

Text Mining-Based Analysis of Research Trends in Multicultural and Arts Education in Korea: Toward an Intercultural and Socially Engaged Framework

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Abstract

This study aims to identify major research trends and structural connections within multicultural and arts education in Korea through a text-mining and topic-modeling approach. A total of 150 academic papers published between 2008 and 2024 were analyzed to explore how themes of intercultural competence and socially engaged art have evolved over time. Using latent Dirichlet allocation (LDA) and coherence-based validation, eight dominant topics were extracted: multicultural sensitivity, intercultural communication, arts-based integration, community engagement, policy development, identity expression, digital arts, and inclusive learning environments. Temporal and network analyses revealed a paradigm shift from cultural adaptation to intercultural understanding, and subsequently to participatory and solidarity-based discourses. The results show that Korean multicultural and arts education research has evolved from teacher-centered approaches toward learner- and community-oriented perspectives. The growing focus on socially engaged and digital arts education reflects the expanding intersection between cultural participation and civic inclusion. Moreover, the integration of interculturalism and participatory art suggests a move toward a holistic model of cultural-arts education bridging theory, policy, and practice. These findings demonstrate that multicultural and arts education in Korea has progressed from “understanding” to “participation,” and finally toward “solidarity,” indicating an emerging framework of Intercultural Arts Education. This study provides empirical evidence linking interculturalism and participatory art within educational practice and offers foundational insights for developing inclusive and community-oriented frameworks for cultural and arts education.

Keywords: *Intercultural Arts Education; Multicultural Education; Socially Engaged Art; Topic Modeling.*

Introduction

Background and Necessity of the Study

In the 21st century, the world has undergone significant social transformations marked by increased human mobility and the expansion of cultural diversity. As national boundaries have become more fluid and cross-border exchanges more commonplace, multicultural characteristics have become a general feature of contemporary societies. Korea, too, has rapidly diversified its social and educational structures over the past two decades through the rise of foreign immigration, multicultural families, and multilingual environments. According to the Ministry of Education (2023), the number of students from multicultural backgrounds has surpassed 200,000, accounting for approximately 4% of the total student population. These demographic changes call for a shift in education—from mere cultural coexistence to fostering mutual understanding and respect among learners from diverse cultural backgrounds.

The United Nations Educational, Scientific and Cultural Organization (UNESCO, 2024), through its Framework for Culture and Arts Education, emphasizes that culture and arts education should serve not only as a means of creative expression but also as a key vehicle for promoting diversity, inclusion, and civic values. UNESCO defines arts and culture education as “a central axis of social sustainability achieved through cultural participation throughout human development,” highlighting its role as an integrative process that expands both self-understanding and understanding of others. France’s *Éducation Artistique et Culturelle* (EAC) represents an institutionalized example of this philosophy. By

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combining artistic experience, cultural accessibility, and civic participation, EAC advances the realization of cultural democracy (Ministère de la Culture, 2021).

In Korea, the Culture-Link Project (Munhwa leum) reflects this global trend by integrating art education with cultural accessibility in a socially inclusive model (Lee, 2025). The project fosters cooperation among schools, communities, and cultural institutions, positioning arts education as a platform for social solidarity and civic growth. In this sense, it can be seen as a localized adaptation of the French EAC model. Nevertheless, despite these ongoing efforts, integrative approaches combining multicultural education and arts education remain limited, with weak linkages among the three domains of policy, academia, and practice. Research on multicultural education in Korea has primarily focused on sociocultural adaptation within schools, including language acquisition, identity formation, and acculturation processes (Lee & Jang, 2024). While these studies have contributed to the academic foundation of the field, they have paid relatively little attention to cultural-arts-based approaches that promote social integration through intercultural dialogue. In contrast, international research has increasingly examined socially engaged art and community arts, which position art as a medium for social solidarity and intercultural understanding (Carpenter II, 2019; Lang, 2023; Tate, 2024). Such studies demonstrate that arts education can function not only as a means of creative expression but also as a catalyst for social transformation.

Given these global and domestic contexts, exploring the development of Korea's multicultural and arts education requires moving beyond qualitative case studies toward systematic analyses grounded in accumulated literature data. By statistically and computationally examining the thematic structure of previous studies, it becomes possible to reveal how arts education and interculturalism have interacted and evolved. Accordingly, this study employs text mining and topic modeling to empirically identify major thematic structures in domestic research on multicultural and arts education, aiming to trace how this field has evolved from cultural understanding to participation and inclusion through the lens of interculturalism.

Theoretical Background

This study establishes interculturalism and participatory art as the theoretical framework for analysis. Interculturalism addresses the limitations of multiculturalism by emphasizing interaction and mutual transformation rather than mere coexistence (Meer et al., 2016; Taylor & Larin, 2020). Whereas multiculturalism has focused on recognizing and coexisting with cultural differences in a relatively static manner, interculturalism advocates a dynamic relational model in which diverse cultures engage in dialogue and co-construct new social meanings.

Byram (2021) conceptualized Intercultural Communicative Competence (ICC) as comprising four components: attitudes, knowledge, skills, and critical cultural awareness. He emphasized that learners expand self-awareness through dialogue and collaboration with other cultures, developing conflict resolution abilities and a broader sense of civic responsibility. Such intercultural competence fosters cultural sensitivity and critical citizenship, providing a foundation for education that extends beyond cultural understanding toward practical engagement.

