Promoting integrative teaching through interdisciplinary arts and crafts collaboration between after-school clubs

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Abstract: This article presents an art-teacher-researcher's perspective on issues related to project-based integrative visual arts teaching to primary school students attending after-school activities. Based on the theoretical assumption that contemporary art forms are a suitable pedagogical solution for integrative visual arts teaching, the study explores the transformation and materialisation of a conceptual contemporary art installation into a performance. The described processes reveal the potential of contemporary art forms for encouraging integrative teaching through multiprofessional collaboration, which enhances the simultaneous application of the four integrative teaching styles as defined by Bresler (1995): *subservient*, *co-equal*, *affective* and *social*. The study demonstrates how artistic multiprofessional collaboration, triggered by the contemporary art expression can, in practice, extend the integrative learning opportunities by putting the students into authentic creative processes.

The results of this action research confirm that after-school activities provide a favourable environment for quality integrative teaching as they give the freedom to plan educational thematic projects that allow active *co-equal* collaborations. Such projects unfold the possibilities for learning in collaboration through artistic expression and multidisciplinary discovery, which in turn fosters knowledge and skill transferability that go beyond the discipline-based school curriculum.

Keywords: contemporary art forms; action research; integrative teaching styles; primary after-school activities; multi-professional collaboration;

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Introduction

The present paper is part of a larger research project which I am conducting with primary school students who attend an after-school art programme at an international school in Helsinki. This programme is developed by an after-school team of educators (activity leaders) who are also professionals in different artistic, scientific and educational spheres. It has received the support of the school's authorities, represented by the school principals, the parents' organisation and the teacher's board. The programme complies with the guidelines set in the *National Framework for Before- and After-School Activities in Basic Education* for the primary school level, drafted by the Finnish National Board of Education (Finnish National Board of Education [OPH], 2015). This is the official document that states the main objectives when organising extracurricular school activities, while at the same time giving freedom of choice as regards the methodologies and content of the programmes. This freedom makes the after-school environment a suitable setting for implementing a research project which rests upon the main principles of the newly reformed National Core Curriculum for Basic Education (OPH, 2015). In it the emphasis is on the introduction of 'collaborative classroom practices' through the organisation of 'multidisciplinary, phenomenon- and project-based studies' (OPH, 2015), using new experimental approaches to reach a level of understanding of the interrelatedness between the various school subjects, art and life.

The current research is an attempt to explore the possibilities of implementing the socio-constructivist integrated teaching approach into the visual arts classroom of six-to-eight year old students, attending extracurricular after school activities. This approach encourages the students to discover and make 'associations beyond' different disciplines (Karppinen, Kallunki, Kairavuori, Komulainen, & Sintonen, 2013), knowledge and skills acquired in and out of school.

This paper continues the presentation of an action research process started earlier (Blagoeva, in press) and follows the transformation and the materialisation of a conceptual, contemporary art light-and-sound installation into a performance. Taking the teacher's perspective to interpret the classroom processes through the analytical prism of the socio-constructivist integrative teaching styles (Bresler, 1995) discussed below, the paper reveals the potential of contemporary art forms for promoting integrative teaching through multiprofessional collaboration within the after-school environment.

The present research is inspired by the increased interest in arts-based integrative teaching practices demonstrated in the various research projects in the field of STE(A)M[2] in recent years (e.g., Wilson, 2018; Turkka, Haatainen, & Aksela, 2017; Leysath & Bronowski, 2016; Bautista, Tan, Ponnusamy, & Yau 2015; Overland 2013; Root-Bernstein & Root-Bernstein, 2013; Tani, Jutti, & Kairavuori, 2013). It is an attempt to contribute our Finnish experience to this field of research, and to satisfy the increasing need to educate multiliterate individuals, prepared to deal with the challenges of our present-day complex reality, where young learners are constantly bombarded by visual, verbal and sensory information through different media.

Theoretical background

In an earlier paper (Blagoeva, 2018) I concluded that there exist connections between socio-constructivist learning theories (e.g., Burr, 1995; Tynjälä, 1999; Rauste-von Wright & von Wright, 2000; Säljö, 2004; Swan, 2005; Best, 2008; Gergen & Gergen, 2008; Gergen, 2009), which promote

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[2] The acronym STE(A)M stands for an integrative teaching approach uniting science, technology, engineering, (art) and mathematics.

