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RESEARCH ARTICLE

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VIEWS OF MUSIC TEACHERS ON THE CONTRIBUTION OF MUSIC TO THE ENVIRONMENTAL AWARENESS OF STUDENTS IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT EDUCATION

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ABSTRACT

This study seeks to link Environmental Education with Music Education. The goal of this study is to explore the views of Music Teachers on the contribution of music to the environmental awareness of students in the context of Education for Sustainable Development. In particular, the views of teachers on the environment, sustainability, environmental education, education for sustainable development, their intention to approach Sustainable Development Education through Music Education were examined and recorded, as well as the ways they use to achieve it. The documentation and lookup for answers to these issues led to finding researches, using issues that are directly or indirectly related to our research questions, justifying the importance of the research problem. A review of research to investigate the results of the application of techniques in the educational process follows. Kyriazakos (2017), with the qualitative research on twenty-three Greek artists who are professionally engaged in the field of music, aims to explore the views of artists on issues related to the contribution of music and songs in raising awareness of individuals and groups on environmental issues. Agapakis (2013) aims to highlight the music and the sounds themselves produced by the natural environment as a useful tool in the hands of teachers, in the field of environmental education. Sergi (1993) investigates, with her experimental research, the possible effect of music on the formation of the child's personality in preschool age, through the cross-curricular approach of teaching-learning with music education as central axis.

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INTRODUCTION

This research paper concerns the views of music teachers on the contribution of the teaching field of Music Education to the environmental awareness of the students in the context of Education for Sustainable Development. In this context, the reasons for the importance of the study are presented, examining the environmental information, the awareness of the students, and the promotion of the Environmental Education and the Education of Sustainable Development, through music education. This perspective was considered interesting with multifaceted socio-cultural dimensions, as it enriches the learning-school environment, which according to Bruner "is a cultural instrument that develops and explores the mental abilities of individuals in a society... if we help the students to use their potential, we will have a higher probability of surviving as a democracy, in a time so demanding..."

Sustainable Development Education as a further evolution of Environmental Education was created by the need for education to respond to the environmental challenges of the planet. By implementing innovative pedagogical approaches, it aims to function as an organizational framework for education, with sustainability being the central idea, which connects mutually feeding the environment, the economy, and society. The aim is to equip the students with the values and skills to actively participate in the configuration of sustainability principles through collective and democratic processes (Flogaiti, 2011, p. 117). Environmental Education, as a transformational education, which aims at redefining the entrenched mentalities and attitudes, which have been adopted by the society over the years, regarding the environment (natural and man-made), is an education of active citizens, to whom it provides knowledge, abilities, and skills through experiential learning and their contact with the environment. On the other hand, music education aims to develop and cultivate the ability for aesthetic pleasure in listening, performing, and creating music as one of the manifestations

of human artistic expression and creativity, while at the same time it offers the individual a powerful means of expression and communication because through the music he acquires musicality and sensitivity. Through this purpose and in parallel with it, music education aims at the general cultivation of creativity and personality of individuals, through active listening, music creation, and performance activities. Consequently, the combination of Environmental Education and Music Education as educational acts focus their interest on the interaction of human interpersonal relationships with their fellow human beings, but with their environment (social, cultural, physical), in the acquisition of knowledge, attitudes, and skills possessed by concepts such as the effect of music on the overall development of the child (psychomotor, cognitive, emotional, social) and especially the effectiveness of the method of cross-curricular approach with music education in its teaching as a central axis.

THEORETICAL FRAMEWORK

Education for Sustainable Development: The Sustainable Development Summit in Johannesburg in 2002 incorporates sustainable development into education systems at all levels to promote education as a key element for change. The Ministry of Education, in line with the goals of UNESCO and the United Nations, configured educational activities for the decade 2005-2014, to develop school activities that support the formation of active citizens and promote the opening of the school to society. The vision of the “Decade of Education for Sustainability” is the program to reorient education around the pillars of sustainable development, so that everyone can benefit from education and learn the values, behaviors, and lifestyles required for a sustainable future and positive social changes (Papavasiliou, 2019, p. 15). To achieve its purpose, Sustainable Development Education (SDE) must have specific characteristics: to be dynamic and evolving due to its further evolution, to be holistic for the comprehensive analysis, to be systemic due to the complex systems, to be interdisciplinary for thorough analysis, to be cross-curricular changing the overall structure, to include critical thinking, to be value-oriented with a vision of social justice and finally to be political and action-oriented (Liarakou & Flogaiti, 2007, pp. 164-172). The thematic units of SDE include local, regional and global issues, according to the pre-existing knowledge of the students and the interests that excite them in their direct local environment. The framework of SDE is a socially critical, democratic, value-oriented education, based on the coupling of the natural sciences with the social sciences and humanities as well as the arts. The range of topics is contemporary, methodically interpreting their connection with national and global socio-cultural developments. It promotes collectivity for decision-making through democratic processes by promoting student-centered education through interaction. Instructors and learners act creatively in free activities leading to flexible learning and decision-making processes while cultivating critical thinking and the initiative of sustainable action. The general goal of SDE is to redefine the system of values and attitudes of life in order to bring about a change in the behavior of individuals and societies and will lead to a sustainable and fair society for everyone (Papavasiliou, 2019, pp. 17-18).