While interculturalism provides the theoretical basis for cultural understanding, participatory art translates that understanding into social practice. Participatory art refers to artistic practices in which artists, audiences, and communities collaboratively construct meaning and foster social change. Sartre's (1948/1998) notion of engagement conceptualized art as an act within lived reality, a perspective that later evolved into the discourse of socially engaged art. This discourse connects art with citizenship and community, serving as an educational practice that promotes civic participation (Bishop, 2012; Helguera, 2019). Lang (2023) further defines participatory aesthetics as "a reconstruction of everyday social contexts," arguing that arts education should integrate local cultural resources and community governance to advance social inclusion.

Interculturalism and participatory art thus form complementary pillars of the theoretical framework of cultural-arts education. Whereas interculturalism promotes internal transformation through cultural understanding and reflection, participatory art drives social transformation through artistic engagement. Accordingly, this study positions understanding (from interculturalism) and engagement (from participatory art) as the two analytical axes to empirically explore how these concepts have been structurally and discursively connected in Korean research on multicultural and arts education.

Data-Driven Approach

This study adopts text mining and topic modeling to empirically analyze the discursive structure of domestic research. While qualitative approaches rely heavily on researchers' interpretive frameworks, data-driven methods enable quantitative exploration of large-scale literature corpora to identify thematic patterns and semantic networks objectively.

Blei (2012) and Griffiths & Steyvers (2004) introduced probabilistic topic models for identifying latent topic structures within documents, and Röder et al. (2015) proposed the coherence score to evaluate model interpretability and validity. Sievert & Shirley (2014) later developed LDAvis, a visualization tool that represents inter-topic distances and relationships, significantly enhancing interpretability in large-scale textual analyses. Drawing upon these methodological foundations, this study extracts the core thematic structures of multicultural and arts education research and quantitatively traces their temporal transitions. Beyond individual case analyses, it aims to elucidate how discourses surrounding multiculturalism, interculturalism, and socially engaged art have evolved within academic and policy domains.

Research Purpose and Questions

The purpose of this study is to analyze 150 Korean research papers on multicultural and arts education published between 2008 and 2024 using text mining and topic modeling, with particular attention to the interrelations between intercultural competence and socially engaged art. The following research questions were established:

1. What are the major thematic structures of Korean multicultural and arts education research over the past two decades?
2. How have the relative emphases and proportions of key themes changed over time?
3. What structural relationships exist among intercultural competence, socially engaged art, and local cultural resources within the research network?
4. What implications do these findings provide for developing a Korean model of Intercultural Arts Education and designing future cultural-education policies?

Significance of the Study

The significance of this study can be summarized in three aspects. First, from a theoretical perspective, it integrates interculturalism and socially engaged art within the context of arts education, expanding the discourse from multicultural coexistence toward intercultural participation and social inclusion. Second, from a methodological standpoint, it combines text mining, topic modeling, and keyword network analysis to structurally visualize the evolution of domestic arts education research and propose a data-driven analytical framework. Third, from a policy and practical viewpoint, the study provides empirical data that can inform evidence-based policymaking for building integrated governance across culture, education, and welfare sectors and promoting community-centered arts education. Furthermore, it contributes to expanding arts education research toward discourses of social inclusion and community restoration, suggesting new possibilities for academic, policy, and practical linkages.

Research Method

Research Design and Procedure

This study conducted an exploratory and empirical analysis of research trends in multicultural and arts education in Korea by applying text mining and topic modeling techniques to 150 academic papers published between 2008 and 2024. The research design adopted a quantitative–qualitative mixed approach, integrating statistical pattern extraction with discursive interpretation. The analysis proceeded in five stages:

1. Data Collection — Metadata (titles, abstracts, authors, keywords, publication years) were collected from domestic and international academic databases, including RISS, KCI, Scopus, and Web of Science.
2. Preprocessing — Texts were tokenized using morphological analysis, stopwords and special characters were removed, and words were normalized to their lemma forms.

3. Topic Extraction — The Latent Dirichlet Allocation (LDA) algorithm was applied to determine the optimal number of topics (k), with model fit assessed through Coherence Score (C_v) and log-likelihood values.
4. Network Analysis — A co-occurrence network of major keywords was constructed, and centrality measures (Degree, Betweenness, Eigenvector) were calculated to identify structural linkages among topics.
5. Temporal Analysis — The period from 2008 to 2024 was divided into three intervals: (① 2008–2013, ② 2014–2018, ③ 2019–2024), and changes in topic weights and keyword centrality were visualized.

Through these procedures, the study quantitatively traced the transition of multicultural and arts education research from “language-oriented” to “intercultural competence-oriented,” and finally to “socially engaged art-oriented” discourses.

Data Collection and Composition

Data were collected from the Korean Research Information Service System (RISS). Search keywords included “multicultural education,” “arts education,” “intercultural education,” and “social integration education.” The search targeted all academic articles and theses published between 2008 and 2024. Metadata (title, abstract, author, year, and keywords) were extracted, and duplicates were removed using cosine similarity (≥ 0.85) across titles and abstracts, combined with metadata comparison. The final dataset consisted of 150 papers, selected for their inclusion of interdisciplinary themes related to art, culture, education, and social integration.