knowledge integration, and contemporary art practices. I provided evidence that the eclectic nature of contemporary art practices – both on conceptual level and on the level of material expression – allows the establishment of alternative logical links between seemingly unrelated phenomena. I presented my view that contemporary art offers original perspectives, challenging the viewer to experience and internalise these links much in the way the integrative approach to teaching encourages the students to link concepts and skills from various scientific and artistic spheres. The results and conclusions from this prior research of mine confirmed that some contemporary art principles of creation such as uniting, reusing, recontextualising, bricoloaging (Deuze, 2005) and remediating (Bolter & Grusin, 1999) concepts, materials, and forms of expression can provide a suitable background for planning pedagogical solutions for integrative teaching of visual arts to primary school students (Blagoeva, 2018). Resting on these assumptions, the present article further elaborates on the potential of contemporary art to provide a firm basis for quality art integration. It opens a discussion on the possibilities of introducing multiprofessional collaboration within the after-school teaching-learning environment so as to support cross-disciplinary knowledge and skill integration and to foster their transferability on a primary school level. Such a direction of the present research is in line with the emphasis on integrated and multidisciplinary learning laid out in the renewed Finnish National Core Curriculum for Basic Education, which calls for encouraging 'transversal competences in instruction of all subjects' (Turkka et al., 2017; OPH, 2015).

At this point, it is pertinent to distinguish between the three main approaches to integration defined within the field of curriculum integration. In *multidisciplinary integration,* the studied themes are 'viewed through the lens of different subjects' (Harden, 2000, as cited in Tani et al., 2013, p. 173). *Interdisciplinary integration* establishes connections between the different subjects, but they still remain identifiable entities (Lederman & Niess, 1997, as cited in Turkka et al., 2017, p. 1404). Applying *transdisciplinary integration* is considered to be extremely challenging because teaching and studying problems arise in the process of students' active collaboration (Tani et al., 2013, p. 173). Although the contemporary art project presented below can be viewed as incorporating all these integrative approaches to a greater or lesser extent, the term *interdisciplinary integration* seems to best suit the overall learning outcomes of the project, so it will be used in its analysis below. References to multidisciplinary and transdisciplinary integration will be made only where necessary.

It is also important to note here that some of the recent research papers in the field of STE(A)M report learning-through-art cases in which an art form is applied in an instrumental manner in nonartistic contexts only as a pedagogical tool for illustrating and explaining scientific phenomena (e.g., Turkka et al., 2017; Leysath & Bronowski, 2016; Bautista et al., 2015; Tani et al., 2013); these studies focus on the pedagogical implementation of art forms as a supportive tool, overshadowed by other content areas (Bresler, 1995, p. 33; May & Robinson, 2016, p. 25), leaving the aesthetic experience of creating and perceiving art in the background. This, in my view, simplistic manner of art integration, termed by Bresler (1995) as *subservient* integration teaching style, allows 'teachers to teach the academic contents with the inclusion of modes other than the verbal and numerical' (Bresler, 1995, p. 34).

In addition, Bresler (1995) identifies: the *co-equal*, the *affective* and the *social* integrative teaching styles. The *co-equal* (Bresler, 1995, p. 34) cognitive integration style requires a high degree of artistic professionalism on the part of the teacher since it pays attention to art-specific contents, skills, expressions and modes of thinking while emphasising the aesthetic qualities of the artwork. Often, to achieve co-equal integrative teaching, collaboration between the subject teacher and an art professional (Nevanen, Juvonen, & Ruismäki, 2012) is necessary so as to ensure high-quality learning experience. In the *affective* integrative style, 'mood' and 'creativity' (Bresler, 1995, p. 34), which shape the

children's emotional experiences, are the driving forces that lead the teaching process, and therefore this style is often perceived as complementary to curriculum integration. However, it should be pointed out that a focus on the emotional perspective of teaching art can trigger questions that are not based on separate subjects or disciplines but arise from the students' own experiences and active collaboration (Tani et al., 2013, p. 173), and from the process of artistic creation itself, which in turn can facilitate application of the higher-level – *transdisciplinary* – approach to integration as defined above. The *social* arts educational integration style defined by Bresler (1995) is also perceived as 'supportive' because it serves the school community in preparing artworks and performances for school events and celebrations, promoting publicity of art and art appreciation (Bresler, 1995, p. 35).

One way of stepping away from a mechanical application of the subservient approach as the 'easiest' pedagogical tool for art integration (May & Robinson, 2016) is to develop integrative teaching projects that highlight the intrinsic value of the arts (Chemi, 2014, p. 375). Such integrative teaching, in my view, calls for a focus on the *affective* side of the process of art creation and the aesthetic qualities possessed by the artistic product.

