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READMUSIC: a new methodology to introduce musical language in preschool education

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Abstract

This paper shows a preliminary evaluation of the successfully experimental implementation of an innovative pedagogical method to introduce the learning of musical language in the general education system at an early age: between 3 and 5 years of age (Preschool Education) in several Spanish schools. This method is linked to the child's general evolutionary process of learning to read and write, in which the associations of sounds and written symbols are established, also encouraging the early use of ICT (Information and Communications Technologies) through a computer programme specially designed for this learning method.

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1. Introduction

In general, until now, learning the language of music as such (and not as an isolated element) has begun at the age of 6 or 8, in primary school. This late start has some serious consequences that can be seen, mainly, in the perception that learning music is difficult, a lack of coordination between the visual element and the production of the sound, a lack of rhythmic coordination, and above all, a final and highly negative consequence: as the learning process has been badly done, priority is given to other types of musical learning, especially those based on imitation and repetition by ear.

In the 3 to 5-year-old range, the work concentrates on musical perception, the reaction to aural stimuli, the psychomotor coordination associated with music, the understanding of some parameters such as intensity and speed of sounds, and in some cases, the introduction to music as a cultural fact that surrounds us in our everyday lives (lullabies, children's songs, games, psychomotor performance). However, it is at this stage of a child's education that the brain develops its abilities which lead to the process of reading and writing: the association of sounds with written symbols and later the ability to join them together into meaningful entities.

It is this linguistic development which we believe has to be associated with musical language. The development of hearing and speaking are considered to be fundamental elements in both the linguistic and musical fields, and both can contribute to this development in a complementary way. It is the adequate moment to carry out a single sound/symbol process, which in the case of music, is performed by means of specific universally accepted signs.

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All these ideas have given rise to a new pedagogical methodology, *READMUSIC*, to introduce the learning of musical language into the general education system at preschool level (see Sec. 2). The method aims to use several elements of the child's sensorial development, especially his/her auditory discrimination and a colour association system to discriminate between different notes.

On the other hand, it should not be forgotten that all this is taking place in a society in which the use of Information and Communications Technologies (ICTs) has become commonplace in any field of activity. Therefore, education must take this reality into account and take advantage of all the possibilities it offers. In addition, it is a very attractive tool for children and thus allows the introduction of multimedia into the classroom.

Although the use of ICTs at an early age has not been free of debate concerning its appropriateness (Alsina et al., 2008; Van Scoter et al., 2001), the current educational systems and the experience of several years' application has made the use of such tools fundamental to the learning process in a highly technological environment (Giraldez, 2007). The debate is currently not so much about whether ICTs should be used, but about how they should be used (Hartle, 2006; Stephen & Plowman, 2003). *READMUSIC* encourages the early use of ICT through a computer program specially designed for this learning method (see Sec. 3).

The proposed methodology has been successfully introduced over the last few years in some Spanish schools and has been supported by several projects of Spanish public institutions. In this paper, the main practical considerations of this implementation will be shown (see Sec. 4), as well as a preliminary evaluation of this practical application (see Sec. 5). This evaluation has been carried out by means of surveys and teachers' and researchers' observations, with very positive results from children, teachers and parents. It has also brought, from the practical educational point of view, new ideas to the activities program to improve the methodology.

2. *READMUSIC*

A more in depth description of this new pedagogical method can be seen in (Castanon & Vivaracho, 2009).

Between the ages of 3 and 5, children in school develop the ability to draw, recognise and phonetically perform the signs corresponding to the sounds of their language (Riaño & Díaz, 2010). If, at the same time, the signs of the musical language are introduced, this process is reinforced with a greater quantity of different signs. This does not imply that the difficulty will be greater, but that the single process will be carried out with different signs, both groups of signs collaborating in the linguistic development: reading from left to right, sign/sound association, rhythm and timing, etc.

It should be pointed out that this methodology is meant for non-specialised infant school teachers, who are the ones that have an emotional link with the children, and that it is used during normal school hours.

2.1. *Time scale of the contents*

One very important facet of learning at such early ages is the time scale of the contents, which is divided into three blocks, according to the age of the children. The teacher controls the individual progress of each pupil and can slow down or speed up both group and individual progress with respect to achieving significant learning milestones, (as is done in the linguistic process of learning to read and write). The teacher must work on the contents of the musical language associated with the particular level he/she is responsible for in very short but frequent sessions. These sessions will gradually get longer until they form meaningful units.

Level I: 3 years of age

The introduction of the musical signs is carried out using posters and cards. The practice of rhythm is carried out separately from the melodic practice, which is begun using two notes: E/G (or MI/SOL) and their corresponding colours (yellow and blue). The sheet music is coloured and played on educational instruments, sung or through the use of the ICT application. A third note, C (or DO), coloured red, is introduced later. Colour discrimination is carried out at both a manual level (to encourage the hand-eye coordination of the writing process) and using ICTs. The three sounds can be played simultaneously, giving rise to the chord of C (Do) major.

