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STRUCTURED-REPRODUCTIVE AND CREATIVE MUSICAL ACTIVITIES: AN EMPIRICAL STUDY ON PRESCHOOL TEACHERS' PRACTICES IN KINDERGARTEN

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Abstract/Izvleček

This paper examines musical activities in the integrated curriculum of early childhood education and care settings. The research results show a predominance of structured-reproductive musical activities, mainly music listening. Creative musical activities are significantly less represented, although some statistical differences are evident. Graduate students working with preschool groups implement creative activities more frequently than undergraduate students or those working with nursery groups. The findings suggest further research into the possibilities of active and multimodal music listening, as well as strengthening educators' musical competences to support children's holistic development.

Keywords:
curriculum, integration, kindergarten, music, student-early childhood educators.

Strukturirano-reproduktivne in ustvarjalne glasbene dejavnosti: empirična raziskava o praksah vzgojiteljev v vrtcu

V prispevku preučujemo glasbene dejavnosti v integriranem kurikulumu predšolske vzgoje in izobraževanja. Rezultati raziskave kažejo na prevladovanje strukturirano-reproduktivnih glasbenih dejavnosti, predvsem poslušanja glasbe. Ustvarjalne glasbene dejavnosti so znatno manj zastopane, čeprav so opazne nekatere statistične razlike. Študenti magistrskega študija, ki delajo v skupinah drugega starostnega obdobja (vrtčevske skupine), pogosteje izvajajo ustvarjalne dejavnosti kot študenti dodiplomskega študija ali tisti, ki delajo v skupinah prvega starostnega obdobja (jasli). Izsledki nakazujejo potrebo po nadaljnjih raziskavah o možnostih aktivnega in multimodalnega poslušanja glasbe ter po krepitvi glasbenih kompetenc vzgojiteljev za podporo otrokovega celostnega razvoja.

Ključne besede:
kurikulum, integracija, vrtec, glasba, študenti predšolske vzgoje.

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Introduction

Early Childhood Education and Care (ECEC) supports children's growth, development, and learning, as well as health care, nutrition, and hygiene, while facilitating their cognitive, social, physical, and emotional development (UNESCO, 2024). The outcomes are evident in children's readiness for lifelong learning, developed communication skills, capacity for collaboration, and achieved levels of emotional stability and motor proficiency.

Interdisciplinary research on the impact of high-quality ECEC on children's well-being, both during childhood and into adulthood (Magnuson et al., 2007), has led to changes in national curricula. The preschool education system in the Republic of Croatia has moved away from a content-centred approach, focusing instead on the child as a competent being (Slunjski, 2012) and a co-constructor of their own upbringing (Bašić, 2011).

Since each stage of a child's development unfolds holistically in an integrated manner and at an individual pace, activities need to be based on children's interests and preferences, fostering initiative and autonomy. In this context, the arts are a vital domain as they enable children to experience, understand, and express themselves and the world around them (MZOS, 2015). Although there is consensus on the importance of music education, its global implementation faces numerous challenges related to the methods used for implementing musical activities (Kulset and Halle, 2025). Therefore, it is essential to determine methods for implementing musical activities in kindergartens as a means towards considering innovative possibilities for integrating music with other domains.

The Role of Music and Musical Activities in ECEC

Music has a fundamental place in a child's upbringing, including physical, cognitive, emotional, and social growth (Selmani, 2024). It serves as a means of holistic learning, activating multiple sensory channels simultaneously (Marinšek et al., 2020). Exposure to musical content and participation in musical activities motivate children, encouraging more active engagement in other activities (Ruokonen et al., 2021), given the integrated, multimodal, and interdisciplinary approaches promoted in the preschool environment. Music integration is further recognised for its contribution to cultural diversity and inclusivity, relationship building, healthy lifestyles, and social cohesion, as well as for its broader neurocognitive, linguistic,

physical, mathematical, and motivational benefits for children's development (Babalola et al., 2025; Chen-Hafteck and Mang, 2018; Collins, 2024; Putkinen et al., 2015). To support the holistic development of the child, it is crucial to encourage active participation and ensure equal representation for all forms of musical activity (Denac, 2012).