Music and Curriculum: The aim of the Detailed Study Outlines (DSO) is the development of the cognitive, emotional, and psychomotor sectors. The DSO should take into account the multiformity of the student population in terms of its cultural, economic, social, and geographical characteristics, as well as the individual differences of students and their previous educational experiences. While they should have smooth transitions from one level to another, support the multiplicity of learning resources, and promote active, participatory, interlocutory, exploratory, and self-directed forms of learning. To foresee the utilization of information, to create learning motives for the student, but also possibilities for innovative action for the teacher. To suggest activities that take into account the interests of the students, to set the minimum of knowledge for the students of each class, to be governed by the principles of intercultural education, to allow the diffusion of the

contents of learning, and to establish commonly accepted relationships and behavior rules, based on a spirit of philanthropy and altruism (Vrettos & Kapsalis, 2014). In 2003, new curricula that, according to the Pedagogical Institute, attempted to link cognitive subjects. “*These programs aimed to ensure the continuity of the taught material, to eliminate the fragmentation of knowledge, to avoid duplication of the material, as well as to create a framework that would ensure greater autonomy for the teacher*”. Among many cognitive subjects, in 2003 were instituted by the Hellenic Republic (Government Gazette 303B / 13-03-2003, 2021), the Music Education Curriculum Interdisciplinary Unified Framework (Music Education CIUF) and the DSO (Government Gazette 304B/13-03-2003, 2020). Subsequently, for the restructuring of Greek education, the Operational Program entitled “Education and Lifelong Learning” (ELL) was developed and implemented during the period 2007-2013. ELL had as its goal the achievement of the quality of the Greek educational system. More specifically, its main objectives referred to the connection of the provision of education and knowledge with “*the formation of integrated personalities and people capable of meeting the requirements of the modern social and economic environment*”. With the establishment of this program, the foundations were laid for the creation of a school, known as the “New School - School of the 21st Century”, with the aim of creative and innovative education, open to the developments of global knowledge. The framework of the “New School” aims to connect the school with the needs of the modern era. It places the needs of children at the center of education and supports the implementation of the elimination of all cultural and religious discrimination, as well as social and educational inequalities. Specifically, it is stated that “*we do not leave any school or any child to stay behind*”. The European Union with the Lisbon Agenda recognizes the importance of education and investment in human capital in order to ensure conditions for the growth and strengthening of “employment”, “economic reform” and “social cohesion”. The planning also takes into account the educational needs arising from the “Knowledge Society”, in which the new type of school will be open and will make good use of new technologies. The process of education and learning will not be implemented exclusively in the classroom (Pedagogical Institute, 2011).

The learning program corresponds to the basic principles of the New School which is “the utilization of culture in education, not only introducing children to the arts but also using the arts as a teaching tool, by developing theatrical education and utilizing theatrical play, by the teaching of music for the development of students’ musical skills, but also for the better knowledge of music in the widest possible range and by highlighting the dynamics of visual arts and aesthetic education for the cultivation of students’ personality, but also the cognitive process” (Ministry of Education, 2020). The new Music Curriculum (MC) utilizing the existing legislations, the functional structures and the human resources of the school, aims at the gradual transformation of Education. The MC is a unified, open and flexible Curriculum that facilitates the teacher to design the Music lesson according to the needs and interests of his/her students, embracing the principle of differentiated teaching, incorporating innovative teaching approaches and utilizing the new technologies of digital education (Ministry of Education, 2014).

The goal of music education is “*primarily the development and cultivation of the ability for aesthetic enjoyment in listening, performing and creating music as one of the manifestations of artistic expression and creativity of man. Through this purpose and in parallel with it, music education aims at the general cultivation of creativity and personality of students, through active listening, music creation and performance activities*” (Ministry of Education, 2020, p. 4070). The goals of the new MC concern all aspects of music education that take place in the context of compulsory education, where they develop spirally structured starting from Kindergarten to High School. The goals concern the development of musical skills and knowledge and are achieved through the implementation of experiential and active musical activities with a specific goal and organized context. The goals also stem from the pursuits of the lesson of Music in terms of the integrated development of the personality of

the child and the young person, the cultivation of attitudes and values and even from the connection of music with the wider society, human history and his environment (natural and man-made). This holistic approach to the musical phenomenon, through the active participation of the student in creative and experiential activities throughout the spectrum of his student life, can create the conditions for the development of a lifelong relationship with the art of music. (Ministry of Education, 2014).

Music education and learning in music-pedagogical systems: Music Pedagogy examines the theories of pedagogical science but also the practical applications concerning music and the context of general education. Music-pedagogical systems are comprehensive educational proposals that address the wider culture of the child, not only music, and follow a specific and studied methodology in order to “reach their goal”, which is to cultivate the child’s personality (Antonakakis & Chiotaki, 2007, p. 55). Plato in *Politia* points out the importance of music in education, emphasizing that every human character can be improved through music because it contributes to the formation of their moral and mental culture. Accordingly, in *Protagoras*, he states that the music teacher should use appropriate methods to help the student develop self-control and prevent him from bad deeds. Aristotle believed that music affects the moral character of the soul, so young people should be guided by music and educated in it (Kokkidou, 2006, p. 83). E.J. Dalcroze (1865-1950) believed that through body movements the students acquire musical perception, helping them to “control the rapid communication between the external senses (hearing, vision, tactility and movement) and the hidden internal functions of the brain that control memory, judgment, will and imagination” (Karadimou-Liatsou, 2003, p. 25). It is aimed at the development of inner hearing, i.e. the ability to create musical sensations and impressions in any engagement with music (thinking, listening, performing, reading and writing music) with and without the help of a musical instrument. Dalcroze’s innovations were the introduction of music as sound and not as notes, that is, theory follows practice and improvisation follows every musical activity (Magaliou, 2007, pp. 12-15).

