therefore not simply whether heritage repertoire should be included, but how it can be transformed responsibly into music-learning experiences without obscuring provenance or presenting researcher-designed activities as inherited tradition.

Minnan nursery rhymes provide a productive case through which to examine this problem. They constitute a form of children's oral and musical culture transmitted principally through the Minnan language in southern Fujian and related Minnan-speaking communities. Their themes commonly draw on children's games, animals, nature, family and community life, local foods, festivals, customs, and everyday experience (Chen & Zhou, 2008; Wu et al., 2024). The repertoire includes rhythmically recited forms and sung forms with identifiable melodies. The present study focuses specifically on sung forms that can function as material for listening, singing, rhythmic movement, and performance. Because oral transmission can produce differences in lyrics, pronunciation, melodic contour, and performance style, authenticity is approached here through source traceability and contextual transparency rather than the assumption of one immutable original version (United Nations Educational, Scientific and Cultural Organization [UNESCO], 2003).

In Quanzhou, Minnan nursery rhymes have already appeared in some language activities, cultural activities, competitions, teacher training, and locally developed materials. The problem addressed in the larger doctoral study was therefore not a general absence of Minnan nursery-rhyme education. Rather, the examined curriculum resources, folk-song sources, and local materials served different functions, and a complete, music-centred, and developmentally structured connection between documented repertoire and kindergarten pedagogy was not identified. Folk-song collections can preserve melody, text, provenance, and regional forms, while kindergarten curriculum guidance can specify developmental principles, play, artistic expression, and classroom organisation. Transforming one into the other requires an explicit design process.

This problem has broader international relevance. Heritage-music curriculum development involves recurring tensions between preservation and adaptation, cultural authenticity and classroom usability, challenge and developmental accessibility, and technological support and direct musicking. Studies of traditional children's songs in other cultural settings similarly show that collecting or preserving repertoire is only an initial stage; pedagogical analysis is still required before heritage music can function as child-appropriate curriculum (Kim, 1999). Research in early-childhood music education also shows that children's singing ability, prior experience, and modes of participation vary considerably, while teacher preparation and access to usable musical resources can shape what is practically possible in preschool settings (Bautista, Riaño, Wong, & Murillo, 2024; Rajan, 2017; Welch, Sergeant, & White, 1991).

Research Motivation and Rationale

Academic rationale. Research on traditional children's songs has shown that collection and analysis provide a foundation for educational application but do not, by themselves, constitute a curriculum (Kim, 1999). In early-childhood music education, variation in children's singing development and participation (Welch et al., 1991), alongside differences in teachers' preparation and access to usable resources (Bautista et al., 2024; Rajan, 2017), makes it necessary to connect repertoire analysis with explicit teaching design. The academic motivation for this study is therefore to examine how documented sung Minnan repertoire can be selected and transformed through a transparent process that integrates musical, linguistic, cultural, and pedagogical considerations.

Theoretical rationale. A second motivation lies in a design problem that no single theoretical lens fully addresses. ADDIE supports a traceable progression from needs analysis to design and development (Branch, 2009); sociocultural theory and scaffolding explain how modelling, repetition, visual prompts, and interaction can support children's participation in dialect-based singing (Vygotsky, 1978; Wood et al., 1976); embodied and participatory perspectives illuminate the roles of listening, singing, movement, and role-play (Small, 1998; Leman, 2007); TPACK informs the purposeful alignment of technology with content and pedagogy (Mishra & Koehler, 2006); and formative assessment supports attention to observable learning processes (Black & Wiliam, 1998; Custodero, 2005). The study is motivated by the need to coordinate these perspectives within one connected design pathway, rather than to test them as independent causal theories.

Practical rationale. A practical motivation arises from the conditions of kindergarten teaching in Quanzhou. Minnan nursery rhymes are already encountered in some language and cultural activities, but the presence of songs or cultural materials does not necessarily provide teachers with a complete, music-centred plan for selecting repertoire, modelling dialect, guiding singing and movement, explaining local references, choosing media, and documenting children's participation. The songs themselves vary in vocal range, tessitura, melodic and rhythmic difficulty, phrase and text length, dialect demands, and cultural accessibility. Teachers also need activities that can be adjusted to children's prior experience and delivered within existing classroom routines. A usable module must therefore provide more than a song list: it must connect selection criteria, teacher-facing resources, flexible pedagogy, purposeful technology, and process-oriented assessment.

Developments, challenges, and unresolved issues. A broader development in heritage education is the recognition of oral traditions as living practices that are transmitted and recreated across contexts (UNESCO, 2003), while research on local music emphasises the significance of place and community (Brook, 2013). However, several linked issues remain to be addressed in the classroom development of sung Minnan repertoire: how to make repertoire selection transparent rather than equating heritage value with suitability for young children; how to preserve source traceability while clearly identifying researcher-designed instructional additions; how to coordinate musical, dialectal, cultural, technological, and assessment requirements within a flexible lesson architecture; and how to use expert review to improve a module without treating content validation as evidence of instructional effectiveness. Addressing these issues is worthwhile because it can provide a documented,

context-sensitive, and reviewable design process for local heritage-music education, while avoiding claims that one seven-song set is definitive or universally transferable.