In her discussion on art integration, Chemi (2014) defines two pedagogical teaching models of arts integration: one that elevates the intrinsic values of art, which in Bresler's terms (1995) corresponds to the *affective/co-equal* approach, and one that 'advocates instrumental application of the Arts in other contexts' (Chemi, 2014, p.375), i.e. the *subservient* approach (Bresler, 1995). To reconcile these two polarised models of arts integration, a balance between process-oriented and product-oriented instruction should be sought (Björklund & Ahlskog-Björkman, 2017, p. 99). Such a balance can be struck through designing teaching projects in an *artful* (Chemi, 2014) manner or by integrating students' self-expression with 'knowledge about, understanding of, and appreciation for artworks formal qualities and the artistic generative processes' (Chemi, 2014, p. 381). Embracing an 'artful mindset' (Chemi, 2014, p. 381) makes it possible to design high-quality *co-equal* integrative teaching modules (Hallmark, 2012) which would enrich the educational role of the arts and would allow *detours* and *experimentation* (Chemi, 2014, p.381) in the art creation journey.

Aspects of all integrative teaching styles, set forth by Bresler (1995) and Chemi (2014), are observed in the project implementation described in this article and are presented in the empirical section through practical examples of their application.

Beneficial for the students' holistic development as all the curriculum integration models discussed above may be, they are often difficult to apply in real-life situations. In most cases, researchers (Nevanen et al., 2012; Hallmark, 2012; May & Robinson, 2016) report the following main obstacles that hinder full and fruitful art integration within the school curriculum: lack of qualification and confidence to integrate art on the part of subject teachers, lack of time for collaborative planning and team-teaching, subject-bound curriculum constraints, inability to teach art for its own sake, lack of support from teachers and administration as well as insufficient resources for multiprofessional collaboration between outside artists and teachers. For these reasons, the interaction between the arts and the core subjects is often superficial, and the arts are *subservient* to the other subjects, which devalues the arts' integrity and validity within the integrated lessons (May & Robinson, 2016, p. 21).

Previous research on multiprofessional collaboration, where an artist joins forces with a class/subject teacher to improve knowledge integration, reports positive integrative outcomes from the teaching process (Ruokonen, Salomäki, & Ruismäki, 2014; Hallmark, 2012; Nevanen et al., 2012; Wichers & Poncelet, 2011). It also confirms that successful multiprofessional cooperation should be *co-equal*, long-

lasting, grounded in equality between the working professionals, and well-organised both in terms of teaching practices and in terms of administration (Nevanen et al., 2012; Hallmark, 2012, p. 18).

In an earlier article (Blagoeva, in press) dealing with the processes of developing the conceptual framework of the current project, a case was presented in which the roles of the artist, the teacher and the researcher overlap (Blagoeva, in press). This multiprofessional expertise was used when designing the classroom activities in a way that 'simulated real artistic processes' (Blagoeva, in press), and as a result, 'artful' teaching (Chemi, 2014) was realised. Moreover, the informal after-school setting of the previous and the current action research cycles eliminated some of the 'obstacles' mentioned above and allowed artistic freedom and flexibility both in terms of teaching material and in terms of administrative organisation of the activities.

Bearing in mind the results and conclusions made after the artistic action research project conceptualisation (Blagoeva, in press), the present paper unfolds the processes of materialisation of the conceptual framework into a performance by viewing them as a multiprofessional collaborative effort and analysing them through the lens of the theoretical terms defined above. To answer the research questions set below the analysis focuses on integrative teaching moments which demonstrate *subservient, co-equal*, *affective* and *social* integrative teaching styles and maps them with the integrative potential of contemporary art expression within the after-school educational setting.

Research questions

The article addresses the following two research questions:

- How does the integrative nature of contemporary art forms encourage integrative teaching through multiprofessional collaboration within the after-school environment?
- How are the *subservient*, *co-equal*, *affective* and *social* integrative teaching styles realised through multiprofessional collaboration?

Methods

Two types of methods were employed in this study in order to fulfil its aims and to provide answers to the research questions:

- *Project implementation method*

The planning, implementation and analysis of the results of the integrated project, described below, called for *action research* (Cohen, Manion, & Morrison, 2005; MacNaughton & Hughes, 2009) as a most suitable in-class research method. Its simple cyclical structure, divided into four clear steps – plan, act, observe, reflect (Figure 1) – provided the artist-teacher-researcher with relevant tools to actively participate in the classroom processes at all steps of their development, while at the same time made the pedagogical practices open for self-reflection and visible for interpretation. This method has proven most suitable in my research practice as it allowed me to apply my artist expertise to the teaching process, to reflect upon it and to draw meaningful conclusions from the achieved results (Blagoeva, Karppinen, & Kairavuori, 2018).

Figure 1: The action research cycle steps for the Four Elements after-school spring show (2017):
materialising the Thunder Cloud performance-installation (Teacher Diary Notes)

● *Data and data collection methods*

As the teacher-researcher is an active participant observer (Mills, 2007, p. 58) in this action research cycle, pedagogical documentation (Carr & Lee, 2012; Dahlberg, Moss, & Pence, 2007) of structured classroom observation (Silverman, 2000, p. 3) was applied for the collection of the *written* and the *visual* data from the project implementation.