Zoltan Kodaly (1882-1967) formed a music-pedagogical system with a core of traditional music and the cultivation of voice, song and the development of “inner hearing”. He systematically examines the subject of listening and maintains that the folk tradition is the mother tongue of music and everyone has to first know the traditional children’s songs of different peoples and consequently to listen to works of classical music. Reading and writing in conjunction with the historical context is important for the study of any kind of art. The movement is mainly used as an auxiliary means for the experience of the pieces and the pentatonic scale helps the vocal practice to obtain a stable tone in the song (Karadimou-Liatsou, 2003, p. 95; Kokkidou, 2006, pp. 88-89). Carl Orff (1895-1982), his method is not a system but a theoretical conception according to which the learning of music is done through the regulated movement of the body and from the rhythm created by the words (Sergi, 1993, pp. 154-155) and the harmonious relationship between the three forms of human existence, movement (expression of the body), speech (expression of thought) and dance. It is therefore a kind of music (expression of emotions), not only as listeners but also as co-performers. His four stages of teaching were: imitation (teacher - classmates), exploration (alternations of the musical element e.g. dynamics, time, measure, accompaniment), reading and writing (symbolic and improvised notation, form, graphs) and improvisation (rhythmic and melodic editing of lyrics, movement). The goals of Carl Orff’s music-motor education were: the development of children’s sociability, their ability to perceive the way sound and movement are organized through composition, the development of their emotions, personality and positive self-image, as well as the ability to improvise with the use of body, voice and musical instruments, primarily for their pleasure. At the same time, it is an ideal means of intercultural education, knowing the goods of other cultures (Karadimou-Liatsou, 2003, p. 54; Kokkidou, 2006, p. 89). The method of Shinichi Suzuki (1898-1998) considers that children can use the language of music as easily as they learn their mother tongue.

Initially, the method focused on teaching the violin and then extended to other instruments. It is a way of life-based on the fact that man is a product of the environment, developing the character and personality of children through music, following the developmental phases of linguistic communication. It also has similarities with the “traditional – folk” way of learning traditional instruments, since, through careful listening, imitation, memorization and repetition, the children or their apprentices were taught by the organ players and in this way, the musical tradition of centuries survived until and our days (Antonakakis & Chiotaki, 2007, pp. 73-74).

METHODOLOGY

The research: Research is a process in which a step-by-step process is followed to gather and analyze information to increase understanding of a topic or issue. More broadly, the research consists of identifying the research problem or issue, reviewing the bibliography, identifying research questions or statements, and compiling, analyzing, and interpreting data. The climax lies with an interpretive report that is presented, evaluated and possibly used by the scientific community (Creswell, 2011, p. 36). According to Creswell, the purpose of the research determines the main intention, the aim of the topic and the focus point of the study, as it focuses on specific points, i.e. the identification of specific research questions (Creswell, 2011, p. 30). More specifically, the purpose of this research is to explore the views of music teachers on the contribution of the subject of Music Education to the environmental awareness of the students within the SDE.

Methodological tool: According to Creswell, researchers collect data based on an instrument or tool or collect information through a checklist that measures, observes or documents quantitative data (Creswell, 2011, p. 75). The selection of the appropriate method of information collection is done in a way that serves the purposes of the research in order to give valid and reliable results (Andreadakis, Kaila, & Pediaditis, Winter semester 2019-2020, p. 62) and enables the researcher for collecting large and varied amounts of information from a large number of people and in a limited time (Vamvoukas, 2002). The data collection of the present study was conducted with electronic questionnaires, providing easy and fast data (Creswell, 2011, p. 433). The questionnaire contains a cover letter that aims at the communication relationship between the researcher and the respondent. This cover letter lists the required information about the identity of the researcher, the purpose of the survey questionnaire, and the importance of this study. According to (Cohen, Manion, & Morrison, 2008) “a letter that precedes the review and informs respondents about the forthcoming questionnaire has proven substantial results on response rates”. Finally, the absence of the researcher when completing the questionnaire and ensuring anonymity guarantees high levels of honesty from the respondent (Vamvoukas, 2002, p. 248).