Taken together, these considerations identify a specific product-development gap. Within the literature reviewed for the doctoral study, comparatively limited work connected source and provenance decisions, developmental musical demands, dialect scaffolding, embodied participation, purposeful technology, and process-oriented assessment within one traceable design process for sustained kindergarten use of sung Minnan repertoire. This article addresses that gap through the Analysis, Design, and Development phases of the larger multiphase study. The subsequent bounded classroom implementation is outside the scope of this paper; accordingly, the article makes no claims about child outcomes or instructional effectiveness.

The purpose of the article is to explain how integrated needs evidence and source-sensitive repertoire analysis were translated into a developmentally appropriate Minnan nursery-rhyme music module for 5- to 6-year-old children, and how expert review informed refinement before classroom implementation. Three organising questions are addressed: (1) What content, pedagogical, technological, assessment, repertoire, and contextual requirements emerged from the integrated needs analysis? (2) How were these requirements translated into a source-sensitive, developmentally appropriate seven-song teaching module through repertoire screening and pedagogical transformation? and (3) How did structured expert review support the relevance, appropriateness, and refinement of the developed module prior to implementation?

Literature and Conceptual Framing

Heritage Repertoire, Source Sensitivity, and Early-Childhood Music

Minnan nursery rhymes are best understood simultaneously as local cultural material and as musical material requiring pedagogical analysis. Heritage status provides a rationale for safeguarding and transmission, but it does not determine which songs are appropriate for 5- to 6-year-old children or how they should be taught. UNESCO's (2003) safeguarding framework treats oral traditions, performing arts, and social practices as living heritage whose continuity includes transmission and recreation across contexts. For orally transmitted repertoire, variation is therefore not necessarily evidence of inauthenticity. A source-sensitive educational approach instead asks whether the teaching version can be traced to a documented or reported source, whether regional and dialectal context is made explicit where possible, and whether later instructional additions are identified as pedagogical adaptations.

This distinction matters because Minnan nursery rhymes are not musically homogeneous. Individual songs differ in vocal range, tessitura, melodic contour, intervallic demands, phrase length, metre, tempo, rhythmic organisation, text length, dialect complexity, and cultural content (National Editorial Committee of the Collection of Chinese Folk Songs, 1996). The label nursery rhyme therefore cannot function as a proxy for developmental suitability. A traditional song may be culturally important but still impose substantial vocal, linguistic, or conceptual demands. In this sense, heritage documentation and curriculum design are related but analytically different tasks.

Internationally, this issue appears in other traditional-music settings. Kim (1999), for example, treated the collection and analysis of Korean children's songs as a foundation for educational application rather than as a complete curriculum in itself. Research on local music and place likewise suggests that musical learning can acquire significance through relationships with community and cultural environment, although findings from older learners should not be transferred directly to young children (Brook, 2013). For early-childhood curriculum development, source sensitivity must therefore be combined with developmental analysis and explicit teaching design.

Pedagogical Transformation and Developmental Appropriateness

Developmental appropriateness is not a fixed property established by chronological age alone. Children of the same age may differ in prior musical experience, confidence, Minnan-language exposure, familiarity with local culture, and capacity to sustain different kinds of musical tasks. Studies of young children's singing development have long shown variation in the ways children reproduce pitch, phrase, and song material (Welch et al., 1991). Repertoire selection therefore needs to be paired with adjustable support rather than an assumption that all children should perform the same song with the same degree of independence.

Sociocultural theory provides a useful explanatory lens for this design problem. Learning is mediated through interaction, language, and cultural tools, and participation can be supported within children's zones of proximal development (Vygotsky, 1978). Scaffolding can be enacted through teacher modelling, repetition, rhythmic recitation, phrase-by-phrase singing, visual prompts, guided questioning, peer support, and gradual adjustment of task demand (Wood, Bruner, & Ross, 1976). In dialect-based singing, such support can address both musical and linguistic access without implying that supported task completion is equivalent to independent mastery.

An embodied and participatory orientation further positions music learning as activity rather than verbal transmission. Small's (1998) concept of musicking and Leman's (2007) account of embodied music cognition support listening, singing, rhythmic movement, gesture, games, role-play, and performance as interconnected ways of participating in music. These activities are not merely motivational additions. They can make pulse, phrase, energy, and expressive character perceptible through bodily action and social interaction. At the same time, observable participation should not be conflated with comprehensive musical competence; movement and performance provide meaningful entry points but do not by themselves establish singing mastery.

Design Mechanisms: Technology, Teacher Support, and Formative Assessment

Technology can assist heritage-music learning when it serves an identifiable musical, linguistic, or cultural function. The technological pedagogical content knowledge (TPACK) framework is useful here as a design lens for coordinating content, pedagogy, and technological resources (Mishra & Koehler, 2006). Audio can support melody and pronunciation, lyric charts can link words with images and phrase structure, and brief visual or video materials can contextualise unfamiliar cultural content. The relevant design principle is not technology as an end in itself but technology as a scaffold leading toward direct singing, movement, interaction, and performance. Accordingly, the teacher questionnaire in this study was not treated as a measure of TPACK competence.

Teacher support is equally important. Generalist early-childhood educators may be expected to model singing, maintain pulse, guide movement, support pronunciation, explain cultural references, operate resources, and assess participation within the same lesson. Research has identified constraints related to preschool teachers' musical preparation, confidence, and available resources, as well as a tendency for reproductive musical activities to be more common than more creative participation in some settings (Bautista et al., 2024; Rajan, 2017). A heritage-music module therefore needs teacher-facing resources rather than a repertoire list alone.