The written data was obtained during the first two steps of the action research cycle (PLAN and ACT) (Figure 1). It consists of loose-leaf teacher notes with sketches from the planning stage and loose-leaf handwritten teacher diary field notes from the process of implementation. This meticulously prepared written record of the process provides the teacher-researcher with enough data to 'revisit analyze and evaluate' the teaching experience over time (Cochran-Smith & Lytle, 1993, as cited in Mills, 2007, p. 70), 'opens' the data for reflection (Rintakorpi, Lipponen, & Reunamo, 2014, p. 188), and ensures transparency of the pedagogical practice. All written notes and sketches on paper were digitised (scanned or photographed) as early as the initial stage of collecting and managing the data; they were grouped into folders according to the action research stage they referred to, and were assigned a unique number/name for further reference. This was the first stage of coding the written data.

During the reflection stage of the action research, refined coding of the written data was performed to map data samples onto the research questions and respectively onto the theoretical notions applied in the analysis of the results. So in this secondary process of coding, the empirical data material fell into various categories: some named after Bresler's (1995) styles of integration discussed above ('*subservient*', '*affective*', '*co-equal*' and '*social*'); others denoting specific instances where 'multiprofessional collaboration' or 'knowledge integration' was planned and the way it materialised; and yet another category that documented what Mills (2007) calls *paradoxes*, or 'unintended consequences of a particular teaching strategy' (Mills, 2007, p. 61) that become evident later. These paradoxes were spotted in the process of work, and their influence on the final result was compared with the initial teacher planning data notes so as to arrive at further conclusions about the ongoing artistic/teaching process.

The visual data, used to support and illustrate the research stages, falls into two main categories – static (photos) and kinetic (videos). This predetermines its further categorising. In order to ensure consistency in the data analysis process and to be able to triangulate written and visual data sources that capture the same phenomenon, the visual data is treated in the same way as the written data.

All photographic material was obtained through photo documentation (Rose, 2007, p. 243), and for this part of the project it consists of process photos of the artistic work in the classroom and photos of the final result. All photos were coded by assigning 'descriptive labels' (Rose, 2007, p. 64) and unique numbers to each before placing them into separate folders according to their relation to the first two action research steps which encompass the teaching modules included in this project. Then, the photographic data was re-coded to match the written data categories. Such multi-level coding of the visual data ensures that each image can easily be identified for research purposes (Rose, 2007, p. 65).

There are a finite number of photographs taken by the teacher during the project, 352 in total, which are first coded into the following four categories according to the process of artistic/pedagogical work they refer to:

- digital photos from the process of work in the classroom (157 photos in total);
- digital photos of the final installation (6 photos in total);
- digital photos from the rehearsals (120 photos in total);
- digital photos from the final performance (69 photos in total).

At the reflection stage of the research, the visual data was re-coded into the same categories as the written data. The aim was to find visual examples that match with written instances capturing the same teaching moments, so as to provide data-grounded theoretically informed answers to the specific research questions.

The video data consists of 38 video recordings of various lengths: 16 short videos of the process of work, seven videos of the rehearsals and five short videos and one approximately 10-minute-long video of the final artwork, performed as part of the after-school show. All videos were filmed either by the researcher or by the researcher's colleagues. In the analysis of the results, the video data is used as a source of analytical material that not only supports the written and photographic material in providing answers to the issues in question, but also documents authentic processes in action (sounds and movement) that would otherwise remain uncaptured.

The varied nature of the collected data as well as the active collaborative work with the other after-school activity leaders during this project implementation, their direct interventions into the art creative process and their contribution to the visual data collection during this research cycle, ensured that

different aspects of the creative process were captured for analysis. This gave the researcher enough resources to apply data triangulation (Guion, Diehl, & McDonald, 2002, 2011; Oliver-Hoyo & Allen, 2006) to the qualitative content analysis (Silverman, 2000) of the results so as to 'produce a more accurate, comprehensive and objective representation of the object of study' (Silverman, 2014, p. 91). The following principles of validating qualitative data analysis, defined by Silverman (2014, p. 95), namely 'comprehensive data treatment', 'constant comparative method' between data sources and acknowledging 'deviant cases' (or what Mills [2007] calls *paradoxes*) found in the data, governed the pre-analysis and analysis of the data with the aim of enhancing the validity of the current study.

Project implementation and results

The description of the teaching modules and the performance rehearsals included in this project as well as the analysis of the observed results are presented in the framework (Bryman & Burgess, 1994) of a single action research cycle (see Figure 1) with the following steps: (1) plan, (2) act, (3) observe and (4) reflect (analyse). In order to provide answers to the research questions, this section of the paper views the educational practice in relation to the relevant theoretical background set at the beginning.