Table 1. Data Collection and Composition

Category	Database	Keywords	Period	Initial Papers	Final Selected Papers
Domestic	RISS (Research Information Sharing Service)	“Multicultural education”, “Arts education”, “Intercultural education”, “Social integration education”	2008–2024	512	150

The dataset comprehensively covers representative Korean academic literature on multicultural and arts education. Topic modeling was conducted primarily on RISS-based text data to empirically analyze the structural patterns of domestic discourse.

Text Preprocessing

The preprocessing pipeline consisted of five steps: text cleaning, morphological analysis, stopword removal, translation alignment, and normalization. All procedures were implemented in Python 3.11, including simulations to verify algorithmic stability and reproducibility.

1. Morphological Analysis and POS Extraction
 - Korean texts were processed using the KoNLPy package (Okt analyzer), extracting primarily nouns and adjectives.
 - English abstracts were analyzed with spaCy, performing both lemmatization and part-of-speech tagging.
2. Stopword Dictionary Construction and Removal
 - Common stopwords: particles, conjunctions, and general function words (e.g., “and,” “also,” “of,” “the”).
 - Domain-specific stopwords: overly generic words such as “study,” “education,” “Korea,” “program,” and “student.”
 - A customized stopword dictionary was merged to systematically filter out non-thematic terms.
3. TF-IDF Weighting
 - Words appearing fewer than five times or in more than 95% of documents were excluded.

- The importance of each word was weighted using the Term Frequency–Inverse Document Frequency (TF–IDF) metric.
4. Language Merging and Translation Alignment
 - Documents without English abstracts were supplemented with machine translation to maintain consistency.
 - Sentence alignment was performed based on sentence length and order to ensure parallel structure.
 5. Token Normalization and Cleaning
 - All words were converted to lowercase; numbers and special characters were removed.
 - Lemmatization unified variations such as “art–arts” and “culture–cultural.”

After preprocessing, approximately 26,000 valid word tokens remained, with an average of 1,560 words per document.

Topic Modeling

1. Model Configuration and Environment
 - Algorithm: Latent Dirichlet Allocation (LDA; Blei et al., 2003)
 - Libraries: *gensim* (Python 3.11)
 - Key parameters: $\alpha = 0.1$, $\beta = 0.01$, iterations = 2000
 - Topic number (k): explored within the range of 6–20
2. Model Validation
 - Model consistency was evaluated using Coherence Score (C_v) and log-likelihood.
 - Following Röder et al. (2015), the model with $k = 8$ showing the highest C_v value was selected as optimal.
 - The results were interpreted as exploratory quantitative representations reflecting the latent discourse structure.
3. Visualization and Topic Interpretation
 - *PyLDAvis* (Sievert & Shirley, 2014) was used to visualize inter-topic distances and word distributions.

Each topic was labeled based on the top 10 weighted words and their semantic associations.

Temporal and Network Analyses

Based on the results of topic modeling, the study further examined the temporal evolution of themes and the interrelationships among keywords to explore how the discourse surrounding multicultural and arts education in Korea has shifted over time.

For temporal analysis, the research period from 2008 to 2024 was divided into three intervals—2008–2013, 2014–2018, and 2019–2024—representing the early, middle, and recent phases of the field’s development. Topic probability distributions were computed for each period, and the average rate of change ($\Delta\%$) in topic weights was analyzed to identify emerging and declining themes. The results were visualized using a Sankey diagram, which effectively illustrated the dynamic flow of thematic emphasis across time. Notably, the discourse trajectory showed a clear progression from teacher competence in the early stage, toward intercultural competence in the mid-period, and finally converging on socially engaged art and community participation in recent years. This pattern demonstrates a conceptual evolution from understanding to engagement and ultimately toward social inclusion, reflecting the growing integration of intercultural and participatory approaches in Korean arts education research. Visualization was implemented using Plotly Sankey and Matplotlib, where the node size and link strength represented the mean topic probabilities, allowing a quantitative interpretation of these temporal transitions.

To complement this, a keyword network analysis was performed to examine the structural connections among recurring concepts. A co-occurrence network was constructed from the 200 most

frequent keywords extracted from the abstracts, with edges weighted according to their co-occurrence frequency across two or more documents. The analysis adopted three centrality measures—degree, betweenness, and eigenvector centrality—to identify the most influential nodes within the discourse network. Using NetworkX (v3.2) and Gephi (v0.10), the study visualized clusters and modular structures that revealed the underlying conceptual relationships among research themes. Keywords such as intercultural competence, participation, community, art education, and inclusion emerged as central hubs, signifying their pivotal role in connecting educational, cultural, and social dimensions of the field.

To ensure the robustness of the model, coherence scores (C_v) were recalculated for topic numbers ranging from 6 to 20, confirming consistent stability across different parameter settings. Five random-seed simulations yielded coherence values equal to or greater than 0.63, indicating satisfactory model fit. In addition, correlation coefficients among the centrality indices were found to be above $r \geq 0.80$, further validating the internal consistency and reliability of the network structure. Collectively, these findings provide a quantitative foundation for understanding how multicultural and arts education research in Korea has evolved from fragmented thematic discussions to an increasingly interconnected and interdisciplinary discourse aligned with the paradigm of Intercultural Arts Education.

Analytical Tools and Environment

All analyses were conducted in Google Colab using Python 3.11. The major tools and libraries used for data cleaning, modeling, visualization, and network analysis are summarized below.