Assessment also needs to align with how young children learn in natural musical activity. Formative assessment focuses on evidence generated during learning and can inform judgements about participation, difficulty, and required support (Black & Wiliam, 1998). In music settings, observable evidence may include attentive listening, singing attempts, pulse participation, movement, role-play, cultural recognition, and simple verbal responses. Custodero (2005) similarly demonstrates the value of observing musical engagement in natural activity. The crucial principle is construct-specific interpretation: a child's attempt at a Minnan phrase indicates participation, not verified dialect proficiency; recognition of a cultural object indicates recognition, not stable cultural identity; and supported completion should remain distinguishable from independent performance.

These perspectives are used selectively in the present article. The ADDIE (Analysis, Design, Development, Implementation, Evaluation) model organises the Analysis–Design–Development sequence and makes design decisions traceable (Branch, 2009); sociocultural theory and scaffolding inform mediation; embodied and participatory music learning informs activity design; TPACK informs purposeful technological alignment; and child-centred formative assessment informs the design of observable classroom evidence. None of these frameworks is treated as an empirical outcome. Together they support the design logic summarised in Figure 1: needs evidence → repertoire screening → source/provenance review → pedagogical transformation → expert review → refined module.

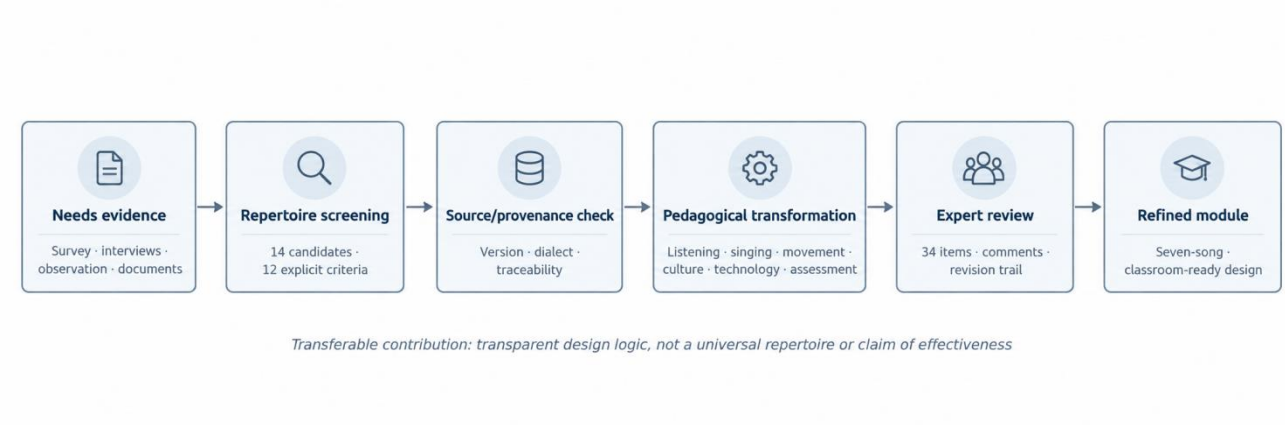


Figure 1. Heritage-to-Pedagogy Transformation Model. The model represents a design pathway rather than a causal model of child outcomes.

Method

Design and Scope

The parent doctoral study used a multiphase mixed-methods design, with ADDIE serving specifically as the instructional-development framework rather than as the overall empirical

methodology (Branch, 2009; Creswell & Plano Clark, 2018). This article reports only the Analysis, Design, and Development phases corresponding to the first three research questions (RQ1 to RQ3) of the thesis. Evidence concerning the later seven-week implementation, child outcomes, and parent interviews is intentionally excluded. The analytical sequence reported here was: needs analysis → cross-source integration → design requirements → criterion-based repertoire screening → module design → expert validation → documented refinement. The Analysis phase drew on four sources: an Early Childhood Educator Questionnaire completed by 200 kindergarten teachers working in Quanzhou; formal semi-structured interviews with two relevant-field experts and four kindergarten teachers; one whole-class contextual observation of an existing kindergarten singing lesson; and documentary evidence covering policy, curriculum, institutional context, repertoire, and local culture. These sources served different evidentiary functions and were not treated as equivalent votes. Table 1 summarises the study phases, data sources, and analytical roles.

Table 1
Study phases, data sources, and analytical roles.

Phase	Data / evidence	Analysis	Article-level role
Analysis	Questionnaire (N = 200); interviews with 2 relevant-field experts and 4 kindergarten teachers; one whole-class contextual singing observation; documentary/repertoire evidence	Descriptive statistics; hybrid deductive–inductive thematic analysis; directed qualitative content analysis; cross-source triangulation	Identify context-specific content, pedagogy, technology, assessment, repertoire, teacher-support, and usability requirements
Design	Integrated needs findings; 14-song candidate pool; selection criteria; module-design records	Criterion-based repertoire screening and design-traceability analysis	Translate needs into seven-song repertoire, instructional procedures, resources, and assessment design
Development	Structured ratings from 3 experts on 34 items; written comments; module-revision records	Descriptive analysis and content validity index (CVI); thematic analysis of comments; revision-traceability analysis	Judge relevance/appropriateness and document justified refinement before implementation

Note. ADDIE organised instructional development; it was not treated as the empirical research methodology. This article reports only the Analysis, Design, and Development phases.