PLAN ⇨

The after-school project, which is the subject of this study, is called *Thunder Cloud*. Its topic is in line with the school's so-called 'Year Theme' – a general topic proposed by the school's authorities (the board of class teachers and principals) to be discussed in every school subject during the academic year. The 'Year Theme' is defined on the basis of its potential to encourage interdisciplinary connections. In this case, the common theme was *Art and Science*.

During a collaborative brainstorming session involving all after-school activity leaders, it was pointed out that uniting the after-school show's General Topic with the school's 'Year Theme' gives opportunities for knowledge and skills transferability and in this way encourages the pedagogical utilisation of integrative practices while at the same time allowing all after-school clubs to contribute to the show's production. After taking into consideration the teaching topics covered on a primary level, and based on previous after-school teaching and learning experience (Blagoeva et al., 2018; Blagoeva, 2018), it was decided that a suitable common theme for the new after-school spring show would be *The Four Elements*. The words denoting the four elements (*fire*, *air*, *earth*, *water*) were used as a starting point in the art teacher's planning process and later for the development of the separate performances. I will not dwell upon the process of artistic conceptualisation of this project through artistic action research (i.e., the individual *Art teacher planning*) as it was described and analysed in depth elsewhere (Blagoeva, in press). However, I would like to note that the result of the art teacher's planning and concept-development was an implementation of artistic action research into the classroom, i.e. the student planning activities mirrored the actual artistic process of the artist-teacher and in this way supported the 'students in utilizing these practices' (Gude, 2013, p. 14) in order to experience, investigate and arrive at conclusions that made them grasp the connection between the verbal expression of the four elements and the performance/installation they had to create (Blagoeva, in press).

Recorded in the written teacher diary planning and field notes as well as in the sketches, the initial teacher discussions, planning and negotiation for the Spring show's organisation laid the foundations for *co-equal* (Bresler, 1995) multiprofessional collaboration as early as the planning stage of the project.

Thus, the colleague teaching Textile Art and Crafts, inspired by the after-school team discussion and the conceptual installation idea for the *Thunder Cloud*, designed by me, suggested that our clubs

collaborate on the level of ideas. Through mutual teacher discussion of the technical possibilities for such cross-club interaction, it was decided that the textile art and crafts club participants would contribute to the creation of a soundscape around the cloud installation by crafting sticks that could produce the sound of rain when shaken. This discussion on the possibility for collaboration dramatically altered the outcome of the visual art product since it inspired and facilitated the transformation of the *Thunder Cloud* light-installation into a sound-and-light *installation*, which, in the process of work and further collaborations, materialised through different artistic forms and media of expression (dance, drama, visual art, music) into a sound-and-light *performance*.

Due to the complexity and the interactive nature of the artwork, the Sculpture and Installations club (of which I am the main leader) was supported by the Textile Art and Crafts club (led by a colleague and actively assisted by me), and later by the Dance and the Drama clubs, in order to turn the static visual art artifacts into a unified performance piece.

Following previous good organisational practices (Blagoeva et al., 2018; Blagoeva, 2018), all after-school clubs first worked independently, and a week prior to the show, they rehearsed together in order to produce the final performance piece. The *Act and Observe* section of this paper follows closely these artistic, educational and collaborative processes that led to the successful implementation of the project.

ACT and OBSERVE ⇨

• Student planning

Prior to the beginning of the actual materialisation of the installation's components, each group of primary six-to-eight-year-old after-school students who attended the visual arts clubs had two artistic action research-based teaching modules devoted to brainstorming, discussing, planning and crafting the installation on a small scale (Blagoeva, in press). The provided time for planning helped the students to familiarise themselves with the topic of the show, and by applying knowledge and skills, acquired from curriculum school subjects such as Nature and the Environment, Science, Mathematics, etc. to understand and internalise the conceptual basis of the *Four Elements* installation.

It is important to note that most of the students who participated in the Visual Arts club discussion were also the ones attending the Textile Art and Crafts club, so the discussion in this club was shorter and based on the conclusions and conceptual connections established during the visual arts planning-introduction lesson (Blagoeva, in press). However, because the focus of discussion in the Visual Arts club fell on the visual properties of the artwork, the Textile Art and Crafts discussion was based on the auditory perceptions surrounding a thunder cloud. Notions such as *rhythm, loudness, sound quality, melody,* familiar to the students from their music classes, emerged during this discussion and were linked to the scientific explanation of the natural causes of the sound of thunder (Teacher Diary Notes). This way, the students were able to integrate their previous theoretical knowledge of the natural phenomenon, and by viewing it from different perspectives to establish logical links that exist naturally between the different spheres of science and art. In this case, application of the *subservient* style of integration was observed in relation to the other school subjects, i.e. the student's previous theoretical knowledge was used as a tool for understanding the artwork's conceptual meaning rather than, according to Bresler's (1995) definition, for explaining scientific phenomena through art.