Early childhood development is linked to the implementation of diverse musical activities, which are primarily conducted through play, either as individual exploration or as organised group activities (Alsedrani, 2024). Core musical activities include both reproductive and creative forms, such as singing, listening to music, elementary instrument playing, movement, and musical creativity, with singing and listening to music consistently identified as the most common (Bačlija Sušić, 2018; Dobrota and Sodina, 2025).

Singing influences a child's cognitive, emotional, and social development. When selecting repertoire, educators choose songs that are appropriate in terms of lyrics, vocal range, and style (Gospodnetić, 2015). Singing is typically linked with movement and everyday communication and is often accompanied by activities from other curricular domains (Andrews, 2011; Barrio and Arús, 2024; Rickert, 2022).

The approach to music listening in kindergarten depends on specific goals and purposes. Both active and passive modes of listening are used. Passive listening does not involve consciously directed attention, whereas active listening requires attention to be focused on musical elements and the musical work as a whole. Active listening is typically implemented through play, integrating movement, visualisation, verbal interpretation, and improvisation with other curricular domains (Blašković and Kuliš, 2017; Gault, 2022; Kerchner, 2014).

Body percussion and rhythmic instrument playing, mainly used to accompany songs and nursery rhymes, further support children's emotional and social development and musical creativity (Yeni et al., 2023; Young, 2003). Musical creativity can be linked to all musical activities: music listening combined with movement, dance, and visual expression; the modification of existing melodies and rhythms; the production of sounds; the sonic orchestration of stories, etc. Such activities support children's creative potential and enable free movement between forms of musical expression (Bačlija Sušić, 2018; Ho et al., 2024).

Musical activities in ECEC are crucial for the development of a child's personality, as they support the acquisition of musical experience, foster the development of

musical skills and enhance emotional and musical sensitivity (Bačlija Sušić et al., 2025). Their full integration therefore requires careful, interdisciplinary design that meets children's spontaneous need for multimodal musical expression (Barrett et al., 2022; Sarrazin, 2016).

Method

This research is part of the project "ISTRA – Researching Composing Heritage: Musicological, Educational and Performance Potentials (ISTRAMUZA)", work package 3, approved on 30 December 2025 by the Research Ethics Committee of Juraj Dobrila University of Pula (CLASS: 602-02/25-13/49 REG. NO.: 143-01-25-2).

Aim

The research aimed to examine the prevalence of musical activities in ECEC, with particular emphasis on listening to classical and traditional music.

Research problems

The research objective led to several research questions, of which the following are addressed in this paper:

1. How frequently do students who work in kindergartens use music in their work with children at early and preschool age, and with which musical activities?
2. Are there statistically significant differences among respondents with different sociodemographic characteristics regarding the forms of musical activities used?

Sample

Participants in the study comprised 122 respondents enrolled in Early Childhood and Preschool Education programmes in Osijek, Petrinja, Pula, Slatina, Slavonski Brod, Split and Zadar, all of whom were female. Of these respondents, 50% are currently enrolled in an undergraduate programme, while the remaining 50% are attending a graduate programme in Early Childhood Education and Care. The majority have no formal music education (N=110, 90.2%). However, 46 (37.7%) reported that they actively participated in some form of formal or informal musical activity (e.g., playing an instrument, singing in a choir, folklore, orchestra, etc.).

Open-ended responses indicated that the respondents primarily cited choir singing and participation in folklore societies. Furthermore, 77 respondents (63.1%) stated that they did not play any instrument.

Instrument

Data were collected using a structured questionnaire designed for students – early childhood educators, titled *Listening to Music in Early Childhood Education and Care*. The instrument was developed specifically for this study.