Needs-Analysis Data and Analysis

The formal questionnaire contained 29 five-point Likert items and one optional written-suggestion item. Participants were recruited online through Wenjuanxing using a non-probability approach. Kindergarten affiliation was not collected, so the sample is interpreted descriptively rather than as a statistically representative estimate of all Quanzhou kindergarten teachers. Questionnaire responses were analysed using frequencies, percentages, means, and standard deviations, with medians and interquartile ranges considered where appropriate to the ordinal response format. Five broader groupings used in reporting were conceptual categories rather than factor-validated subscales. The questionnaire was treated as a needs-and-practices instrument, not as a standardised measure of teachers' TPACK competence.

The six formal interview participants addressed musical, cultural, developmental, pedagogical, technological, and assessment requirements. Interview transcripts were analysed using hybrid deductive–inductive thematic analysis following Braun and Clarke (2006). Initial areas derived from the research question and interview protocols, while relevant meanings not adequately captured by the initial framework were retained inductively. Discrepant and conditional perspectives were retained rather than removed.

The contextual observation documented one existing singing lesson in an Upper Kindergarten Class. It examined lesson organisation, teacher modelling, use of resources, movement, interaction, questioning, and classroom participation. Children were not recruited or analysed as individual child-level cases, and the observation was not a pre-test, baseline, or comparison condition. Observation notes were analysed using a hybrid deductive–inductive thematic procedure.

Documentary materials were analysed through directed qualitative content analysis (Hsieh & Shannon, 2005). Predetermined categories concerned content and repertoire, pedagogy, technology, assessment, developmental appropriateness, teacher support, and cultural/contextual requirements, while relevant material outside those categories was retained inductively. Direct full-text or relevant-section evidence, contextual institutional material, and summary- or extract-level sources were differentiated rather than treated as equally direct evidence.

After separate analysis, the four needs-analysis sources were integrated through triangulation. Cross-source comparison examined convergence, complementarity, dissonance, and silence rather than using a majority-vote rule (Farmer, Robinson, Elliott, & Eyles, 2006; Fetters, Curry, & Creswell, 2013). Interpretive weight depended on the question being addressed: for example, repertoire provenance relied primarily on verifiable source material, whereas specialist judgement carried particular weight for vocal and developmental suitability. The output of integration was a set of design requirements that formed the evidentiary bridge to the Design phase.

Design Phase: Repertoire Screening and Design Traceability

No new participant data were collected during Design. A preliminary pool of 14 Minnan nursery rhymes was assembled from the preceding documentary and repertoire evidence. Each candidate was examined against 12 explicit criteria: vocal range, tessitura, melodic and intervallic difficulty, phrase length, metre, tempo, text length, dialect difficulty, cultural accessibility, activity affordance, documentary source trail, and provenance. The unit of analysis was the candidate song in relation to the criteria. Final decisions considered both song-level suitability and whole-repertoire balance.

Design records were used to trace how integrated needs evidence informed learning objectives, the six-component lesson procedure, singing–movement–performance activities, cultural contextualisation, technological resources, teacher scaffolding, and assessment design. Source material was kept analytically distinct from researcher-developed instructional material. This distinction allowed the article to describe adaptation without implying that newly designed lyric charts, movements, stories, videos, or assessment indicators belonged to the inherited performance tradition.

Development Phase: Expert Validation and Revision

Three Development-phase experts independently reviewed the module using a structured 34-item validation form covering seven dimensions: Teaching Module Design and Structural Coherence; Musical Content Appropriateness; Cultural Authenticity; Emotional Engagement and Cultural Connection Design; Theoretical and Policy Alignment; Assessment Design; and Teacher Usability and Practicality. The panel provided complementary expertise in early-childhood education, children's singing pedagogy, Minnan language and culture, local nursery-rhyme practice, curriculum activity design, and classroom implementation, although specialist coverage was not identical across experts.

Each item was rated on a four-point scale. Ratings of 3 or 4 met the predefined relevance/appropriateness criterion. Quantitative analysis included the complete rating distribution, descriptive statistics, the CVI at item level (I-CVI) and at scale level (S-CVI/Ave, the averaging method, and S-CVI/UA, the universal agreement method), following Lynn (1986), Polit and Beck (2006), and Polit, Beck, and Owen (2007). Written comments were analysed thematically, and each documented concern was linked to the researcher's decision, the actual revision made, its rationale, and its location in the revised module. This revision-traceability analysis was used to treat expert validation as formative product refinement rather than as evidence of instructional effectiveness.

Ethics

The larger doctoral study followed the ethical requirements of Universiti Pendidikan Sultan Idris (UPSI) and the participating kindergarten. Adult participants received information about the research and participated voluntarily; teacher consent and parental or guardian consent were obtained where relevant, and children's age-appropriate willingness was respected in the broader study. The study was approved by the UPSI Human Research Ethics Committee (Reference No. 2025-0729-01; approved 28 May 2025). The present article reports only adult needs-analysis evidence, documentary material, one whole-class contextual observation, and module-development/validation evidence.

Results

Integrated Design Requirements

The integrated needs analysis produced five interconnected requirements rather than a list of isolated preferences. First, content needed to be developmentally accessible and culturally grounded. Respondents strongly endorsed the educational and curricular value of Minnan nursery-rhyme singing, while the song/content reporting group reached M = 4.346. Interviews and documentary sources further indicated that cultural value could not substitute for analysis of vocal demands, dialect difficulty, text, cultural accessibility, activity potential, and provenance. The resulting requirement was to establish explicit repertoire-selection criteria before deciding the final songs.