As a result, working on the same art piece in two different visual art and crafts after-school clubs allowed integration of different knowledge entities and skills that contributed to the synesthetic value of

the art piece and to enriching the students' capacity to establish logical connections between different phenomena and spheres of knowledge (Teacher Diary Notes).

- **Creating the separate elements of the installation**

The planning stage of the performance-installation in the classroom was followed by an intensive four-week individual club work to create the pieces of the installation.

The students from the two visual arts club groups (18 students in total) were to create two fluffy rain clouds by gluing balls of cotton on both sides of two open umbrellas and attaching battery-powered led-light strings on the inner part of the finished cloud, symbolizing both rain and lightning. Figure 2 shows this team work process in action. As seen in the photographic data, documenting this classroom process, the complexity of the artwork required constant collaboration within the group. The students experienced the materials used for creating the installation and discovered their physical qualities, mapped them onto their semiotic meaning within the artwork's conceptual framework and became aware of their influence on the aesthetic qualities of the artwork (Blagoeva, in press; Teacher Diary Notes). As the emphasis of this teacher–student group work fell on art-specific contents, skills and modes of expression, as well as on the aesthetic influence of the chosen material (Teacher Diary Notes), both *co-equal* and *affective* integration was observed during this collaborative artwork creation.

Figure 2. Making the clouds in the art classroom
(Digital photos from the process of work)

After the cloud installation was completed, the students experimented with the finished artwork and gave their first improvised classroom performance. The cover photo of this article is a video frame from this first rehearsal. During this activity, *affective* integration was observed in the students' spontaneous reactions (Teacher Diary Notes) on the aesthetic qualities of the finished artwork. Their enthusiasm about its presentation as part of the after-school spring show programme and its possible reception by the audience reflected the *social* integration in the classroom.

The aim of the Textile Art and Crafts club was to produce rain sticks by reusing hard cardboard tubes filled with various seeds and legumes (peas, beans, lentils, rice, etc.) and decorated with colouful fabrics. The figures below visualise the stages of creating the rain sticks. Figure 3 captures a moment of collaborative *co-equal* work where the students with the teacher's help and guidance apply and extend their skills in crafts by sawing the cardboard tubes into different lengths while discussing the effects of the tube length in relation to the sound quality it will produce (Teacher Diary Notes).

Figure 3. Sawing the cardboard tubes with the help of the textile craft teacher
(Digital photo from the process of work)

The following activities, captured on Figure 4 and Figure 5 below, continue the collaborative *co-equal* knowledge and skill integration initiated in this teaching module.

Figure 4 illustrates the use of hammers to add nails to the inside of the cardboard tubes which would slow the flow of the seeds up and down the tube, thus producing the rain sound effect.

Figure 4. Adding nails to the tubes (Digital photo from the process of work)

On Figure 5 the students explore the change of the sound value produced by the sticks in relation to the nature or amount of the filling and the length and thickness of the tubes as well as to the density of the nails they attached. In this way the students had a chance to utilise and extend their knowledge acquired in their regular music classes. They experimented with sound and rhythm, and by comparing their individual results, they made corrections to the structure of their musical instruments in the process of work. They became aware of the quality of sound and the object that produces it, which proves the true integrative nature of the activity.

Figure 5. First sound tests of the rain sticks (Digital photo from the process of work)

Affective integration, focusing on each student's individual creativity, was observed during the completion of the rain sticks when the finished instruments were decorated. Each student had a chance to personalise their artwork by choosing colourful strips of fabric (Figure 6) to apply to the surface of the rain stick as a collage so as to enhance the aesthetic value of the instrument.

Figure 6. Decorating the rain sticks (Digital photo from the process of work)

Figure 7 presents a frame taken from the video data where the students *play* the rain sticks for the first time together after finishing them. Guided by the after school art and crafts teachers, they move the sticks sideways with different intensities in order to hear the rain sound effect in its totality (Teacher Diary Notes). The video data from this activity shows how the students' intuitive sense of *rhythm* as well as skills acquired in music classes are integrated with the students' emotional response to the sound when playing the instruments as part of an improvised orchestra. 'Mood' and 'creativity' guided this collaborative sound experimentation moment, thus strengthening the *affective* qualities of the art piece.

Figure 7. Playing the rain sticks for the first time together in the classroom
(A frame from the video data)

- **Rehearsals: Putting the performance together**

Although the art pieces produced by the two creative clubs were self-sufficient, i.e. could be displayed on their own, putting them together into a common performance made it possible to complete the synesthetic effect of the installation through a full materialisation of the concept set at the beginning of the project.

