

Compulsory Music Education: A Policy for Nurturing the Soul or Stifling Creativity? An Evidence-Based Debate

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Abstract: *This study examined the effects of compulsory music education on secondary school students' academic performance, creative self-efficacy, intrinsic motivation, and socio-emotional well-being, with the aim of generating evidence-based insights to inform music education policy. A cross-sectional quantitative design was employed, with a stratified random sample of 420 students drawn from 12 secondary schools classified by music education policy — compulsory, elective, or none. Data were collected via a structured self-administered questionnaire incorporating validated psychometric scales, and analyzed using univariate descriptive statistics, one-way ANOVA, Pearson chi-square tests, correlation analysis, and hierarchical binary logistic regression. The findings revealed significant differences across music education groups on all outcome variables. Students in compulsory music programs recorded the highest mean academic performance ($M = 71.4$) and creative self-efficacy ($M = 38.6$), while students in schools with no music program recorded the lowest scores across all domains. Elective music participants reported marginally higher intrinsic motivation than their compulsory counterparts, signaling a trade-off between policy-mandated engagement and self-determined motivation. Correlation analysis confirmed positive dose-response relationships between duration of music participation and all outcome variables ($r = 0.36-0.48$, $p < .001$). Binary logistic regression, controlling for age, gender, socioeconomic status, and school type, identified compulsory music enrollment as the strongest predictor of above-median composite outcomes [$OR = 3.46$, 95% $CI: 2.03-5.88$, $p < .001$], followed by elective music participation [$OR = 2.43$, $p = .001$] and duration of music engagement [$OR = 1.21$ per year, $p = .001$]. The model demonstrated satisfactory fit (Nagelkerke $R^2 = 0.38$; overall accuracy = 72.4%). These findings support the formal institutionalization of music education in school curricula while advocating for student-centered pedagogical approaches that preserve intrinsic motivation within compulsory frameworks. The study recommends that education policymakers treat music education as an equity-relevant intervention, with particular investment directed toward low-SES school environments where such programs are most lacking and their potential benefit greatest.*

Keywords: compulsory music education, academic performance, creative self-efficacy, intrinsic motivation, socio-emotional well-being, logistic regression

Introduction

Music education has long been regarded as a cornerstone of holistic human development, bridging the cognitive, emotional, and social dimensions of learning. Across centuries and cultures, music has served not merely as an art form but as a vehicle for cultural transmission, emotional expression, and intellectual growth. In recent decades, however, the question of whether music education should be made compulsory in formal schooling systems has ignited fierce debate among policymakers, educators, psychologists, and parents alike (Chiba & Hebert, 2025; Martín-Sanz et al., 2025; Zhang & Song, 2024). Proponents argue that mandating music education equips learners with cognitive advantages, emotional resilience, and cultural literacy that voluntary participation alone cannot guarantee. Critics, on the other hand, contend that compulsion inherently undermines the intrinsic motivation that makes musical engagement meaningful, potentially transforming a liberating art form into yet another academic burden (Borgström Källén & Ferm Almqvist, 2025; Wang et al., 2022; Zhang, Beh, et al., 2024). This tension between policy imperatives and pedagogical freedom sits at the heart of this study. By drawing on empirical evidence from diverse educational contexts, this research seeks to move beyond ideological positions and interrogate the actual outcomes — cognitive, emotional, creative, and social — associated with compulsory versus voluntary music education. In doing so, it aims to contribute a rigorous, evidence-based perspective to a discourse that is too often driven by assumption rather than data (Economidou Stavrou, 2024; Sutela & Ahonen, 2025; Zhang, Fen, et al., 2024).

Background of the Study

The role of music in education is not a new subject of inquiry. From Plato's advocacy for musical training in the development of virtuous citizens to the modern neuroscientific investigations of music's effect on brain plasticity, the value of music as an educational tool has been consistently affirmed across disciplines. In the late 20th and early 21st centuries, a growing body of research — including landmark studies such as the "Mozart Effect" and subsequent work in educational neuroscience — generated widespread institutional interest in embedding music more formally within school curricula (Said & Abramides, 2020; Shi, 2024; Wei et al., 2022; Wu, 2025). Countries such as Finland, Japan, and South Korea have integrated structured music education into their national curricula, often citing improvements in academic performance, social cohesion, and student well-being. In contrast, several nations, particularly in the Global South and in resource-constrained contexts, have either deprioritized music education or left it to the discretion of individual schools and teachers (Třeb, 2024; Váradi, 2022).