Second, pedagogy needed to be participatory but scaffolded. The Pedagogical Approaches reporting group had the highest questionnaire mean (M = 4.417; 92.3% agreement), and interview participants supported singing, movement, games, role-play, contextualisation, cooperation, and differentiated teacher support. The contextual observation also showed modelling, focused listening, phrase practice, movement, questioning, group work, and sharing in an existing singing lesson. These sources converged on a structured but adjustable

approach centred on active musical participation, with modelling and scaffolding available when required.

Third, technology needed to function as a purposeful scaffold. The Technology Integration reporting group reached *M* = 4.393 with 92.2% agreement. Participants supported audio, presentation slides, short video, visual materials, and lyric charts but also cautioned against allowing screens to replace interaction. The integrated design principle became technology → comprehension or modelling → active musical participation. Digital resources were therefore justified only when they supported a specific musical, linguistic, or cultural function. Fourth, assessment needed to be process-oriented and multi-source. The Assessment and Collaboration reporting group reached *M* = 4.359 with 90.6% agreement. Interviews emphasised observable classroom participation and practical record keeping, while the contextual lesson showed that singing, movement, questioning, group activity, and oral response naturally generated information about learning. The resulting design requirement was to combine structured classroom observation, lesson-specific formative assessment, and brief qualitative records, while treating later teacher or family reports as supplementary rather than as direct standardised measures.

Fifth, the module needed to remain usable within existing kindergarten routines. Needs evidence pointed to flexible timing, accessible resources, repeated exposure, and teacher-facing support. This issue was reinforced by the Teacher Readiness and Resources reporting group, which was lower than the other groups (*M* = 4.059; 78.3% agreement). Prior professional preparation and confidence were comparatively less strongly endorsed, while 89.5% of respondents agreed that specialised training was needed before teaching Minnan nursery rhymes. The module therefore incorporated model audio, pronunciation and dialect support, scores where available, lyric explanations, cultural notes, lyric charts, and adaptable activities rather than assuming specialist prior preparation.

Table 2 summarises how these requirements were supported, qualified, or contextualised by the four evidence sources. The central point is that integration did not operate through a simple majority rule. Questionnaire evidence represented reported needs and preferences; interviews contributed professional and practice-based explanations; the observation supplied bounded contextual evidence; and documents supplied policy, developmental, repertoire, and cultural evidence of varying directness.

Table 2
Integrated needs-analysis requirements and design implications.

Integrated requirement	Evidence pattern	Design implication
Developmentally accessible and culturally grounded content	Song/content reporting group M = 4.346; interviews stressed singability and comprehensibility; documents supplied developmental and provenance evidence	Screen repertoire using musical, linguistic, cultural, activity, and source-traceability criteria rather than cultural value alone
Participatory but scaffolded pedagogy	Pedagogy M = 4.417; 92.3% agreement; interviews and observation supported modelling, listening, movement, games, role-play, interaction, and differentiated support	Use singing–movement–performance activities with modelling, visual prompts, peer support, repetition, and adjustable scaffolding
Purposeful technology	Technology M = 4.393; 92.2% agreement; participants supported audio/visual resources but cautioned against replacing interaction	Use audio, lyric charts, images, and short video for access or clarification, followed by active musicking
Process-oriented assessment	Assessment/collaboration M = 4.359; 90.6% agreement; interviews emphasised observable classroom participation and practical records	Combine structured observation, lesson-specific formative assessment, and brief qualitative records
Usability within kindergarten routines	Teacher readiness/resources M = 4.059; 78.3% agreement; 89.5% endorsed specialised training; interviews stressed practical resources and flexible timing	Provide teacher guide, model audio, dialect/cultural support, and adaptable pacing rather than assuming specialist prior preparation

Note. Means and agreement percentages describe the 200 survey respondents and should not be interpreted as population estimates for all Quanzhou kindergarten teachers.

Repertoire Screening and Pedagogical Transformation

The Design phase converted the five requirements into an explicit development pathway: integrated needs requirements → design specifications → 14-song candidate repertoire → 12 selection criteria → song-level screening → whole-repertoire balancing → seven selected songs → source/provenance review → pedagogical transformation → resource and assessment alignment. This sequence made the repertoire decision visible rather than presenting the final songs as an unexplained list.

The 12 screening criteria covered musical-developmental, linguistic, cultural, pedagogical, and source-related dimensions. Six addressed musical-developmental demands (vocal range, tessitura, melodic/intervallic difficulty, phrase length, metre, and tempo); two concerned text and dialect; and the remaining criteria examined cultural accessibility, activity affordance, documentary source trail, and provenance. A song was not excluded merely because it was culturally complex or musically challenging, but the criteria made clear where additional demands accumulated.

The screening process also made non-selection informative. Rocking the Baby was not selected because a wider vocal span and more demanding melodic or ornamental characteristics placed greater demands on stable imitation and pitch control. Koxinga of Shijing was recognised for local historical value but required substantial contextual explanation and was less readily transformable into familiar child-centred activity. White Egret presented a comparatively wide reported range, while The Pudu Festival Is Coming combined wider vocal demands with relatively complex ritual-cultural content. Oyster

Vermicelli and Red Tortoise Cake were not rejected as culturally unsuitable; tempo and thematic redundancy were considered within the broader need for whole-repertoire diversity. These decisions show that the process was neither a ranking of cultural value nor a search for the “best” Minnan songs.