After presenting the finished artifacts to the show's production team, a decision was made that the *Thunder Cloud* performance-installation was to be performed by the contributing little artists as a 1-minute transitional part within the main storyline of the show. Because of the large number of participants in the performance-installation (31 students from both the Visual Arts and the Textile Crafts clubs), the students' roles and involvement in the performance were defined in advance. Then three separate rehearsals were held at the venue – the school's assembly hall – in the days prior to the show.

These rehearsals included designing simple choreography of the movements of the two main performers through the space (Figure 8 and Figure 9). This movement-through-space minimal choreography required *co-equal* (Bresler, 1995) collaboration with the Dance and Drama club leaders, who gave advice to the performers and directed them in space. Working in *co-equal* collaboration with professionals from the field of performative arts was an invaluable experience when deciding the spatial

relation between the performers and the rain stick players and when guiding the students in their movements. Rehearsing this in advance ensured the smooth flow of the performance.

Figure 8. Rehearsal process 1
collaborative work on choreography and sound
(A frame from the video data)

Figure 9. Rehearsal process 2:
collaborative work on the choreography incorporating the
performance into the show
(Digital photo from the rehearsals)

Co-equal (Bresler, 1995) collaboration was established with the music teacher as well. Taking into account the auditory nature of this piece and the students' newly acquired practice-based knowledge of the structure of the instrument, through their active participation in its creation, the music teacher conducted the intensity the students had to shake the rain sticks with so that they could produce the rain-sound effect as closely as possible to the natural rain sound and at the same time to be loud enough to fill the whole assembly hall. To increase the aesthetic effect of the piece, the lights were dimmed during the performance, and an additional thunder sound recording was played in the background (Video Data).

The final result of the project was a sound-and-light performance (Figure 10), closely interwoven with the after-school show, yet detached from it as far as its genre was concerned because it could be categorised as neither dance, nor a theatre piece, nor music alone (Teacher Diary Notes).

Figure 10. The final performance (A frame from the video data)

REFLECT ⇨

In a previous paper (Blagoeva, 2018), I suggest that the pedagogical utilisation of contemporary art forms and materials, which are essentially integrative, triggers collaboration, art appreciation and knowledge integration. By being purely conceptual in nature, contemporary in terms of artistic expression, integrative in incorporating elements from different school subjects and requiring multiprofessional artistic collaborations, the realisation of this project confirms my previous findings, and in this way provides an answer to the first research question. It affirms that contemporary art is a powerful tool for cross-disciplinary networking (Bautista et al., 2015), as well as for integrative knowledge construction.

The process of conceptualising and creating such a complex synesthetic artwork required integration of visual arts and crafts, science, performance art and music, revealing connections between the artistic idea, the image and its material presence. Since scientific knowledge gained from curriculum school subjects served only as a starting point for inspiration and artistic conceptualisation, the expression through arts and the integration of art fields took precedence, so the *subservient* style of teaching (Bresler, 1995) was applied minimally in this project. In fact it was used the other way round – not as an illustrative tool for demonstrating scientific phenomena, but rather as a way of showing how this scientific knowledge can be transformed into artistic expression, as seen from the presentation and analysis of the data from the planning stage of the project discussed earlier in this paper. So unlike the *subservient* integration described above (Bresler, 1995; May & Robinson, 2016), here *art* overshadowed *science*, and scientific knowledge was used as a supportive background in conceptualising the project.

The synesthetic qualities of the *Thunder Cloud* light-and-sound performance-installation, as well as the focus on the artistic expression of the concept during the process of teacher guidance, allowed the teacher to emphasise the *affective* (Bresler, 1995) side of art creation. As observed in the data from the project implementation stage, discussed above, the collaborative creative process, mediated by the teacher, engaged the students in paying attention not only to the static art object as such, but to issues related to space, movement, sound and silence, which all contributed to the unified aesthetic and emotional influence of the performance on the performers and on the audience.

Planned with 'artfulness' (Chemi, 2014) in mind, the process of the project implementation put the students in authentic creative situations which encouraged knowledge and skill integration at all stages of the art piece planning and materialisation. They gained a deep understanding and appreciation of the formal qualities of the artwork while experiencing in practice the art creation as an ongoing integrative process which is not bound only to the (teacher's or students') planning stage. For example, even though throughout the planning and the whole project implementation stage the concept for the installation remained the same (the thunder cloud as a symbol unifying the four elements), the initial plan to create a separate light-and-sound installation and to use it only as an immobile stage décor went through several transformations, triggered by active cross-disciplinary collaborations. Without losing its connection to the original concept, in the process of artistic work and collaborative discussions with the students and the other after-school leaders, the installation turned into a non-illustrative, unconventional performance piece with no plot, no text, no specific choreography, yet it was a balanced, well-organised presentation of the concept in space and time; a momentary semi-improvisation that involved an ultimate sensory, auditory and kinetic synthesis, providing a complete synesthetic experience for the viewer. Thus, the flexibility of the artistic/*artful* approach allowed deviations from the plan, presenting themselves as *paradoxes* (Mills, 2007) in the data, and let the creative process influence the expected product (Björklund & Ahlskog-Björkman, 2017), making it possible to modify the art piece at all stages of the