Uganda, like many Sub-Saharan African nations, presents a particularly complex landscape. While music, dance, and drama (MDD) form part of the official primary and secondary school curriculum, implementation remains inconsistent due to infrastructural

deficits, teacher shortages, and an examination culture that privileges science and mathematics (Julius & Geofrey, 2025; Julius & Godfrey, 2025; Julius & Twinomujuni, 2025). This imbalance raises urgent questions about equity and educational philosophy: Does mandating music education improve learning outcomes, or does it merely add to an already overburdened curriculum? Does compulsion serve learners' creative development, or does it risk standardizing and thereby neutralizing the very spontaneity that makes music transformative? These questions have both local and global relevance, and this study situates itself at their intersection (Jamil et al., 2020; Julius & Audrey, 2025a; Julius & Isaac Kazaara, 2025).

Problem Statement

Despite growing advocacy for music education at both national and international levels, there exists a significant and unresolved tension in educational policy between the compulsory inclusion of music in school curricula and the preservation of learner autonomy, intrinsic motivation, and genuine creative expression (Julius & Mategeko, 2025; Julius & Sula, 2025). While numerous studies have documented the cognitive and socio-emotional benefits of music education broadly defined, the specific effects of *compulsory* music education — as distinct from voluntarily pursued musical engagement — remain insufficiently examined (Julius & Audrey, 2025b; Julius & Kazaara, 2025b; Julius & Nancy, 2025; Okoed, 2023). In many educational systems, music is either mandated without adequate resources, trained teachers, or institutional support, or it is sidelined in favor of "core" academic subjects, leaving its potential unrealized. This policy ambiguity is compounded by a lack of rigorous empirical evidence comparing outcomes between students in compulsory music education programs and those in systems where music participation is elective (Chakrabarty & Singh, 2025; Charles et al., 2023; Julius & Kazaara, 2025a). The result is a policy vacuum in which decisions about music education are made on ideological, financial, or political grounds rather than on demonstrated evidence of student outcomes. This study addresses that gap by generating empirical evidence on the relationship between compulsory music education policies and key student outcomes, including academic performance, creative self-efficacy, and socio-emotional well-being.

Main Objective

The main objective of this study was to assess the effects of compulsory music education on students' academic performance, creative development, and socio-emotional well-being, and to determine the policy conditions under which such education produces optimal educational outcomes.

Specific Objectives

1. To examine the association between compulsory music education participation and students' academic performance across core subject areas.
2. To assess the effect of compulsory versus voluntary music education on students' creative self-efficacy and intrinsic motivation toward learning.
3. To determine the socio-demographic and institutional factors that predict positive outcomes among students enrolled in compulsory music education programs.

Research Questions

1. What is the association between participation in compulsory music education and academic performance in core subjects among secondary school students?
2. To what extent does the compulsory nature of music education influence students' levels of creative self-efficacy and intrinsic motivation compared to voluntary music participation?
3. What socio-demographic and institutional factors significantly predict positive academic, creative, and socio-emotional outcomes among students enrolled in compulsory music education programs?

Methodology

This study adopted a cross-sectional, quantitative research design to examine the effects of compulsory music education on students' academic performance, creative self-efficacy, and socio-emotional well-being across selected secondary schools. A stratified random sampling technique was employed to select a representative sample of 420 students from 12 secondary schools that varied in music education policy — that is, schools with fully compulsory music programs, schools with elective music programs, and schools with no formal music program — ensuring diversity in school type, geographic location, and socioeconomic profile. Primary data were collected through a structured, self-administered questionnaire that captured students' demographic characteristics, music education participation history, academic performance scores (obtained from official school records), creative self-efficacy (measured using an adapted 10-item Creative Self-Efficacy Scale), intrinsic motivation (assessed via a validated 8-item subscale drawn from the Intrinsic Motivation Inventory), and socio-emotional well-being (measured using the 5-item Warwick-Edinburgh Mental Wellbeing Scale). Data were entered and cleaned in SPSS Version 26 and analyzed at three progressive statistical levels. At the univariate level, descriptive statistics — including frequencies, percentages, means, and standard deviations — were computed to characterize the distribution of all study variables and to describe the socio-demographic profile of the sample, the prevalence of compulsory music education participation, and the distribution of academic performance, creative self-efficacy, and socio-emotional well-being scores. At the bivariate level, inferential analyses were conducted to examine associations and differences between key variables: independent samples t-tests and one-way ANOVA were used to compare mean academic performance and creative self-efficacy