The questionnaire included several sections, covering demographic and professional background variables, as well as items related to musical education and experience. The main part of the instrument focused on the representation, implementation, and characteristics of musical activities, with particular emphasis on listening to music. The participants responded to a series of Likert-type items (five-point scale) assessing the frequency of musical activities (such as singing, playing instruments, listening to music, musical games, dancing, and creative activities), as well as their self-perceived competences and attitudes towards music listening.

To examine the underlying structure of the scales, an exploratory factor analysis was conducted.

In addition to descriptive and correlational analyses, inferential statistical procedures were applied, including t-tests, one-way ANOVA, and Tukey HSD post hoc tests, depending on the nature of the variables.

Overall, the instrument demonstrated satisfactory psychometric properties and enabled a comprehensive assessment of educators' practices, competences, and attitudes regarding music activities, particularly music listening in early childhood education.

Procedure

The study was conducted between January and April 2026 among undergraduate and graduate students enrolled in Early Childhood and Preschool Education programmes who were already employed in kindergartens. Data were collected using an online questionnaire distributed via Google Forms. The survey link was sent to participants through their universities' institutional communication channels.

Participation in the study was voluntary and anonymous, and the respondents provided informed consent before completing the questionnaire. Only participants currently working in early childhood education settings were included in the sample.

Results and discussion

Ad 1) Representation of musical activities in kindergarten

To determine the representation of different musical activities in the respondents' work, a scale with eight items was used. The respondents could select one of the frequency responses on a Likert scale from 1 to 5 (1 – not represented, 2 – very rarely, 3 – once a week, 4 – two to three times a week, 5 – daily). Table 1 shows that listening to music (M = 4.39, SD = 0.87) received the highest values, making it the most frequently implemented musical activity among the respondents. This is followed by singing (M = 4.18, SD = 1.03) and dancing (M = 4.12, SD = 1.04), while creative activities (M = 2.82, SD = 1.24), playing instruments (M = 2.15, SD = 1.03), and other activities are the least represented. While research often identifies singing as the most frequent activity in kindergarten (Dobrota et al., 2021; Mihelač, 2022; Ruokonen et al., 2021; Vidulin, 2016), the results of this study show a reversal, in favour of listening to music. This finding necessitates a clear distinction between listening to music as a sound background (passive listening) and active listening as a planned musical activity. Passive listening often accompanies relaxation or transitions (Kirby et al., 2023; Rajan, 2017), and previous studies have noted its predominance in practice where music remains merely in the background (Kondracka-Szala and Michalak, 2018). In contrast, active listening is a core element of the contemporary curriculum focused on musical exploration and creativity (Mendeš and Dobrota, 2023). It is probable that respondents included both forms in their assessments, which explains the high reported frequency but also underscores the importance of more intentionally integrating active listening into pedagogical practice. This transition is crucial for aligning practice with the National Curriculum's vision of the child as an active researcher and explorer (MZOS, 2015). By using music as an active pedagogical tool, educators can better satisfy the curriculum's requirements that foster creativity, holistic development, and multimodal learning. The more frequent use of listening, singing, and dancing activities compared to creative work and playing of instruments can be attributed to the insufficient practical training of preschool teachers and their preference for activities that do not require specialised knowledge or skills. Other factors may include limited material resources in the kindergarten, constraints of the daily schedule, and larger group sizes. A larger number of children in a group restricts the

implementation of more complex musical activities, indicating that preschool teachers tend to choose activities suitable for group settings and requiring minimal individual adaptation.

Table 1

Scale of the Representation of Musical Activities

Musical activities	N	Min.	Max.	M	SD
Listening to music	122	1.0	5.0	4.393	0.8772
Singing songs	122	1.0	5.0	4.189	1.0392
Dancing	122	1.0	5.0	4.123	1.0490
Counting rhymes	122	1.0	5.0	3.852	1.0731
Musical games	122	1.0	5.0	3.418	1.2118
Musical creativity	122	1.0	5.0	2.820	1.2466
Playing instruments	122	1.0	5.0	2.156	1.0367
Other	122	1.0	5.0	2.057	1.0932

Note. M = mean; SD = standard deviation.