Seven songs were ultimately selected: Ti-O-O / The Dark Sky; A Little Bird; Letting the Chickens and Ducks Out; Jumping over the Fire Heap / Tiao Huo Qun; Moonlight, Moonlight Bright; The Rabbit’s Eyes Are Like Agate; and Winter Festival / Winter Solstice / Dongjie. As Table 3 shows, the selected set offered contrasts in musical character, narrative quality, animal and nature imagery, counting and play, festival experience, collective movement, gentle listening, and family/home connection. The set is therefore one defensible instructional repertoire for the study context, not a definitive Minnan canon.

A central result of the Design phase was the explicit separation of inherited source material from researcher-developed pedagogy. The source layer comprised documented or reported song titles, melodies and notation where available, lyrics, dialect expressions, metre and other musical characteristics, source/version information, and associated cultural material. The instructional layer comprised learning objectives, seven-week sequencing, contextual introductions, listening tasks, lyric charts, dialect modelling, rhythmic recitation, echo and phrase-by-phrase singing, movement, games, role-play, cultural images and stories, teacher questions, scaffolding, reflection, and assessment indicators. Table 4 makes this boundary explicit.

This distinction also protected against overclaiming musical alteration. Adding a lyric chart, a story, a movement sequence, or a cultural video did not mean that the traditional melody had been reconstructed. Where documentary evidence did not establish one unique original key or version, the study did not infer one. Expert advice that a teacher might adjust register or tempo when necessary was treated as conditional pedagogical guidance unless an actual alteration was documented.

Table 3
Seven selected songs and principal rationale.

Selected song	Principal selection rationale
Ti-O-O / The Dark Sky	Manageable span and concentrated tessitura in the available analysis; concrete weather/life imagery, repetition, and narrative qualities support storytelling, role-play, and movement
A Little Bird	Short, lively, and repetitive material; accessible animal/nature imagery; strong potential for sound imitation and bodily movement
Letting the Chickens and Ducks Out	Counting/action structure and familiar animal imagery support rhythmic movement, games, singing, and cooperation
Jumping over the Fire Heap / Tiao Huo Qun	Distinctive Minnan festival context with strong possibilities for collective movement, rhythm, and symbolic performance
Moonlight, Moonlight Bright	Relatively narrow range in the available analysis; lyrical character and family/home imagery provide a contrast to more active repertoire
The Rabbit's Eyes Are Like Agate	Approximately minor-sixth span in the available analysis; familiar rabbit imagery supports movement and a locally contextualised craft connection
Winter Festival / Winter Solstice / Dongjie	Concrete seasonal and family-life content connects with tangyuan-making, family reunion, movement, and cultural questioning

Note. The seven songs form one defensible instructional repertoire for this study; they are not presented as a definitive Minnan nursery-rhyme canon.

Table 4
Distinguishing inherited heritage material from researcher-developed instructional material.

Layer	Included material	Boundary maintained
Inherited / documented source material	Song title; melody/notation where available; lyrics; Minnan dialect expressions; metre and other musical characteristics; source/version information; associated cultural context	Source status and regional/version information were reported according to available evidence; no single immutable original was assumed where documentation did not support it
Researcher-developed instructional material	Learning objectives; seven-week sequencing; contextual introductions; focused listening; lyric charts; dialect modelling; rhythmic recitation; echo/phrase singing; movement; games; role-play; cultural images/stories/video; teacher questions; scaffolding; reflection; assessment indicators	Pedagogical adaptation was reported as researcher-designed teaching support and not as evidence of traditional performance practice or melodic reconstruction

Note. Pedagogical additions were treated as instructional transformations, not as evidence that the traditional songs themselves were reconstructed or that newly designed classroom activities formed part of inherited performance practice.

Module Architecture

The seven selected songs were organised into a seven-week module. At the macro level, the weeks were arranged through four changing instructional emphases: Engagement →

Recognition → Expression → Internalization/Reflection. These labels described curriculum emphasis and did not represent measured psychological stages or a predetermined developmental trajectory.

At lesson level, a relatively stable six-component structure provided procedural continuity: Contextual Introduction → Focused Listening → Lyric Chart and Dialect Modelling → Singing and Movement → Cultural Connection → Reflection and Summary. The sequence was deliberately flexible. Different songs presented non-equivalent musical, linguistic, and cultural demands, so teachers could adjust pacing, repetition, sequence, grouping, movement, and degree of scaffolding while retaining the main learning purposes.
The weekly design illustrates how this flexibility operated. The Rabbit's Eyes Are Like Agate combined 2/4 metre, dialect imitation, rabbit imagery, and a local craft connection; Letting the Chickens and Ducks Out used counting, action, and cooperative play; A Little Bird emphasised repeated phrases, sound imitation, and nature imagery; Winter Festival connected seasonal custom and family experience with singing and beat; Ti-O-O used weather imagery, narrative sequence, and role-play; Jumping over the Fire Heap supported festival context and collective rhythmic participation; and Moonlight, Moonlight Bright provided a slower 4/4 contrast oriented toward focused listening, gentle singing, family/home imagery, and reflective response.

Technology and assessment were embedded within this architecture rather than added as separate components. Audio supported melody and pronunciation; lyric charts supported phrase and language access; images and short videos supported cultural contextualisation; and non-digital alternatives such as live singing, piano, printed images, objects, and stories remained available. Assessment indicators were aligned with observable learning opportunities, including attentive listening, singing and rhythmic participation, movement and performance, dialect/lyric response, and cultural recognition and contextual understanding. These indicators were intended to document process, not to collapse several complex constructs into a single score.