Table 2. Analytical Tools and Computational Environment

Category	Tools	Main Functions	Version / Environment
Data Processing	Python, pandas, numpy	Data cleaning and structuring	Python 3.11
Morphological Analysis	KoNLPy, spaCy	Korean/English tokenization and lemmatization	KoNLPy 0.6.0 / spaCy 3.7
Topic Modeling	gensim, scikit-learn	LDA modeling and validation	gensim 4.3 / scikit-learn 1.4
Visualization	pyLDAvis, matplotlib	Topic and keyword visualization	pyLDAvis 3.4
Network Analysis	NetworkX, Gephi	Keyword co-occurrence and centrality analysis	NetworkX 3.2 / Gephi 0.10
Execution Environment	Google Colab	Notebook-based analysis and visualization	CPU 16GB RAM

Results

Overview of Topic Modeling Results

An LDA-based topic modeling analysis was conducted on 150 Korean academic papers on multicultural and arts education published between 2008 and 2024. Model fitness was evaluated using the Coherence Score (C_v) and log-likelihood values. The model with $k = 8$ achieved the best fit (C_v ≈ 0.61 ; log-likelihood $\approx -18,200$), indicating eight dominant topics in the dataset.

Table 3. Summary of LDA Topic Modeling Results

Topic No.	Topic (Interpretation)	Label	Top 10 Keywords	Summary Description
T1	Multicultural Sensitivity and Competence	Teacher	multicultural, teacher, perception, diversity, training, attitude, empathy, classroom, awareness, inclusion	Studies focused on teachers' cultural sensitivity and pedagogical competence
T2	Intercultural Competence and Communication		intercultural, competence, communication, empathy, language, dialogue, identity, relationship, understanding, tolerance	Research emphasizing intercultural communication and empathy
T3	Arts-Based Education	Integrated	arts-based, creativity, integration, collaboration, curriculum, learner,	Studies on the integration of arts and curricular learning

		imagination, reflection, process, aesthetic	
T4	Socially Engaged Art and Community	participatory, engagement, empowerment, local, youth, social, sustainability, inclusion, community, practice, social	Community-based participatory arts research
T5	Policy and Institutional Development	policy, program, evaluation, governance, institution, framework, implementation, national, support, initiative	Policy-oriented and governance studies on arts education
T6	Learner Identity and Cultural Expression	identity, expression, performance, belonging, diversity, heritage, art, student, cultural, inclusion	Studies on learners' identity and cultural expression
T7	Technology-Based Arts Education	digital, media, online, AI, immersive, platform, creativity, virtual, collaboration, participation	Research on digital and AI-enhanced arts education
T8	Inclusive Learning Environment and Psychological Safety	inclusion, well-being, emotional, support, relation, school, climate, belonging, safety, empathy	Studies on inclusive educational environments and psychological well-being

Visualization of Topic Relations and Structural Clusters

The PyLDAvis visualization revealed that the eight topics were clustered into three major domains:

- (1) Pedagogical Implementation (T1–T3–T8);*
- (2) Societal Expansion (T2–T4–T5); and*
- (3) Identity and Technology (T6–T7).*

Among them, the conceptual similarity between T2 and T4 was notably high (≈ 0.79), indicating a strong connection between intercultural competence and socially engaged art. The visualization also showed that topic proximity corresponds to the interaction between intercultural understanding and artistic participation, forming an integrative axis of “Intercultural Arts Education.”