scores across music education policy groups (compulsory, elective, none), while Pearson's chi-square tests were applied to assess associations between categorical variables such as music education type and socio-emotional well-being category. Correlation analysis (Pearson's r) was further employed to quantify the direction and strength of linear relationships between continuous variables, including music participation duration, academic performance, and creative self-efficacy scores. At the multivariate level, binary logistic regression was performed to identify the independent predictors of positive student outcomes, defined as achieving above-median scores on a composite outcome index combining academic performance, creative self-efficacy, and socio-emotional well-being. The logistic regression models were built in two hierarchical blocks — the first block entering socio-demographic variables (age, gender, school type, socioeconomic status) as covariates, and the second block entering the music education policy variable and duration of music participation as the primary predictors of interest — thereby allowing the net effect of compulsory music education to be estimated after controlling for potential confounders. Model fit was assessed using the Hosmer-Lemeshow goodness-of-fit test, the Nagelkerke R^2 statistic, and the overall percentage of correct classification, while odds ratios (OR) with 95% confidence intervals (CI) were reported for all predictor variables to facilitate interpretation of the magnitude and direction of associations. Statistical significance was set at $p < 0.05$ for all analyses (Nelson et al., 2022, 2023).

Results.

Table 1: Univariate Analysis — Descriptive Statistics of Key Study Variables by Music Education Type

Variable	Compulsory Music (n=152)	Elective Music (n=143)	No Music Program (n=125)	Total (N=420)
Mean Age (SD)	15.8 (1.2)	15.6 (1.3)	15.9 (1.1)	15.8 (1.2)
Female (%)	54.6%	51.7%	48.8%	51.9%
Low SES (%)	38.2%	35.0%	52.8%	41.7%
Mean Academic Score /100 (SD)	71.4 (9.3)	65.8 (10.1)	58.2 (11.4)	65.5 (11.6)
Mean Creative Self-Efficacy /50 (SD)	38.6 (6.4)	35.2 (7.1)	29.7 (8.3)	34.7 (8.3)
Mean Intrinsic Motivation /40 (SD)	29.3 (5.8)	31.7 (5.2)	24.1 (6.9)	28.5 (6.8)
Mean Wellbeing Score /25 (SD)	19.8 (3.6)	20.4 (3.4)	16.9 (4.1)	19.1 (4.0)
Above-Median Composite Outcome (%)	66.4%	58.7%	31.2%	52.9%

The descriptive statistics revealed substantive and patterned differences across the three music education groups on all key outcome variables. Students enrolled in compulsory music programs recorded the highest mean academic performance score ($M = 71.4$, $SD = 9.3$), compared to those in elective programs ($M = 65.8$, $SD = 10.1$) and those in schools with no music program ($M = 58.2$, $SD = 11.4$). This gradient of approximately 13 points between the compulsory and no-music groups — against a 100-point scale — was both statistically meaningful and practically significant, suggesting that structured, institutionally mandated music engagement was associated with meaningfully stronger academic outcomes. Similarly, creative self-efficacy scores followed the same descending pattern across groups (38.6 vs. 35.2 vs. 29.7), indicating that students in compulsory music programs reported considerably higher confidence in their creative abilities than their counterparts in non-music environments. Notably, the largest standard deviations were consistently observed in the no-music group, reflecting greater heterogeneity and suggesting that the absence of any structured music provision may produce more polarized outcomes among learners.

A particularly nuanced finding emerged from the intrinsic motivation scores: students in elective music programs reported the highest mean intrinsic motivation ($M = 31.7$, $SD = 5.2$), marginally outperforming those in compulsory programs ($M = 29.3$, $SD = 5.8$). This finding lent partial credence to the theoretical argument that voluntary participation in music preserves self-determination and thereby sustains motivational intensity. However, when considered alongside the fact that students in compulsory programs still significantly outperformed the no-music group on intrinsic motivation, it became clear that the mere presence of music education — regardless of its compulsory nature — was associated with higher intrinsic motivation than its absence. The composite above-median outcome proportion further underscored this: 66.4% of students in compulsory programs achieved above-median composite outcomes, compared to 58.7% in elective programs and only 31.2% in no-music schools. These descriptive patterns established a compelling foundation for the inferential analyses that followed, while also highlighting the socioeconomic dimension of the data — schools with no music programs had the highest proportion of low-SES students (52.8%), raising important questions about equity in music education access that warranted further statistical control.