Expert Validation and Refinement
The three experts completed all 34 validation items, producing 102 ratings with no missing data. Every item received a rating of either 3 or 4 from all three experts, yielding I-CVI = 1.00 for all 34 items, S-CVI/Ave = 1.00, and S-CVI/UA = 1.00. However, the rating distribution qualified any impression of "perfect" validation: 88 ratings (86.27%) were 4 and 14 (13.73%) were 3, where 3 explicitly meant appropriate but requiring minor revision. The pooled result was $M = 3.863$, $SD = 0.346$, and all three experts selected Accept after minor revision.

Domain means also identified areas where support was comparatively more conditional. Cultural Authenticity had the highest mean ($M = 3.933$), followed by Emotional Engagement and Cultural Connection Design ($M = 3.917$). Teacher Usability and Practicality had the lowest domain mean ($M = 3.750$), followed by Assessment Design ($M = 3.800$). The lowest documented item mean was item F2 ($M = 3.33$), concerning whether observation indicators sufficiently reflected children's musical participation and engagement. These differences did not negate content relevance; they helped identify where revision was most necessary.

The qualitative revision trail was therefore more informative than the CVI values alone. Six representative examples illustrate the process. First, a recommendation for more localised Minnan terminology was partially adopted: pronunciation guidance was strengthened, but documented source-version titles were retained where replacing them would have weakened source traceability. Second, concerns about vocal demands led to flexible guidance on register, tempo, and phrase-based modelling rather than an unsupported claim that actual transposition occurred. Third, the common lesson framework was made more flexible so that sequence, emphasis, and timing could vary with song characteristics. Fourth, complete or focused listening was strengthened before reproduction and singing. Fifth, cultural reflection questions were expanded beyond simple liking/disliking toward child-accessible questions about cultural meaning and everyday experience. Sixth, selected dialect and cultural explanations were corrected or clarified, and teacher guidance was strengthened.

Additional revisions addressed prior experience, observable emotional response, supplementary child-generated classroom evidence, model audio, play-based activities, more interactive lyric charts, and flexible timing. Not every expert suggestion was automatically adopted in its strongest possible form; the revision matrix retained a distinction among expert concern, researcher decision, actual change, and evidentiary boundary. The refined module was subsequently considered ready to enter the larger study's bounded classroom implementation, which is reported separately. Table 5 summarises the overall validation result and the representative revision trail.

Table 5
Expert validation and representative revision trail.

Validation / revision issue	Evidence or expert concern	Response / interpretation
Overall validation	34 items × 3 experts = 102 ratings; I-CVI = 1.00 for all items; S-CVI/Ave = 1.00; S-CVI/UA = 1.00; 88 ratings of 4 and 14 ratings of 3; pooled M = 3.863, SD = 0.346	All experts recommended Accept after minor revision; results support relevance/appropriateness and refinement, not "perfect validation" or effectiveness
Minnan terminology	More localised and standardised expressions were recommended	Partially adopted: pronunciation guidance was strengthened while documented source-version titles were retained where necessary
Vocal demands	Some songs could require register, tempo, or phrase-level support	Added flexible guidance for register/key adjustment where necessary, slower tempo, and phrase-by-phrase modelling; no undocumented transposition was claimed
Lesson structure	Common framework appeared relatively fixed	Retained the six-component framework but allowed sequence, emphasis, and timing to vary by song
Complete listening	More complete listening was recommended before reproduction	Added focused/complete listening before singing and reproduction tasks
Cultural reflection	Closing questions sometimes focused mainly on preference	Added child-accessible questions about cultural meaning and everyday-life connection
Dialect/cultural accuracy	Selected lexical and cultural explanations required greater precision	Corrected relevant explanations and strengthened teacher cultural guidance

Note. A rating of 3 met the relevance criterion but indicated that minor revision was appropriate. The CVI results therefore support relevance and appropriateness, not perfection or instructional effectiveness.

Discussion

The central contribution of this study is not the addition of seven traditional songs to a kindergarten curriculum. It is the design logic through which heritage repertoire was transformed into classroom-ready early-childhood music pedagogy. The results support a curriculum-transformation principle rather than a content-insertion principle: culturally valued repertoire still needs to be selected, mediated, scaffolded, resourced, and assessed through developmentally appropriate musical tasks. This distinction is transferable beyond Quanzhou because similar tensions arise wherever local or oral repertoire is introduced into formal educational settings.

The first implication concerns source sensitivity. In living oral traditions, educational authenticity is better protected through traceability and transparency than through claims of a single recoverable original. The study preserved a boundary among source version, teaching version, and pedagogical treatment. That boundary allows curriculum designers to adapt tempo of instruction, sequencing, visual support, movement, or cultural explanation without presenting those instructional choices as inherited tradition. It also clarifies the originality of curriculum-development research: the contribution lies in the pedagogical system built around traditional material, not in claiming authorship of the songs themselves. This approach is consistent with the conception of intangible heritage as transmitted and recreated across contexts (UNESCO, 2003).