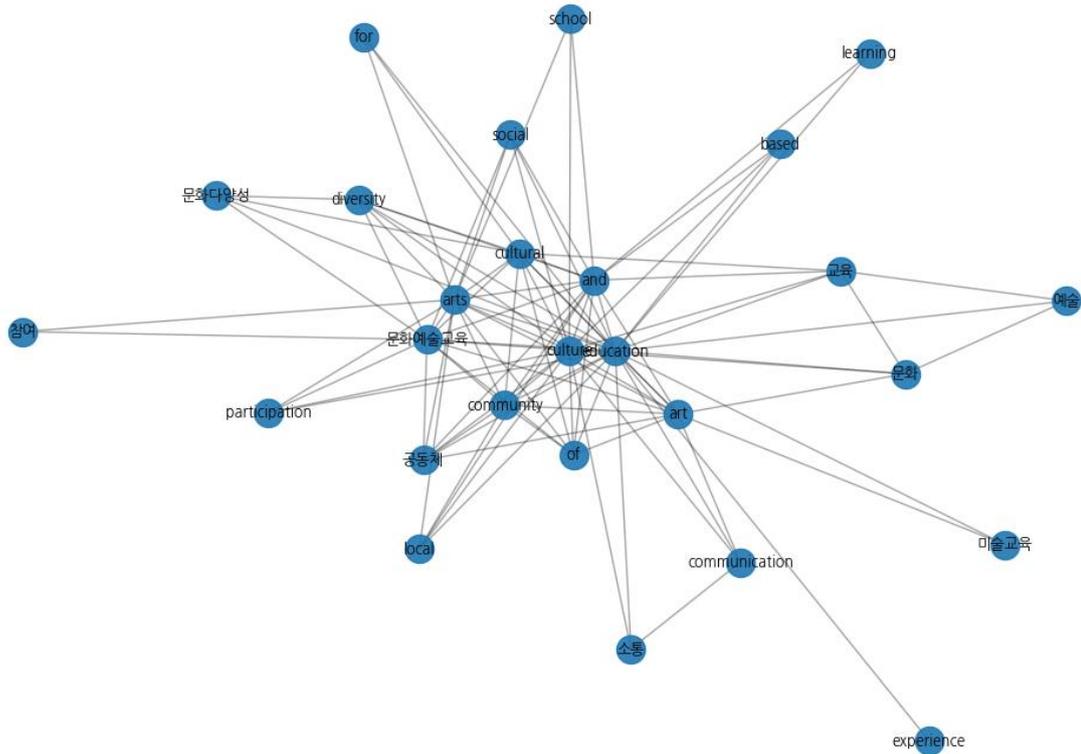


Figure 1. Topic Structure Visualization (PyLDAvis)

This figure displays the relative weight (circle size) and semantic similarity (inter-circle distance) among eight topics. Three distinct clusters are visible, with the T2–T4 proximity highlighting the fusion of intercultural understanding and artistic engagement.

Temporal Changes in Topic Distribution

For comparative analysis, the study period was divided into three stages: ① 2008–2013, ② 2014–2018, and ③ 2019–2024. In the early stage, teacher-oriented multicultural education (T1) dominated the literature, while in the most recent five years, socially engaged art (T4) and inclusive learning environments (T8) became the most prevalent topics. The transition illustrates the gradual expansion of research focus from classroom-based multicultural training to community-based participatory arts and inclusion.

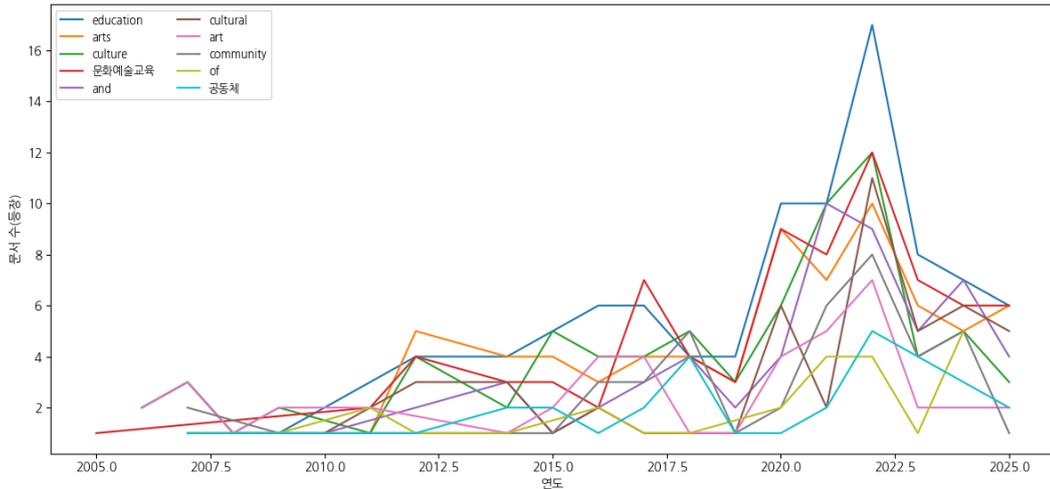


Figure 2. Temporal Changes in Topic Distribution (Sankey Diagram)

The diagram visualizes the relative weights and flows of topics across periods, highlighting the transition from T1 (Teacher Competence) to T4 (Participatory Art).

Table 4. Summary of Temporal Shifts in Topic Proportions

Period	Key Characteristics	Top Topics (by Proportion %)	Trend Summary
Phase 1 (2008–2013)	Focus on multicultural sensitivity and teacher training	T1 (27.9%), T2 (22.3%), T6 (17.5%)	Early multicultural discourse centered on classroom adaptation
Phase 2 (2014–2018)	Expansion of intercultural competence and arts integration	T2 (24.6%), T3 (21.1%), T5 (18.7%)	Emphasis on interculturalism and creative convergence
Phase 3 (2019–2024)	Growth of participatory arts and inclusive education	T4 (25.8%), T7 (18.9%), T8 (17.4%)	Rise of social participation and digital arts education

Keyword Network Analysis Results

A network of 200 high-frequency keywords was constructed from a total of approximately 4,200 terms. Intercultural competence and community art occupied central positions in the network, while the path connecting participation – empathy – inclusion formed the core linkage within the socially engaged art domain. These relationships indicate that intercultural education discourse in Korea has evolved toward social inclusion through artistic practice and community participation.

Table 5. Results of Keyword Network Analysis

Metric	Top Keywords	Interpretation
Degree Centrality	multicultural education, intercultural competence, art education, inclusion, community	Keywords with the highest overall connectivity
Betweenness Centrality	participation, empathy, communication, policy, engagement	Mediating hubs connecting multiple themes
Eigenvector Centrality	community, collaboration, creative practice	Most influential concepts within the network structure

Integrated Interpretation and Key Findings

The overall findings reveal a clear evolution in the discourse of multicultural and arts education in Korea over the past two decades. Early research primarily emphasized cultural adaptation and teacher training within multicultural education, focusing on enhancing teachers’ sensitivity to diversity and their instructional competence in heterogeneous classrooms. However, as the field matured, attention gradually shifted toward intercultural competence—a concept emphasizing empathy, dialogue, and mutual understanding across cultural boundaries. This transition marks a conceptual departure from unidirectional cultural adjustment to reciprocal cultural learning and communication.