Ad 2) Differences among respondents with different sociodemographic characteristics in the forms of musical activities used: level of study, participation in formal and informal forms of musical activity, playing an instrument, employment group

Factor analysis on the scale of frequency of implementation of musical activities

To examine the underlying structure of the Frequency of Implementation of Musical Activities scale, an exploratory factor analysis was conducted using Principal Axis Factoring with Direct Oblimin rotation. The results confirmed that the data were suitable for factor analysis (Table 2).

Table 2

Factor Structure of the Frequency of Implementation of Musical Activities Scale

Item	Structured-reproductive musical activities (ReprGlAkt)	Creative musical activities (KreatGlAkt)
Singing songs	.829	—
Reciting counting-out rhymes	.793	—
Dancing	.712	—
Listening to music	.694	—
Musical creativity	—	.713
Musical games	—	.592
Playing instruments	—	.540

Note. KMO = .804; Bartlett's test of sphericity $\chi^2(21) = 294.044$, $p < .001$; total explained variance = 63.22%; factor correlation r = .48; Cronbach's α for ReprGlAkt = .852; Cronbach's α for KreatGlAkt = .652.

Such a factor structure indicates a clear separation between reproductive and creative musical activities. The first factor includes activities that are part of standard work in kindergarten and are carried out more frequently, while the second factor includes those performed less frequently in practice and requiring a higher level of musical competence from preschool teachers.

To verify the adequacy of further analyses, the normality of the distribution was examined. The values of skewness and kurtosis were within acceptable limits (ReprGlAkt: skewness = -0.999, kurtosis = 0.706; KreatGlAkt: skewness = -0.346, kurtosis = -0.573), indicating no significant deviations from the normal distribution. The resulting factor structure indicates a clear distinction between *structured-reproductive* and *creative musical activities*. Activities such as singing, counting-out rhymes, dancing, and listening to music were grouped together, reflecting their role as routine, teacher-led practices that are easily integrated into daily work. On the other hand, creative activities, including musical creativity, musical games, and playing instruments, form a separate factor, indicating an exploratory and child-centred approach. Their lower representation suggests that these activities are carried out less frequently and require a higher level of teacher competence (Trujillo Galea and Juárez Ramos, 2024). The more frequent use of reproductive musical activities compared to creative activities has also been confirmed by earlier research (Bautista et al., 2024). The observed distribution of musical activities in kindergarten practice is inconsistent with the objectives of the National Curriculum, which prioritizes holistic development, creativity, and multimodal learning (MZOS, 2015). Furthermore, this discrepancy indicates a deviation from the Council Recommendation on High-Quality ECEC Systems (2019), which identifies music and arts as essential components of a holistic curriculum designed to foster creativity and active participation. The predominance of structured and reproductive activities observed in this study may indicate that musical experiences are still more frequently organised around predetermined content rather than around open, exploratory, and child-initiated forms of musical expression. This finding underscores the National Curriculum's emphasis on music as a means of exploration, creativity, and integrated learning (MZOS, 2015).

Level of study

To determine whether there are statistically significant differences in the representation of *structured-reproductive* and *creative musical activities* between the respondents who are currently undergraduate and graduate students, an independent-samples t-test was conducted.

Before the analysis, homogeneity of variance was assessed using Levene's test. Since a statistically significant deviation from the assumption of equal variances was found for both variables (ReprGlAkt: $F = 4.25$, $p = .041$; KreatGlAkt: $F = 8.37$, $p = .005$), indicators that did not assume equal variances were used in interpreting the results.