Second, developmental appropriateness emerged as a multidimensional judgement rather than an age label. Vocal range and tessitura mattered, but so did phrase length, rhythmic organisation, text load, dialect difficulty, cultural accessibility, activity affordance, and provenance. The 14-to-7 screening process therefore demonstrates why repertoire selection should combine musical, linguistic, cultural, and pedagogical criteria. Whole-repertoire balance added another layer: a set of individually manageable songs could still be poorly designed if it lacked contrast in musical character, cultural theme, or participation opportunities. The final seven-song set was consequently justified as one context-sensitive instructional repertoire rather than as a canon.

Third, participatory pedagogy and sociocultural scaffolding provided practical mechanisms for making unfamiliar dialectal repertoire accessible. The design did not require every child to enter through complete song reproduction. Focused listening, rhythmic speech, echo singing, movement, role-play, visual prompts, guided questions, and peer participation created multiple routes into the same musical material. This is compatible with sociocultural accounts of mediated participation (Vygotsky, 1978; Wood et al., 1976) and with embodied views of music learning as bodily, social, and performative activity (Leman, 2007; Small, 1998). Importantly, the design preserved the distinction between accessible participation and demonstrated mastery.

Fourth, the technology findings reinforce a restrained interpretation of digital support. High questionnaire endorsement did not justify a technology-rich lesson for its own sake. Instead, the design principle was functional: use technology where it improves access to melody, pronunciation, lyric structure, or cultural context, then return children to direct musicking. This operationalises TPACK as fit among content, pedagogy, and technological resources

(Mishra & Koehler, 2006) while avoiding the stronger and unsupported claim that the questionnaire measured teachers' TPACK competence.

Fifth, expert validation was most useful when numerical relevance ratings were connected to qualitative feedback and a transparent revision trail. The CVI values established that all items met a predefined relevance threshold, but the 14 ratings of 3 and the recommendation of Accept after minor revision showed that the product still needed work. The domain means and item-level variation identified where revision pressure was strongest, while written comments explained why. Treating validation in this formative way avoids the common but problematic move from expert endorsement to claims of instructional effectiveness. Content validation can strengthen plausibility, relevance, coherence, and usability; it cannot substitute for evidence of what happens when children later encounter the module.

The triangulated needs-analysis strategy also illustrates a methodological point for curriculum-development research. Different forms of evidence were useful for different design questions. Teacher survey data captured reported needs and preferences, interviews contributed professional explanation, observation situated the design within actual classroom organisation, and documents provided curriculum, developmental, and provenance evidence. Their value lay in complementarity and qualification rather than numerical accumulation. By explicitly retaining dissonance and silence, the study avoided treating four sources as four independent confirmations of the same proposition (Farmer et al., 2006; Fetters et al., 2013).

Taken together, these findings suggest a transferable Heritage-to-Pedagogy Transformation Model: contextual needs evidence → criterion-based repertoire screening → source/provenance check → pedagogical transformation → expert review → refined module. The model is transferable as design logic, not as a fixed package. Application in other local-music contexts would require new decisions about repertoire, dialect or language, teacher preparation, curriculum structures, and culturally meaningful forms of participation.

Implications, Limitations, and Conclusion

Implications for Curriculum and Teacher Education

For curriculum designers, the study suggests that heritage inclusion should be planned at the level of repertoire, pedagogy, resources, and assessment rather than at the level of cultural symbolism alone. A local song becomes educationally useful when its source is traceable, its musical and linguistic demands are understood, and its teaching design creates meaningful opportunities to listen, sing, move, interact, and connect cultural material with lived experience. For teachers, the findings support resource systems that include model audio, pronunciation guidance, lyric support, cultural notes, flexible activities, and process-oriented assessment. Such support should enhance rather than replace professional judgement.

The design logic may also inform teacher education. Generalist early-childhood teachers do not need to become specialist folk performers, but they need enough musical, linguistic, cultural, and pedagogical support to model repertoire accurately and adapt tasks responsibly. Professional development can therefore focus on source-sensitive repertoire use, children's vocal and developmental needs, scaffolding, embodied participation, and construct-specific assessment.

Limitations

Several limitations define the claims that can be made. The questionnaire used non-probability online recruitment, and the 200 respondents should not be treated as a representative probability sample of all kindergarten teachers in Quanzhou. The contextual observation involved one existing singing lesson and served only as bounded evidence of classroom organisation and teaching conditions. Documentary sources varied in directness, so source-specific limitations were retained rather than resolved through inference. Only three experts participated in the focused content-validation stage; their complementary expertise supported relevance and refinement but should not be described as broad field consensus. Finally, this article does not evaluate child outcomes. The refined module subsequently entered a bounded classroom implementation in the larger doctoral study, but those data are intentionally outside the present paper.

Conclusion

Culturally significant repertoire does not become developmentally appropriate kindergarten music simply by being selected for classroom use. In this study, Minnan nursery rhymes were transformed through a transparent process that linked needs evidence, source-sensitive repertoire screening, pedagogical design, purposeful technology, process-oriented assessment, and expert-informed revision. Fourteen candidate songs were examined against explicit criteria and seven were selected through song-level suitability and whole-repertoire balance. The module then distinguished inherited musical-cultural material from researcher-developed pedagogy and organised the repertoire through a flexible early-childhood music framework.

The transferable contribution is therefore not the claim that these seven songs are universally preferable, nor that expert validation proves instructional effectiveness. It is a disciplined Heritage-to-Pedagogy Transformation process that makes design decisions visible and reviewable. Such a process offers one way for early-childhood music education to engage living heritage responsibly: preserving source traceability while creating developmentally responsive opportunities for children to participate in music.

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