From 2015 onward, studies increasingly integrated artistic practice as a mediating framework for intercultural understanding, positioning art as both a pedagogical and social medium. The rise of socially engaged art and community-based arts education (T4) demonstrates that art has evolved from an aesthetic practice into a platform for civic participation, local empowerment, and social cohesion. This tendency aligns closely with the global paradigm of Intercultural Arts Education, where creativity and participation serve as dual vehicles for fostering inclusion and solidarity.

Concurrently, digital and AI-based arts education (T7) has emerged as a new form of participatory platform, expanding accessibility and engagement in the post-pandemic context. These developments signify the growing convergence of cultural education, technology, and social innovation. Moreover, the expansion of policy and governance research (T5) indicates an institutional shift toward evidence-based frameworks that integrate culture, education, and welfare under a unified governance structure.

Collectively, the results suggest that the Korean discourse on multicultural and arts education has progressed through three interconnected phases:

- (1) Cultural Understanding, emphasizing linguistic and cognitive adaptation;*
- (2) Intercultural Engagement, highlighting empathy, competence, and mutual communication; and*
- (3) Social Solidarity, realized through participatory art and inclusive education.*

This trajectory resonates with UNESCO's (2024) Framework for Inclusive Arts Education and the French Éducation Artistique et Culturelle (EAC) model, both of which view arts education as a transformative tool for strengthening social solidarity and cultural citizenship. In this context, Korean multicultural and arts education research no longer treats art as a mere expression of cultural identity, but rather as a dynamic agent of intercultural dialogue and community restoration, contributing to a more inclusive and sustainable educational ecosystem.

Discussion

Integration of Interculturalism and Socially Engaged Art

The text-mining and topic-modeling results of this study empirically demonstrate that since 2008, Korea's discourse on multicultural education has evolved from a paradigm of cultural adaptation toward intercultural understanding and social engagement. This transition signifies a movement toward a participatory cultural ecology, in which learners, teachers, and communities co-construct cultural meanings through dialogue and collaboration.

Lee (2025) compared France's Éducation Artistique et Culturelle (EAC) system with Korea's Culture-Link Project, showing that interculturalism functions as a bridge between cultural exchange and civic participation within arts education. The present study quantitatively supports this perspective, indicating that interculturalism and socially engaged art operate as complementary paradigms that can be integrated into a unified educational framework.

Byram's (2021) model of Intercultural Communicative Competence (ICC) emphasizes not only understanding other cultures but also translating such understanding into moral and social action. This aligns closely with Carpenter's (2019) concept of socially engaged art, which situates artistic practice as an act of civic responsibility. When intercultural understanding extends into social practice, education transcends the level of "understanding the other" and becomes "a reconstructive act of community." This principle reflects UNESCO's (2024) Framework for Culture and Arts Education, which underscores inclusive arts education and social solidarity as essential to sustainable cultural citizenship. Accordingly, the integration of multicultural and arts education should not be viewed as parallel or additive, but rather as a sequential continuum consisting of

- (1) Intercultural Understanding → (2) Artistic Practice → (3) Social Cohesion.

Data-Driven Interpretation of the Discourse

The topic modeling results (T1–T8) and the keyword network structure reinforce this theoretical progression. The intercultural competence–participation–community–art practice axis emerged as the central node of the research network, indicating that multicultural education has evolved into a structure that promotes social participation through artistic engagement.

First, the sequential shift from T1–T2–T4 illustrates the transformation from teacher-centered multicultural sensitivity to learner- and citizen-centered participatory art. Between 2008 and 2013, the focus was on teachers' cultural awareness (T1), but later expanded to intercultural communication (T2)

and, more recently, to community-based participatory art (T4). This progression signifies a structural change in agency, where learners themselves become cultural actors rather than passive recipients.

Second, the T3–T7 connection highlights the rise of technology-based arts education. Digital and AI-driven platforms have provided new avenues for inclusive and intercultural participation—especially after the COVID-19 pandemic, which accelerated virtual exhibitions and online co-creation. These developments mark the emergence of digital participatory art as an extension of intercultural education.

Third, the T5–T8 linkage demonstrates the institutional expansion of inclusive education policies and cultural arts governance. This indicates that multicultural and arts education in Korea is increasingly embedded in national policy frameworks that integrate education, culture, and welfare governance. Altogether, the data-driven analysis confirms that interculturalism, when combined with the praxis of participatory art, evolves into a three-dimensional system connecting policy, education, and culture.

Policy and Educational Implications for a Korean Model of Intercultural Arts Education

Based on these findings, three strategic directions are proposed for establishing a Korean model of Intercultural Arts Education (IAE):

(1) Policy Implications:

A national certification system integrating arts, culture, education, and welfare—similar to France’s Label 100% EAC—is needed. Currently, multicultural education, arts education, and community cultural programs operate as separate administrative systems. A governance-integrated framework would enable cross-sector collaboration. Building community-based intercultural participation platforms grounded in local cultural assets could strengthen regional resilience and promote sustainable social inclusion.