Table 2: Bivariate Analysis — Group Differences and Associations Between Music Education Type and Student Outcomes

Outcome Variable	Compulsory vs. Elective	Compulsory vs. No Music	Elective vs. No Music	F-statistic / χ^2	p-value

Academic Performance (ANOVA)	t = 4.21	t = 11.63	t = 6.08	F(2,417) = 74.31	<0.001
Creative Self-Efficacy (ANOVA)	t = 3.74	t = 9.88	t = 5.52	F(2,417) = 58.17	<0.001
Intrinsic Motivation (ANOVA)	t = -2.83	t = 7.41	t = 9.44	F(2,417) = 63.09	<0.001
Socio-Emotional Wellbeing (ANOVA)	t = -1.21	t = 6.72	t = 7.83	F(2,417) = 41.55	<0.001
Above-Median Composite Outcome (χ^2)	$\chi^2=3.82$	$\chi^2=52.14$	$\chi^2=34.67$	—	<0.001
Pearson's r: Music Duration & Academic Score	r = 0.41	—	—	—	<0.001
Pearson's r: Music Duration & Creative SE	r = 0.48	—	—	—	<0.001
Pearson's r: Music Duration & Wellbeing	r = 0.36	—	—	—	<0.001

The bivariate analyses confirmed that statistically significant differences existed across all three groups on every outcome variable examined. The one-way ANOVA results demonstrated highly significant omnibus effects across music education type for academic performance [F(2, 417) = 74.31, p < .001], creative self-efficacy [F(2, 417) = 58.17, p < .001], intrinsic motivation [F(2, 417) = 63.09, p < .001], and socio-emotional well-being [F(2, 417) = 41.55, p < .001]. The post-hoc pairwise comparisons (t-values) revealed that the strongest differentials were consistently observed between the compulsory music group and the no-music group, with the compulsory vs. no-music t-statistics ranging from 6.72 to 11.63 — all large in magnitude. This indicated that the removal of music education entirely was associated with the most substantial deficits in student outcomes, irrespective of whether the program was compulsory or elective. The chi-square test for the composite above-median outcome further corroborated these findings [$\chi^2(2) = 52.14$, p < .001 for compulsory vs. no-music], confirming that the probability of achieving above-median composite outcomes was significantly higher among students in music education programs of any kind compared to those in no-music environments.

The Pearson correlation coefficients introduced an additional and theoretically important dimension to the bivariate findings. The duration of music participation demonstrated moderate-to-strong positive correlations with academic performance (r = 0.41, p < .001), creative self-efficacy (r = 0.48, p < .001), and socio-emotional well-being (r = 0.36, p < .001), suggesting that dosage — the cumulative years spent in music education — mattered beyond mere group membership. These dose-response relationships aligned with neuroeducational theories proposing that musical training produces progressive structural and functional changes in brain regions associated with executive function, memory, and emotional regulation, with benefits accruing over time rather than emerging from short-term exposure. Critically, the finding that the compulsory vs. elective comparison yielded a negative t-statistic for intrinsic motivation (t = -2.83) while remaining positive for academic performance (t = 4.21) was particularly revealing: it suggested a trade-off wherein compulsory music may have reduced self-determined motivation while simultaneously conferring stronger academic benefits a tension that pointed to the importance of pedagogical quality, not merely policy classification, as a mediating variable in the relationship between music education and student outcomes.

Table 3: Binary Logistic Regression Predictors of Above-Median Composite Outcome

Predictor Variable	B	SE	Wald	OR	95% CI	p-value
Block 1 Socio-demographic controls						
Age	0.08	0.09	0.79	1.08	0.91–1.28	0.374
Gender (Female = 1)	0.31	0.19	2.67	1.36	0.94–1.97	0.103
Low SES (Yes = 1)	-0.67	0.21	10.19	0.51	0.34–0.77	0.002
School Type (Private = 1)	0.54	0.22	6.03	1.72	1.11–2.65	0.014
Block 2 — Music education variables						
Compulsory Music (ref: No Music)	1.24	0.27	21.11	3.46	2.03–5.88	<0.001
Elective Music (ref: No Music)	0.89	0.28	10.10	2.43	1.41–4.20	0.001
Duration of Music Participation (years)	0.19	0.06	10.24	1.21	1.08–1.36	0.001
Model Fit	Nagelkerke R ² = 0.38 H-L $\chi^2(8) = 6.94$, p = 0.543 Overall accuracy = 72.4%					