The results show that there is no statistically significant difference in the representation of *structured-reproductive musical activities* between undergraduate students ($M = 4.04$, $SD = 0.95$) and graduate students ($M = 4.24$, $SD = 0.71$), $t(111.16) = -1.35$, $p = .180$. However, a statistically significant difference was found in the use of *creative musical activities* between the groups. Graduate students ($M = 3.07$, $SD = 0.70$) achieved higher values than undergraduate students ($M = 2.53$, $SD = 1.00$), $t(107.26) = -3.44$, $p = .001$. The effect size, estimated by Cohen's coefficient, is approximately $d = 0.62$, indicating a moderate effect. These results suggest that the level of study is not associated with the frequency of implementing *structured-reproductive musical activities*, while a higher level of education is associated with more frequent implementation of *creative musical activities* in work with children. A possible reason is that graduate students have more work experience and therefore a higher level of belief in their own self-efficacy compared to their less experienced colleagues (Tanriseven, 2012). Professional experience and years of work are also recognised as important factors in developing a sense of competence and self-efficacy in educational work (Moss Long, 2016). Differences between undergraduate and graduate students may also be interpreted in light of the specific characteristics of the study level, as graduate students encounter more complex pedagogical demands and tasks that require critical reflection on their own practice. Such experiences may contribute to a greater readiness to plan more open and creative musical activities that require greater flexibility and improvisation, moving beyond predetermined, highly structured work patterns.

Participation in formal and informal forms of musical activities

To determine whether there were statistically significant differences in the representation of *structured-reproductive* and *creative musical activities* depending on the

respondents' participation in formal or informal musical activities, an independent-samples t-test was applied.

Before conducting the analysis, homogeneity of variance was assessed using Levene's test, which showed no statistically significant deviation from the assumption of equal variances for either *structured reproductive* ($F = 0.03$, $p = .870$) or *creative musical activities* ($F = 0.67$, $p = .413$). Therefore, indicators assuming equal variances were used in subsequent interpretation of the results. The results did not show a statistically significant difference ($t(120) = 0.59$, $p = .558$) in the representation of *structured-reproductive musical activities* between the respondents who participated or had participated in musical activities ($M = 4.08$, $SD = 0.83$) and those without such experience ($M = 4.17$, $SD = 0.86$). Furthermore, no statistically significant difference was found ($t(120) = -1.60$, $p = .112$) in the representation of *creative musical activities* between the respondents with experience of participation in musical activities ($M = 2.96$, $SD = 0.96$) and those without such experience ($M = 2.70$, $SD = 0.85$).

Although it was assumed that participation in formal or informal musical activities would be associated with a greater representation of *creative musical activities*, the results did not show statistically significant differences. According to the study by Elaldı et al. (2020), these results may indicate that musical involvement alone is insufficient to explain the choice of pedagogical activities, but that competences, self-confidence, and the practical preparation of preschool teachers are more important for creative musical practice.

Playing an instrument

An independent-samples t-test was used to determine whether there were statistically significant differences in the representation of *structured-reproductive* and *creative musical activities* with regard to playing an instrument. Before conducting the analysis, homogeneity of variance was checked using Levene's test, which showed no statistically significant deviation from the assumption of equality of variances for either *structured reproductive* ($F = 0.13$, $p = .722$) or *creative musical activities* ($F = 0.01$, $p = .933$). Accordingly, indicators assuming equal variances were used in interpreting the results. The results did not show a statistically significant difference ($t(120) = 0.90$, $p = .373$) in the representation of *structured-reproductive musical activities* between the respondents who played an instrument ($M = 4.05$, $SD = 0.84$) and those who did not ($M = 4.19$, $SD = 0.85$). Similarly, no statistically significant difference was

found (t(120) = -1.78, p = .078) in the representation of *creative musical activities* between the respondents who played an instrument (M = 2.99, SD = 0.90) and those who did not (M = 2.69, SD = 0.88). Although the results suggest that the respondents who play an instrument do engage more frequently in creative musical activities (Cvrtila, 2024), this difference did not reach statistical significance in the present study. This claim could be further tested with a larger sample, as a greater number of respondents could increase the statistical power of the study and allow for more precise determination of the existence of a difference.