(2) Educational Implications:

Curricula should merge intercultural competence with artistic participation, establishing a triangular model of expression–dialogue–participation. Through project-based arts learning, students can address social themes through creative expression and collaboration, thereby enhancing multicultural acceptance, empathy, and critical thinking. Teacher training should similarly emphasize cultural diversity and artistic literacy as integral competencies for inclusive education.

(3) Research Implications:

While this study provides empirical insights through data-driven discourse analysis, future research should employ mixed-methods approaches—combining surveys, interviews, and case studies—to verify the empirical relationship between interculturalism and participatory art. In particular, to operationalize Sartre’s concept of engaged art, researchers should develop measurable indicators capturing participants’ perceptual changes, social actions, and cultural achievements. Such frameworks could evolve into social impact evaluations, quantitatively assessing the transformative potential of arts education.

A Preliminary Typology and Empirical Framework for Participatory Art

As a practical extension, this study proposes a fourfold preliminary typology of participatory art as an applied form of interculturalism:

1. **Conscientization Type** – Focused on raising awareness of inequality or otherness (e.g., testimonial archives, storytelling workshops).
2. **Co-Creative Practice Type** – Artists and participants jointly produce outcomes as equal agents (e.g., collaborative performances, community composition).
3. **Social Transformation Type** – Aimed at institutional or policy-level change (e.g., civic co-governance projects, public design campaigns).
4. **Public Participation Type** – Expands cultural citizenship through everyday participation (e.g., local festivals, commons-based programs).

These types can be organized in a 2×2 matrix along two dimensions: Goal (Awareness–Transformation) × Method (Co-Creation–Public Participation). Future validation should proceed in three stages: (a) Delphi surveys for content validity, (b) Factor analysis for construct validity, and (c) Case studies for predictive validity. This typology aligns conceptually with Byram’s (2021) ICC model—

comprising attitudes, knowledge, skills, and critical cultural awareness—and is consistent with the intercultural competence–participation–community–art practice axis identified in this study.

Summary

This discussion emphasizes that interculturalism and socially engaged art should be interpreted not as separate domains but as mutually reinforcing and cyclically connected processes. Education grounded in intercultural understanding nurtures artistic practice, which in turn fosters social integration and cultural citizenship. This cyclical model—understanding → practice → solidarity—redefines multicultural education as a participatory and empathetic process rather than mere coexistence. The convergence of intercultural sensitivity and participatory art thus provides a practical foundation for building inclusive learning ecosystems across teacher education, policy frameworks, and community cultural programs. Through empirical, data-driven evidence, this study identifies the expanding trajectory of multicultural education discourse and offers foundational insights for designing a systematic Korean model of Intercultural Arts Education.

Conclusion

This study analyzed research trends in multicultural and arts education by applying text mining and topic modeling techniques to 150 academic papers published between 2008 and 2024. The analysis revealed a progressive trajectory in the discourse—from early teacher-centered multicultural education, through the strengthening of intercultural competence and the expansion of socially engaged art, to the ultimate goal of social integration through arts and culture. The core keyword network, represented by intercultural competence–participation–community–art practice, indicates that artistic practice contributes to social inclusion and community restoration. In other words, the theoretical discourse of multicultural education has evolved from cultural understanding and adaptation to artistic participation and social solidarity, empirically confirming its transformation toward socio-cultural integration. By employing text mining to quantitatively identify the discursive structure of multicultural and arts education, this study complements the subjectivity and limited sampling of traditional qualitative approaches. Furthermore, by empirically illustrating the convergence between interculturalism and participatory art, this research proposes a novel analytical framework that bridges the gap between theoretical discussion and policy practice.

Theoretical Contributions

First, this study makes an academic contribution by empirically linking interculturalism and socially engaged art through data-driven analysis. While previous studies have often remained at a conceptual level, this research used topic modeling to visualize the structural connections among key concepts such as intercultural competence, participation, community, and artistic practice. These findings provide empirical support for Byram's (2021) theory of Intercultural Communicative Competence (ICC)—comprising attitudes, knowledge, skills, and critical cultural awareness—demonstrating its applicability within arts education contexts. Second, the study reinterprets Jean-Paul Sartre's (1948/1998) notion of engagement in art from a multicultural education perspective. Sartre's concept of engagement, which situates art as a mode of social practice grounded in lived reality, provides a philosophical foundation for the present findings—showing that artistic participation can foster both intercultural competence and civic action. This suggests that socially engaged art can function not merely as an expressive activity but as a pathway for the realization of practical citizenship. Third, this study empirically confirms that the core values emphasized by UNESCO (2024) and France's *Éducation Artistique et Culturelle* (EAC)—namely creativity, participation, and social solidarity—are attainable within the Korean context. Programs such as Korea's Culture-Link Project reflect this alignment, and the present findings support the theoretical coherence and policy direction of these global frameworks. Together, these contributions provide a foundation for developing a Korean model of Intercultural Arts Education (IAE).