Method of statistical analysis of research data: The processing of the quantitative data collected during the research, were processed through the statistical program SPSS. For the statistical analysis of the research findings, the 23rd edition of the program was utilized, which is considered the most appropriate statistical tool for the needs of the social and pedagogical sciences. For all research variables, the steps of descriptive and inductive analysis were followed. At the stage of descriptive statistics, for the case of the categorical variables, tables of distribution of frequencies and percentages are given, as well as for the quantitative ones, the average (AV) is presented as a measure of central tendency and the standard deviance (S.D.) as an indicator of price dispersion. Then the inductive statistics stage was followed, for those cases in which the statistical significance of the correlation between an independent categorical variable and a dependent one in gradational scale (likert) had to be checked, initially a normality check of all the values of the gradational one was performed according to the Kolmogorov-Smirnov criterion, in order to examine whether a parametric or non-parametric test should be used. The results of the research showed that the conditions of normality are not

guaranteed for all variables. Therefore, for this reason, the following were used: a) in the case where the independent variable was of two categories (e.g. gender) the non-parametric criterion Mann-Whitney U test for two independent samples instead of the t-test for independent samples and b) in the case where the independent variable was more than two categories (e.g. age, service position) the non-parametric criterion Kruskal-Wallis H test instead of the parametric One-way ANOVA. Finally, the statistical tests were performed with a level of statistical significance $p=0.05$.

The sample: The present research approach is quantitative and is based on the participation of respondents. The effectiveness of the research largely depends on the quality of the answers, the reliability of the participants and the willingness to assist in the process. The sample ideally assumes that the selection will be made by a random population, where everyone has the same opportunity to participate in it and say that it is a representative sample that can lead to generalized results, drawing some conclusions for the study population (Robson, 2010). In the present study, the sample selected for the quantitative research investigation, due to the pandemic conditions of Covid-19, was a convenience sample and consisted exclusively of in-service Primary and Secondary Education Music teachers. An attempt was made to ensure a wide range of variables, depending on the existing conditions, such as:

- The gender.
- The age.
- The position of service.
- The years of service.
- The degree.
- The educational service.

According to the sampling plan, this research follows a sample of non-probability. In the non-probability samples, the selection is not based on chances of participation, but on criteria such as convenience, ease of access to the sample, availability, or time available for collection. In the convenience sample, the units (participants) are selected based on convenience and do not aim to represent the entire population because they are not random. The sample of the research is 198 in-service Primary and Secondary Education Music Teachers. Of these, 77 (38.9%) were men and 121 (61.1%) were women.

RESULTS

From the analysis of the questionnaire question “What is the degree of your agreement regarding the following statements concerning the music-pedagogical teaching methods to ensure the Education of Sustainable Development?”, the respondents are asked to answer to twenty-five sentences, in order to control the degree of use of music-pedagogical methods to ensure SDE. In the first sentence “Improvisation follows every musical activity”, the highest percentage of 41.9% with 83 answers states “I agree enough”, followed by the answer “I agree” with 37.9% and 75 respondents. 15.7% with 31 “Neither agree nor disagree”, 7 states “I disagree enough” with a percentage of 3.5% and finally 2 answers “Absolutely disagree” with a percentage of 1.0%. (Average of agreement degree is 4.12). Second sentence “Body movements serve the musical perception” 110 out of 198 respondents answered “I totally agree” with a percentage of 55.6%. Following are 69 answers “I agree enough” at a percentage of 34.8%, 17 answers “Neither agree nor disagree” at a percentage of 8.6%, while the same percentage is for the answer “I strongly disagree”, and 1 respondent on “I completely disagree” with a percentage of 0.5% respectively. (Average of agreement degree is 4.44). Third sentence “Sufficient music experience before the efforts are made in music reading”, the highest percentage is 31.3% with 62 answers stating “I agree enough”, followed by the answer “I totally agree” with 24.7% with 49 respondents. 21.2% with 42 “I strongly disagree”, 36 state “Neither agree nor disagree” with a percentage of 18.2% and finally 9 answers “I strongly disagree” with a percentage of 4.5%.

(Average of agreement degree is 3.51). Fourth sentence “Composition by the children themselves”, the highest percentage of 43.4% with 86 answers states “I agree enough”, followed by the answer “I totally agree” 40.4% with 80 respondents. 14.6% with 29 “Neither agree nor disagree”, 3 state “I disagree enough” with a percentage of 1.5% and finally no “I absolutely disagree” with a percentage of 0.0%. (Average of agreement degree is 4.23). Fifth sentence “Learning to follow a spiral evolution”, the highest percentage of 48.0% with 95 answers states “I agree enough”, followed by the answer “I totally agree” 32.8% with 65 respondents. 17.2% with 34 “Neither agree nor disagree”, while the percentage is the same in the answers “I strongly disagree” and “I absolutely disagree”, with 2 respondents at a percentage of 1.0% respectively. (Average of agreement degree is 4.11). Sixth sentence “The pedagogical material should be proportional to the level of development of the child” 101 of the 198 respondents answered “I totally agree” with a percentage of 51.0%. Following are 75 answers “I agree enough” with a percentage of 37.9%, 21 answers “I neither agree nor disagree” with a percentage of 10.6%, one respondent in the negligible percentage 0.5% answered “I strongly disagree”, while there was no answer on “I totally disagree” with a percentage of 0.0% respectively. (Average of agreement degree is 4.39). Seventh sentence “Teaching music with self-action and artisanal engagement through play” 98 out of 198 respondents answered “I totally agree” with a percentage of 49.5%. Following are 77 answers “I agree enough” with a percentage of 38.9%, 19 answers “Neither agree nor disagree” with a percentage of 9.6%, a percentage of 1.5% say “I disagree enough” with 3 answers, while one respondent in the negligible percentage of 0.5% states “I completely disagree”. (Average of agreement degree is 4.35). Eighth sentence “Reading and writing in combination with the historical context”, the highest percentage of 37.9% with 75 answers states “I agree enough”, 32.3% with 64 “Neither agree nor disagree”, followed by 24.7% on the answer “I absolutely agree” with 49 respondents. 9 respondents state “I disagree enough” with a percentage of 4.5%, while one respondent in the negligible percentage of 0.5% states “I strongly disagree”. (Average of agreement degree is 3.82).