The binary logistic regression model demonstrated strong overall fit and identified music education type as the most powerful independent predictor of above-median composite outcomes after controlling for socio-demographic confounders. Block 1 controls revealed that low socioeconomic status was a significant negative predictor [OR = 0.51, 95% CI: 0.34–0.77, $p = .002$], indicating that students from low-SES backgrounds were approximately half as likely to achieve above-median composite outcomes, underscoring the structural inequities embedded in educational performance. Private school enrollment was a significant positive predictor [OR = 1.72, 95% CI: 1.11–2.65, $p = .014$], reflecting the resource advantages associated with institutional type. Gender and age did not emerge as significant predictors in the adjusted model, suggesting that their bivariate associations with outcomes were largely explained by structural and programmatic variables. In Block 2, the introduction of the music education variables produced a substantial increase in explanatory power (Nagelkerke $R^2 = 0.38$), indicating that music education variables accounted for meaningful variance in outcomes above and beyond the demographic controls.

The central finding of the regression was that enrollment in compulsory music education was the strongest predictor of above-median composite outcomes in the model [OR = 3.46, 95% CI: 2.03–5.88, $p < .001$]. This odds ratio indicated that, after accounting for socioeconomic status, school type, age, and gender, students in compulsory music programs were 3.46 times more likely to achieve above-median outcomes compared to students in schools with no music program. Students in elective programs also showed significantly elevated odds [OR = 2.43, 95% CI: 1.41–4.20, $p = .001$], confirming that any structured music provision conferred advantage. The duration of music participation independently predicted outcomes [OR = 1.21 per additional year, 95% CI: 1.08–1.36, $p = .001$], reinforcing the dose-response pattern observed in the bivariate analysis. The model's satisfactory Hosmer-Lemeshow goodness-of-fit [$\chi^2(8) = 6.94$, $p = .543$] and 72.4% overall classification accuracy affirmed its reliability. Importantly, the fact that compulsory music yielded stronger odds than elective music in the adjusted model — despite lower intrinsic motivation scores at the univariate level — suggested that the academic and socio-emotional scaffolding provided by structured, institutionally supported music programs may offset motivational costs, and that policy-level commitment to music education, when accompanied by adequate institutional support, translates into measurable student-level benefits.

Conclusion

This study provided robust empirical evidence that compulsory music education is a significant and positive predictor of student outcomes across academic, creative, and socio-emotional domains. Through a combination of descriptive, bivariate, and multivariate analyses conducted on a stratified sample of 420 secondary school students, the findings consistently demonstrated that students enrolled in compulsory music programs outperformed their peers in schools with elective or no music programs on composite measures of academic performance, creative self-efficacy, and socio-emotional well-being, even after controlling for socioeconomic status, school type, age, and gender. The logistic regression revealed that compulsory music participation raised the odds of achieving above-median composite outcomes by a factor of 3.46, while each additional year of music participation independently increased these odds by 21%, affirming a dose-response relationship that aligns with neuroeducation theories of cumulative musical benefit. A nuanced tension was, however, identified: compulsory music programs were associated with marginally lower intrinsic motivation than elective programs, cautioning against policy designs that mandate music education without simultaneously investing in student-centered pedagogical approaches that preserve agency and engagement. Taken together, the evidence firmly supports the inclusion of music education in formal school curricula as a matter of policy, not preference but equally underscores that the quality, resourcing, and pedagogical philosophy of that education are as consequential as its compulsory status.

Recommendations

Institutionalize music education as a core curriculum subject. Governments and national education authorities should formally designate music education as a compulsory component of the secondary school curriculum, supported by dedicated funding, trained specialist teachers, and adequate instructional materials particularly in low-SES and public-school settings where music programs are most absent and need is greatest.

Adopt student-centered pedagogical approaches within compulsory music programs. To mitigate the observed reduction in intrinsic motivation associated with compulsory participation, curriculum designers and music educators should incorporate choice-based learning elements, culturally relevant repertoire, and project-driven assessments that preserve learner autonomy within the structure of a mandated program, thereby reconciling policy requirements with motivational psychology.

Invest in longitudinal monitoring and equity-focused evaluation of music education outcomes. Education ministries and school systems should establish regular, disaggregated data collection on the academic, creative, and well-being outcomes of students in music programs, with specific attention to socioeconomic disparities, in order to track the cumulative dose-response benefits identified in this study and ensure that compulsory music education serves as an equity lever rather than an additional privilege of well-resourced schools.

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