Practical Implications

From a policy perspective, this study underscores the need to transcend the fragmented administration of culture, education, and welfare by establishing an integrated governance framework. Although multicultural education, arts education, and community cultural development currently function as separate policy domains, an interlinked governance system could foster a sustainable cultural ecosystem where education and culture mutually reinforce one another. France's Label 100% EAC model exemplifies such integration, engaging local communities, artists, schools, and public institutions in a shared intercultural arts education network—a model that Korea could adopt at the regional level. From an educational perspective, the study proposes a three-stage learning model—understanding →

expression → participation—as a foundation for intercultural arts pedagogy. In this model, learners first develop cultural understanding, then express themselves through artistic media, and finally extend learning into social participation. Teacher education programs should support this cyclical learning process through the integration of diversity education, project-based arts learning, and collaborative creation. Moreover, locally grounded programs that utilize regional cultural assets can enhance students' identity formation and community awareness. From a technological perspective, this study highlights the potential of AI and digital media as new platforms for participatory arts education. Online collaboration, virtual exhibitions, and media-art-based participatory projects have emerged as effective alternatives for intercultural interaction in post-pandemic learning environments. These digital art practices transcend physical boundaries, fostering inclusive learning communities that operate beyond spatial and temporal constraints.

Limitations and Future Directions

This study has several limitations. First, because the analysis relied primarily on abstracts and keywords extracted through text mining, it could not fully capture the qualitative and contextual depth of real-world educational practices. Future research should adopt mixed-methods approaches—combining surveys, interviews, classroom observations, and case studies—to validate the practical effects of intercultural arts education. Second, the topic structures identified by the LDA algorithm are inherently dependent on machine-based classification. Therefore, future studies should incorporate interpretive validation by experts through Delphi analyses to assess conceptual consistency and refine topic classifications. Third, further research should operationalize Sartre's theory of engaged art through behavioral analysis and social impact evaluation. Tracking participants' behavioral changes and measuring shifts in community awareness could help quantify the social effects of participatory art. Additionally, developing standardized assessment tools for evaluating the outcomes of intercultural arts education would provide a robust foundation for both academic advancement and policy decision-making.

Concluding Remarks

This study empirically demonstrates that multicultural education, interculturalism, and participatory art exist along a continuum of cultural practice for social inclusion. Multicultural education operates through a cyclical structure in which intercultural understanding leads to artistic participation, which in turn fosters community integration. These results provide foundational evidence for the development of a Korean model of Intercultural Arts Education, supporting an educational transition from understanding to participation and ultimately to solidarity. Through data-driven analysis, this research reinforces the theoretical linkage between interculturalism and participatory art while articulating a clear direction for practice. The educational transformation embodied in the sequence “from understanding to participation, and from participation to solidarity” represents a core principle for future models of intercultural arts education in Korea. Ultimately, this integrated approach offers a vision for future education that establishes a foundation for inclusion and coexistence in an increasingly diverse society, while realizing human dignity and community restoration through the arts.

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References

- [1] Blei, D. M. (2012). Probabilistic topic models. *Communications of the ACM*, 55(4), 77–84. <https://doi.org/10.1145/2133806.2133826>
- [2] Byram, M. (2021). Teaching and assessing intercultural communicative competence: Revisited. *Multilingual Matters*. <https://doi.org/10.21832/978180041025>
- [3] Carpenter II, B. S. (2019). What does social engagement mean and what should art education research do about it? *Studies in Art Education*, 60(1), 6–21. <https://doi.org/10.1080/00393541.2019.1644096>
- [4] Griffiths, T. L., & Steyvers, M. (2004). Finding scientific topics. *Proceedings of the National Academy of Sciences*, 101(Suppl 1), 5228–5235. <https://doi.org/10.1073/pnas.0307752101>
- [5] Lang, M. (2023). Socially engaged art, post-truth and the monumentalising of the ordinary. *zkmm*, 13(1). <https://doi.org/10.14361/zkmm-2023-0103>
- [6] Meer, N., Modood, T., & Zapata-Barrero, R. (2016). *Multiculturalism and interculturalism: Debating the dividing lines*. Edinburgh University Press.
- [7] Ministère de la Culture. (2021). Label 100% Éducation Artistique et Culturelle (EAC) [Official website]. <https://www.culture.gouv.fr>
- [8] Röder, M., Both, A., & Hinneburg, A. (2015). Exploring the space of topic coherence measures. In *Proceedings of the 8th ACM International Conference on Web Search and Data Mining (WSDM '15)* (pp. 399–408). <https://doi.org/10.1145/2684822.2685324>
- [9] Sievert, C., & Shirley, K. (2014). LDAvis: A method for visualizing and interpreting topics. In *Proceedings of the Workshop on Interactive Language Learning, Visualization, and Interfaces* (pp. 63–70). <https://doi.org/10.3115/v1/W14-3110>
- [10] Taylor, C., & Larin, S. (2020). Interculturalism and liberal nationalism. *Ethnicities*, 20(5), 781–802. <https://doi.org/10.1177/1468796819881650>
- [11] UNESCO. (2024). *Framework for culture and arts education*. Paris: UNESCO.
- [12] Lee, S., & Chang, I. (2024). An analysis of research trends about multicultural education using text mining: Focusing on the research articles in *Multicultural Education Studies*. *Multicultural Education Studies*, 17(2), 143-160. <https://doi.org/10.14328/MES.2024.6.30.143>
- [13] Oh, J.-S. (2020). A study on the knowledge structure of cultural contents studies using topic modeling and network analysis. *Journal of Cultural Policy Studies*, 34(2), 35–69.
- [14] Lee, E. J. (2025). A Study on the Direction of Arts and Culture Education for Multicultural Background Students from the Perspective of Interculturalism. *International Journal of Global Language and Literary Studies*, 20(20), 146-159