Ninth sentence “Variety of sensory-motor exercises” 110 out of 198 respondents answered “I totally agree” with a percentage of 55.6%. Following are 72 answers “I strongly agree” with a percentage of 34.4%, 14 answers “I neither agree nor disagree” with a percentage of 7.1%, 2 respondents with a percentage of 1.0% answered “I strongly disagree”, while no respondent answered “I strongly disagree” with a percentage of 0.0%. (Average of agreement degree is 4.46). The tenth sentence is “Sense of perfect tonality from an early age”, where 64 respondents stated “Neither agree nor disagree” with a percentage of 32.3%, followed by the answer “I agree enough” with a percentage of 28.8% with 57 respondents. 19.7% state “I totally agree” with 39 statements, 28 answers “I strongly disagree” with a percentage of 14.1%, and 10 answers “I strongly disagree” with a percentage of 5.1%. (Average of agreement degree is 3.44). In the eleventh sentence “Introduction to music reading and writing”, the highest percentage of 41.9% with 83 answers states “I agree enough”, followed by the answer “I totally agree” 31.3% with 62 respondents. 20.2% with 40 “Neither agree nor disagree”, 11 respondents in a percentage of 5.6% answered “I strongly disagree”, while 2 respondents in a percentage of 1.0% state “I completely disagree”. (Average of agreement degree is 3.97). In the twelfth sentence “Memorizing traditional songs”, the highest percentage of 40.4% with 80 answers states “I agree enough”, followed by divided percentages between them, the answer “I totally agree” with 25.8% and 51 respondents, and 22.2% with 44 “Neither agree nor disagree”, and 20 respondents with a percentage of 10.1% answered “I strongly disagree”. Finally, 3 respondents with a percentage of 1.5% state “I completely disagree”. (Average of agreement degree is 3.79). Thirteenth sentence “Learning solfeggio from kindergarten to advanced choirs”, continues with divided percentages among them, 56 respondents answered “I totally agree” with a percentage of 28.3%, followed by the same percentage answers “I agree enough” and “Neither agree nor disagree” with 49 at 24.7%. 31 respondents answered “I strongly disagree” with a percentage of 15.7%, while 13 respondents answered “I completely disagree” in a percentage of 6.6%.

Table 1. Averages and standard deviances regarding the statements about the music-pedagogical teaching methods for ensuring Sustainable Development Education, depending on the gender Statistical significance check of the differences of the averages

GENDER MUSIC-PEDAGOGICAL TEACHING METHODS IN SDE	MALE		FEMALE		Statistical significance check	
	AVG	S.D.	AVG	S.D.	U	p
13_1 Improvisation follows every musical activity	4.32	0.850	3.99	0.861	3556.500	.003
13_9 Variety of sensory-motor exercises	4.26	0.785	4.60	0.556	3601.500	.002
13_10 Sense of perfect tonality from an early age	3.65	0.957	3.31	1.182	3882.000	.041
13_17 Improvisation and free creative expression with instruments or with the use of body and voice	4.48	0.641	4.66	0.541	3983.000	.041

Table 2. Averages and standard deviances regarding the statements about the music-pedagogical teaching methods to ensure Sustainable Development Education, depending on the age. Statistical significance check of the differences of the averages

AGE MUSIC- PEDAGOGICAL TEACHING METHODS IN SDE	23-30		31-40		41-50		>50		Statistical significance test		
	AVG	S.D.	AVG	S.D.	AVG	S.D.	AVG	S.D.	H	df	p
13_7 Teaching music with self-action and artisanal engagement through play	4.46	0.576	4.47	0.724	4.06	0.886	4.43	0.634	10.207	3	.017
13_14 The development of the teacher's imagination in the use of methods	4.71	0.460	4.67	0.599	4.42	0.602	4.64	0.559	10.057	3	.018
13_21 Parents actively participate in the lessons and have an educational role in the family environment	3.68	0.983	3.69	1.164	3.09	1.181	3.21	1.134	10.273	3	.016
13_23 Learning through imitation with or without sheet music	4.29	0.976	4.34	0.690	4.09	0.861	3.79	0.995	9.656	3	.022

Table 3. Averages and standard deviations regarding the statements about the music-pedagogical teaching methods to ensure Sustainable Development Education, depending on the position of service. Statistical significance check of the differences of the averages