art creation. So this approach proved a fruitful tool for achieving a highest level of *transdisciplinary* integration since the participants involved in the teaching-learning process were given freedom to make *detours,* to experiment (Chemi, 2014; Hallmark, 2012) and, respectively, to influence the idea-generation and the art-creation outcome.

The complexity of the final artwork (that is not the individual artifacts produced by each club but the installation-performance presented as a whole) and the multidisciplinary expertise required for its production, called for collaboration between the different professionals who worked as after-school leaders of their respective clubs. Such a collaboration happened as early as the teacher planning stage of the project and continued during the production process of the elements comprising the *Thunder Cloud* sound-and-light contemporary performance piece: while the Sculpture and Installations club (led by me) made two *Thunder Cloud* umbrella installations, the Textile Art and Crafts club simultaneously crafted the rain sticks to accompany the installation presentation. Working in a *co-equal* collaboration with the Textile Art and Crafts club made it possible for me to participate simultaneously in the creative processes in each club and together with the other colleague to guide the students into establishing conceptual connections between the installation elements by focusing on the art-specific contents, skills and expressions and by affirming the aesthetic qualities of the artwork (Bresler, 1995; Chemi, 2014). The process of putting the performance together within the whole after-school show called for additional collaborations between the art teacher (me) and the Music club teacher who gave advice for the acoustics of the rain sticks and the technique that the rain stick players had to use so as to produce a clear and uninterrupted sound of rain, audible enough across the performance space (Figure 8 and Figure 9). *Co-equal* collaborations were established with the dance teacher and the drama teacher, who navigated the movement of all performers in space and planned the logical incorporation of the performance-installation within the show as a whole (Figure 8, Figure 9 and Figure 10).

As the *Thunder Cloud* light-and-sound performance-installation was specially designed to be part of the after-school spring show and the students were well aware of that, the *social* purpose of art integration, which Bresler (1995) views as a supportive style of integration, was in fact leading the creative process. For many students who chose to attend only the visual arts club but felt left out from the spotlight, this project was a way to understand that making the props and decorations is also an important form of participation. Moreover, the educational and artistic design of the project and the way it developed to incorporate visual arts installation-performance into the show gave all students the chance to participate on stage and get full credit for their work as visual artists. In the end, performing the artwork served both *affective* and *social* purposes because it provided the students with a sense of fulfilment, and by getting audience attention, made them value their creative work while at the same time the audience and the school community valued them as artists.

The implementation of the *Thunder Cloud* light-and-sound performance-installation demonstrated how the four integrative teaching styles, defined by Bresler (1995) were simultaneously realised in the after-school multiprofessional collaborative teaching-learning process and in this way answered the second research question.

Conclusions

The materialisation of a multilayered, conceptual project such as the *Thunder Cloud*, which required professional guidance from different visual and performative art and craft fields, encouraged *co-equal* multiprofessional (Bresler, 1995) teaching collaboration between the team leaders and also strengthened the integrative links between the different artistic fields that each after-school club represented. Smooth

introduction of such complex multiprofessional collaboration was only possible because the informal and flexible after-school teaching-learning environment, free from curriculum constraints and expectations, supports process-focused phenomenon learning and allows for *detours* (Chemi, 2014) and experimentation in designing the teaching content, in conceptualising the teaching-learning interaction and in introducing project-based teaching modules that come as close as possible to real-life interdisciplinary aesthetic practices (Gude, 2013). This project demonstrated how artistic multiprofessional collaboration, triggered by the contemporary art expression, extends the learning opportunities by giving the students a new perspective to view familiar phenomena through the eyes of an artist (or the many artists involved in guiding the students through the project) and to experience an authentic creative process by allowing artistic knowledge and skill transferability that went way beyond the discipline-based school curriculum.

The results and conclusions drawn from this action research can serve as a good starting point for designing and introducing collaborative integrated teaching modules not only on an after-school primary level, but also on higher educational levels. The study presented here can be used as an example for further development and implementation of *artful* (Chemi, 2014) *co-equal* curricular designs (Hallmark, 2012) which assimilate integrative learning into the artistic process and vice versa, thus unfolding the possibilities for learning in collaboration through artistic expression and multidisciplinary discovery.

Author presentation

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