Employment group

Given that this concerns a relatively small number of respondents in the third group, which consists of those who work with a preschool group of children, and the fact that, according to developmental characteristics, these children resemble the second group (kindergarten), we conducted an additional check by merging the kindergarten and preschool groups into one. The independent-samples t-test indicated that there was no statistically significant difference (t(120) = 1.51, p = .135) in the representation of *structured-reproductive musical activities* between the respondents who worked in nursery groups (M = 4.28, SD = 0.96) and those who worked with kindergarten and preschool-age children (M = 4.05, SD = 0.75). However, a statistically significant difference was found (t(120) = -2.30, p = .023) in the representation of *creative musical activities*, with the respondents who work with kindergarten and preschool-age children (M = 2.95, SD = 0.82) applying creative musical activities more frequently than those who work with nursery groups (M = 2.57, SD = 0.97). Musical activities in early and preschool education differ depending on the developmental age of the children. Accordingly, creative forms of musical expression will prevail in work with older kindergarten children (Miyamoto, 2007). A possible reason for this is the older age of the children, with whom various exploratory and creative tasks can be carried out to a greater extent. Such processes are based on observation and exploration (Wiggins, 2001), and through creative activities children develop musical and extra-musical skills, while also learning teamwork and cooperation (Hallam, 2010).

Such a choice of activities is related to children's developmental capacities, as well as to preschool teachers' competences for implementing a range of musical content.

The specific organisational characteristics of nursery groups, along with the developmental needs of infants and toddlers, may also influence the choice of musical activities. Since work with nursery-aged children places strong emphasis on emotional security, daily routines, and meeting children's basic needs, less time is available for more demanding activities. This leads educators to rely more often on familiar, structured, and reproductive forms of musical practice. In contrast, work with preschool groups offers greater opportunities to organise more complex exploratory and creative activities, as well as to integrate music with other curricular domains.

Conclusion

Contemporary music pedagogy discourse promotes a holistic approach to the child as a competent co-constructor of knowledge; however, practical implementation still predominantly relies on structured, reproduction-based activities, with listening identified in this study as the most frequently used activity. In contrast, creative musical activities are significantly less represented, suggesting a lack of specific student-educator competences or material resources necessary for their implementation. The results indicate that the level of education and children's developmental age are key predictors of pedagogical activity choices: graduate students who also work with older groups demonstrate a significantly higher degree of creative activity implementation than their undergraduate peers or those working in nursery settings.

The findings indicate the need to further strengthen both initial teacher education and continuous professional development in creative and multimodal musical activities, with particular emphasis on active music listening, improvisation, integrating music with other arts and domains, and creating learning environments that support children's autonomy, exploration, and creativity in line with the principles of the National Curriculum for Early Childhood and Preschool Education. Musical activities should therefore be regarded not as a separate area of practice, but as a space for integrated learning, expression, and meaning making, enabling children to fully realise their potential as competent and active participants in their own learning.

The study's limitations include the inability to precisely distinguish between active and passive listening through the instrument used, the relatively small sample, and

the somewhat lower reliability of the factor related to creative musical activities. Furthermore, the findings reflect participants' subjective perceptions rather than direct observation of practice, which warrants some caution in interpretation. Future research should therefore involve larger samples and examine the quality, duration, and specific modes of implementation of musical activities in ECEC.

In conclusion, although music is part of everyday life in kindergartens, there is a clear need to shift from passive reproduction towards active, multimodal, and creative musical expression that would fully support the child's holistic development.

Author Contribution Statement

Conceptualization and methodology: S. V.; D. B. T.; Z. Š.; data collection and analysis: D. B. T.; writing – original draft preparation: S. V.; Z. Š.; writing – review and editing: S. V.; Z. Š.; D. B. T. All authors have read and agreed to the published version of the manuscript.

Data Availability Statement

The article is based on archival sources or other non-digitized sources listed in the reference section.

Statement on the Use of Generative AI Tools

No generative AI tools were used in the preparation of this paper to generate text, data, code, analysis, interpretations, or visual content. All content of the paper is the result of the authors' own scientific and professional work.

Informed Consent Statement

All research participants were adequately informed about the purpose of the research prior to participation and provided informed consent to participate.

Declaration of Conflicting Interests

The authors declare no conflicts of interest regarding the publication of this paper.

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