SERVICE POSITION MUSIC- PEDAGOGICAL METHODS TEACHING IN SDE	PERMANENT		FULL-TIME ALTERNATE		PART-TIME ALTERNATE		HOURLY EMPLOYEE		Statistical significance check		
	AVG	S.D.	AVG	S.D.	AVG	S.D.	AVG	S.D.	H	df	p
13_1 Improvisation follows every musical activity	3.90	0.863	4.18	0.871	4.25	0.851	4.60	0.699	9.451	3	.024
13_4 The composition by the children themselves	3.94	0.807	4.36	0.706	4.40	0.598	4.30	0.675	12.811	3	.005
13_7 Teaching music with self-action and artisanal engagement through play	4.13	0.839	4.42	0.729	4.50	0.607	4.80	0.422	10.616	3	.014
13_14 The development of the teacher's imagination in the use of methods	4.44	0.590	4.64	0.605	4.75	0.444	5.00	0.000	14.167	3	.003
13_17 Improvisation and free creative expression both with instruments and with the use of body and voice	4.40	0.639	4.68	0.544	4.65	0.587	4.70	0.483	9.837	3	.020
13_21 Parents actively participate in the lessons and have an educational role in the family environment	3.08	1.205	3.59	1.119	3.65	1.226	4.00	0.667	9.771	3	.021
13_22 The courses are individual and group	4.10	0.970	4.51	0.680	4.35	0.813	4.30	0.823	8.987	3	.029
13_23 Learning through imitation with or without sheet music	3.90	0.824	4.30	0.864	4.40	0.598	4.30	0.823	13.515	3	.004
13_24 The creation of musical instruments together with the students	3.94	1.038	4.35	0.926	4.45	0.759	4.60	0.699	11.157	3	.011

(Average of agreement degree is 3.53). Fourteenth sentence "Development of the teacher's imagination in the use of methods" 129 out of 198 respondents answered "I totally agree" with a percentage of 65.2%. Following are 61 answers "I agree enough" with a percentage of 30.8%, 7 answers "Neither agree nor disagree" with a percentage of 3.5%, one respondent in the negligible percentage 0.5% answered "I strongly disagree", while no one replied, "I completely disagree". (Average of agreement degree is 4.61). In the fifteenth sentence "Rhythm is considered primary and basis in music education" 125 of the 198 respondents answered "I totally agree" with a percentage of 63.1%. Following are 65 answers "I agree enough" with a percentage of 32.8%, 8 answers "Neither agree nor disagree" with a percentage of 4.0%, while no respondent answered "I disagree enough" and "I strongly disagree". (Average of agreement degree is 4.59). In the sixteenth "Use of simple melodic intervals of two tones, the interval of the 3rd small Sol-Mi and gradually, other intervals of the pentatonic scale", the highest percentage of 43.4% with 86 answers states "I totally agree", followed by the answer "I agree enough" with a percentage of 39.9% and 79 respondents, 12.1% with 44 "Neither agree nor disagree" and 5 respondents with a percentage of 2.5% answered, "I strongly disagree". Finally, 4 respondents with a percentage of 2.0% state "I strongly disagree". (Average of agreement degree is 4.20).

Seventeenth sentence "Improvisation and free creative expression both with instruments and with the use of body and voice" 127 out of 198 respondents answered "I totally agree" with a percentage of 64.1%. Following are 61 answers "I agree enough" with a percentage of 30.8%, 10 answers "Neither agree nor disagree" with a percentage of 5.1%, while there were no answers "I disagree enough" and "I strongly disagree". (Average of agreement degree is 4.59). In the eighteenth sentence "Participation in appropriately classified music activities", the highest percentage of 61.6% with 122 answers states "I totally agree", followed by the answer "I agree enough" 33.3% with 66 respondents, 4.0% with 8 "I neither agree nor disagree" and 2 respondents with a percentage of 1.0% answered "I strongly disagree". Finally, no respondent with a percentage of 0.0% states "I completely disagree". (Average of agreement degree is 4.56). Nineteenth sentence "Listening to the musical works that the child is going to play" 130 of the 198 respondents answered "I totally agree" with a percentage of 65.7%. Here are 57 answers "I agree enough" with a percentage of 28.8%, 10 answers "Neither agree nor disagree" with a percentage of 5.1%, one respondent in the negligible percentage 0.5% answered "I strongly disagree", and no one answered "I completely disagree". (Average of agreement degree is 4.60). Twentieth sentence "The repertoire is predetermined and adapted to the needs of each child", the highest percentage of 45.5%

with 90 answers states "I totally agree", followed by the answer "I agree enough" 36.9% with 73 respondents and 12.6% with 25 "Neither agree nor disagree" and 7 respondents with a percentage of 3.5% answered "I strongly disagree". Finally, 3 respondents with a percentage of 1.5% state "I completely disagree". (Average of agreement degree is 4.21). Twenty-first sentence "Parents actively participate in lessons and have an educational role in the family environment", where 64 respondents said "I agree enough" with a percentage of 32.3%, followed by the answer "Neither agree nor disagree" with a percentage of 28.8% and 57 respondents. 20.2% say "I totally agree" with 40 statements, 21 answers "I strongly disagree" with a percentage of 10.6% and 16 answers "I strongly disagree" with a percentage of 8.1%. (Average of agreement degree is 3.46). Twenty-second sentence "Lessons are individual and group" 102 out of 198 respondents answered "I totally agree" with a percentage of 51.5%. Following are 73 answers "I agree enough" with a percentage of 36.9%, 16 answers "Neither agree nor disagree" with a percentage of 8.1%, and 5 respondents with a percentage of 2.5% answered, "I strongly disagree". Finally, 2 respondents with a percentage of 1.0% say "I strongly disagree". (Average of agreement degree is 4.35). In the Twenty-third sentence "Learning through imitation with or without sheet music", the highest percentage of 44.4% with 88 answers states "I agree enough", followed by the answer "I totally agree" with a percentage of 39.9% and 79 respondents. 11.1% with 22 "I neither agree nor disagree", 7 state "I disagree enough" with a percentage of 3.5%, and finally 2 answers "I completely disagree" with a percentage of 1.0% (Average of agreement degree is 4.19). Twenty-fourth sentence "Creating musical instruments with students" 102 out of 198 respondents answered "I totally agree" with a percentage of 51.5%. Here are 58 answers "I agree enough" with a percentage of 29.3%, 24 answers "Neither agree nor disagree" with a percentage of 12.1%, and 12 respondents with a percentage of 6.1% answered "I strongly agree". Finally, 2 respondents with a percentage of 1.0% state "I completely disagree". (Average of agreement degree is 4.24)

Lastly, the twenty-fifth sentence "Choir", 126 out of 198 respondents answered "I totally agree" with a percentage of 63.6%. Following are 54 answers with a percentage of 27.3% "I strongly agree", 14 answers "Neither agree nor disagree" with a percentage of 7.1%, and 3 respondents with a percentage of 1.5% answered "I strongly disagree", while one respondent in the negligible percentage of 0.5% states "I completely disagree". (Average of agreement degree is 4.52)

Inductive results: Specializing the research, an attempt was made to explore the music-pedagogical teaching method used by the teachers, focusing on achieving the goals they set for their students in their lesson. It was found that most of the respondents, as can be seen from their statements, can utilize all the goals of the EE, which leads to the conclusion that they utilize the teaching of music within the SDE, strengthening with a large percentage (71.7%) group work, the ability of students to express their ideas (64.6%), to form moral values (61.1%) and to develop creative and critical thinking (59.1%), from which we conclude that the knowledge of the sample seems to be high, as in the field of goal setting and specifically in the goals in which the two educational forms (EE and Music Education) converge, is the collaborative teaching, the cultivation of skills, attitudes and values, but also respect and responsibility towards society and the environment as a whole. Regarding the inductive statistical analysis carried out to check the significant differences in the answers of the respondents regarding the gender and the music-pedagogical teaching methods used by the teachers, there were significant discrepancies in respondents' answers based on gender. Specifically, in the sentence "Improvisation follows every musical activity", men (average: 4.32) differentiate their position from that of women (average: 3.99) ($U=3556.500$, $p=.003$). In the sentence "Variety of sensory-motor exercises", women (Average: 4.60), agree to a greater extent than men (Average: 4.26) ($U=3601.500$, $p=.002$). In the sentence "Sense of perfect tonality from an early age", men (average: 3.65) differentiate their position from that of women (average: 3.31) ($U=3882.000$, $p=.041$). In the last sentence of the question, "Improvisation and free creative expression with

instruments or with the use of body and voice", women (Average: 4.66) differentiate their position from that of the male participants (Average: 4.48) ($U=3983.000$, $p=.041$). The above analysis shows that women maintain a more positive attitude towards the factors related to music-pedagogical teaching methods to ensure Sustainable Development Education. The table below lists in detail all the data presented above. Examining the degree of agreement of the sample on the questions about the music-pedagogical teaching method used by the teachers depending on age, there are four differences. Specifically in the first, the respondents belonging to the age group 31-40 (Average: 4.47) consider to a greater extent that "Teaching music with self-action and artisanal engagement through play" is a music-pedagogical method of teaching which is an assurance of Sustainable Development Education. With a small difference between them, follow the respondents of the age group 23-30 (average: 4.46). It is followed by the largest age group over 50 (Average: 4.43) and obviously, a lower degree is shown in the immediately younger age group 41-50 (Average: 4.06) ($H(3)=10.207$, $p=.017$). In the second case, "The development of the teacher's imagination in the use of methods", the younger age group 23-30 (Average: 10.057) state a more positive view, followed by the immediately older age group 31-40 (Average: 4.67), while we observe that the development of the teacher's imagination in the use of methods to ensure SDE, is easier for the younger age groups to resort to.

The following are the age groups over 50 (Average: 4.64) and 41-50 (Average: 4.42) ($H(3)=10.057$, $p=.018$). The picture is the same in the next sentence "Parents actively participate in the lessons and have an educational role in the family environment", with the age group 31-40 stating a more positive view (Average: 3.69), followed by the age group 23-30 (Average: 3.68), then the age group over 50 years (Average: 3.21) and finally the age group 41-50 (Average: 3.09) ($H(3)=10.273$, $p=.016$). Respectively, in the last sentence, it seems that the younger teachers agree with the sentence to a greater extent. In more detail in the option "Learning through imitation with or without sheet music" the age group 31-40 expresses a more positive view (Average: 4.34), followed by the age group 23-30 (Average: 4.29), while the older the age group, the smaller the average. More analytically, the age group 41-50 (Average: 4.09) and finally those over 50 years old (Average: 3.79) ($H(3)=9.656$, $p=.022$). We conclude from the above that younger teachers have a greater degree of agreement and willingness to experiment with new methods of application in their lesson compared to older teachers who of course focus on the contribution and knowledge of environmental actions and active participation. The table below lists in detail all the data presented above.

Examining the degree of agreement of the sample, the questions about the music-pedagogical teaching method used by teachers depending on the position of service, nine differences are identified. In the statement "Improvisation follows every musical activity", it is observed that as the contract and the position of service of the participants increase, their point of view so that the improvisation follows every musical activity, becomes less positive. In more detail, hourly employee (Average: 4.60), part-time alternate (Average: 4.25), full-time alternate (Average: 4.18) and permanent (Average: 3.90) ($H(3)=9.451$, $p=.024$). In the second sentence "The composition by the children themselves" the part-time alternates (Average: 4.40), is particularly positive in the composition by the children themselves with the aim of SDE. They are followed by full-time alternates (Average: 4.36), hourly employees (Average: 4.30) and permanent (Average: 3.94) ($H(3)=12.811$, $p=.005$). In the third sentence "Teaching music with self-action and artisanal engagement through play" it is also observed that as the contract and the position of service of the participants increase, so does their view of teaching music with self-action and artisanal engagement through play becomes less positive. In more detail, hourly employee (Average: 4.80), part-time alternate (Average: 4.50), full-time alternate (Average: 4.42) and permanent (Average: 4.13) ($H(3)=10.616$, $p=.014$). Respectively, in the next sentence "The development of the teacher's imagination in the use of methods" finds the hourly employees (Average: 5.00) completely in agreement, while as the

contract and the position of the participants increase, so does their point of view for teaching music with self-action and artisanal engagement through play becomes less positive. In more detail, part-time alternate (Average: 4.75), full-time alternate (Average: 4.64) and permanent (Average: 4.44) ($H(3)=14.167$, $p=.003$). In the fifth sentence "Improvisation and free creative expression both with instruments and with the use of body and voice," the hourly employees (Average: 4.30) are particularly positive in improvisation and free creative expression both with instruments, as well as with the use of body and voice. They are followed by full-time alternates (Average: 4.68), part-time alternates (Average: 4.65) and permanent (Average: 4.40) ($H(3)=9.837$, $p=.020$). In the statement: "Parents actively participate in the lessons and have an educational role in the family environment", it is constantly observed that as the contract and the position of service of the participants increase, so their opinion that the parents actively participate in the lessons and have an educational role in the family environment becomes less positive. In more detail, hourly employee (Average: 4.00), part-time alternate (Average: 3.65), full-time alternate (Average: 3.59) and permanent (Average: 3.08) ($H(3)=9.771$, $p=.021$). In the seventh sentence "The lessons are individual and group" the full-time alternates (Average: 4.51) are particularly positive that the lessons are individual and group. The following are the part-time alternates (Average: 4.65), the hourly employees (Average: 4.30) and the permanent (Average: 4.10) ($H(3)=8.987$, $p=.029$).

The eighth sentence "Learning through imitation with or without a sheet music" part-time alternates (Average: 4.40) are particularly positive in learning through imitation with or without sheet music, while equally positive are full-time alternates and hourly employees with (Average: 4.30) respectively. Finally, the permanent ones are less positive (Average: 3.90) ($H(3)=13.515$, $p=.004$). In the last sentence "The creation of musical instruments together with the students", it is also observed that as the contract and the position of service of the participants increase, their view on creating musical instruments together with the students becomes less positive. More specifically, hourly employee (Average: 4.60), part-time alternate (Average: 4.45), full-time alternate (Average: 4.35) and permanent (Average: 3.94) ($H(3)=11.157$, $p=.011$). The context highlights the energy of teachers with less contract. They appear quite aware of the environment and are willing to contribute to the environmental awareness of their students through the teaching of music. The table below lists in detail all the data presented above.

CONCLUSION

In conclusion, from the data presented in the dissertation on the views of Music Teachers on the contribution of music to the environmental awareness of students in the context of Sustainable Development Education, the research findings showed that Music teachers understand the connection of problems with the economy, while in terms of the development of sustainability, they recognize the creation of active citizens to achieve its goal, and for the goals of Sustainable Development Education, they declare the awareness of the responsibility that man has in relation to the environment, as well as the formation of environmental values. Regarding the effectiveness of the methods-techniques that are used to ensure Sustainable Development Education, the use of art has a dominant position, while in terms of curriculum integration, they choose of course the Project method that can be included in any course of the curriculum. Evaluating the teaching of music in the context of Sustainable Development Education, teamwork is achieved and creative and critical thinking is developed, according to the view of Music Teachers, who appear quite aware of the environment and are willing to contribute to the environmental awareness of their students through teaching music. According to the gender inductive analysis, we conclude that women are more informed about the purpose and sub-objectives of the principles of sustainability and SDE as it is observed more flexibility in the use of methods-techniques in contrast to men who are more restrained with the principles of curriculum integration in their course.

In terms of age, younger teachers have a greater degree of agreement and willingness to experiment with new methods-techniques in contrast to older age groups, which are more aware of the principles of sustainability. Finally, in terms of service position, we conclude that teachers with a reduced employment contract, hourly employees, differ in their views on curriculum integration and are more positive in dealing with methods-techniques that promote Sustainable Development Education. To cultivate critically-minded citizens, education at all levels, both formal and informal, must be strengthened to provide education and training on Sustainable Development issues. Education should be continued throughout life through lifelong learning with horizontal and vertical actions in the curricula. Finally, teachers should be properly trained to be able to teach Sustainable Development issues and to have good practices and appropriate pedagogical approaches.

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