Level II: 4 years of age

Both rhythmic and melodic interpretation are united vocally and instrumentally in the same session. These processes can be carried out throughout the day in several short sessions, but the final goal is to learn by guided discovery what the final performance of the musical text will sound like. New rhythmic difficulties are: to consolidate previously learnt knowledge and to introduce 3/4 time and the concept of half rest and dotted half note. New melodic difficulties are: to consolidate previously learnt knowledge and to introduce the D (RE) and F (FA) (orange/green) notes. The melodic possibilities of the pentachord allow the basic melodic structures of western music to be developed. The musical grouping is introduced, with two simultaneous levels to be played:

- One rhythmic line to be played by small untuned percussion instruments consisting of an ostinato of two measures that repeat.
- One melodic line (the tune) to be discovered (interpreted) by means of bar instruments (xylophones or metallophones), singing or the ICT application.

Level III: 5 years of age

Longer sessions are carried out so the tasks are brought together in a single sequence: rhythmic syllable - colouring-singing/playing. New rhythmic difficulties are: to consolidate previously learnt knowledge and to introduce 4/4 time, the whole note and the whole rest. New melodic difficulties are: to consolidate previously learnt knowledge and to introduce the notes A (or LA) (indigo), B (or SI) (violet) and C5 (or high DO) (red). This completes the melodic sense of the diatonic scale, which is the basis of the western system. A basic harmonic level is introduced in the concept of grouping: the tonic base chord (Do-mi-sol) at time tempo. Thus, the basic concept of orchestral music is present in the three conceptual lines: Base harmonics, rhythmic ostinato and melody.

Figure 1 shows some of the classroom materials generated.



Figure 1. Classroom material. Left: example of coloured do-mi-sol notes. Middle: example of rhythmic exercise. Right: example of a child's interpretation of Mozart's *The Magic Flute* opera.

3. The Computer Application

Given the age of its users, the computer application is easy to use (the interface is adapted to the young children) and attractive to children; that is, it is fun to use. As a support tool, it is aimed at improving the child's work in the classroom, more specifically, that concerned with learning melodic language (Sec. 2). The software allows music score files to be edited, saved and opened in MIDI format (Fig. 2, left). It also allows the child to colour the music notes, indicating a correct colouring by a positive sounding voice message, as well as its reproduction with the desired instrument (Fig. 2, right). See (Castanon & Vivaracho, 2010) for a more in depth description.

The tool is currently in the development and evaluation stage, and will be freely available when this stage is completed and the necessary modifications have been carried out.

4. READMUSIC Implementation

This new methodological proposal has been undergoing practical development in rural and city Infant and Primary Schools in Castile and Leon, Spain since 2006, when it was implanted in two schools. The number of schools is currently 4, taking into account new applications for the academic year 2011/12.



Figure 2. Computer application main windows: editing (left) and activities (right)

The implantation of READMUSIC has so far been limited, as this phase is vital for knowing how the methodology and the especially created computer tool work. The opinion of all participants, and those belonging to the education system, is that it is the best way to understand and adapt our work to real educational needs, collectively proposing new solutions to improve and adapt the methodology to each case.

Collaboration between the teams is fundamental to obtaining an adequate coordination in the programming of the educational content. The introduction of such an innovative programme as READMUSIC needs a commitment on the part of all the people involved in the school: the Parents' Associations, infant teachers (including cooperation between these teachers and the specialist music teacher), the availability of adequate materials and spaces (the creation of music corners, unturned percussion instruments, metallophones, digital classrooms with the specific ITC support programme for this methodology installed, etc.).

In order for the project to be applied, the collaboration of all the teachers of Infant Education in the school is necessary, if differences between the various groups of pupils are to be avoided. This commitment is necessary in order to guarantee a homogeneous level upon access to higher levels of education, where (in Spain) music is taught by a specialist teacher. These teachers also sometimes give short classes in Infants, but their function is mainly of a cultural type, developing pupils' creativity and awareness of music or training their aural perception.

The various groups of teachers are organised through a coordinator who is also a member of the teaching group. This figure establishes the necessary links and contacts with the expert in READMUSIC to facilitate material, arrange training sessions in the school, detect difficulties and doubts about putting the project into practice among his/her colleagues, coordinate the activities and gather the necessary information to evaluate the progress of the project. Certain flexibility is desirable for the process to be carried out correctly: there is a minimum number of training sessions per term, but intermediate sessions can be set up if needed.

5. Implementation Analysis and Evaluation

The proposed new methodology has undergone a preliminary evaluation using such tools as observation and interviews with the organising teams, the group coordinators and the Infant teachers who have set up the project. From the information and material obtained, the following positive aspects can be stressed:

- A notable degree of satisfaction on the part of the teams and group coordinators in the system's application.
- Good results have been found concerning the easy, gradual and enjoyable acquisition of knowledge of musical language, whilst developing and improving other capacities in the children, especially as far as vocal control is concerned, participation in group work and the desire to express through music and sounds.
- A great facility has been found on the pupils' part for learning rhythmic elements. The chromatic support to differentiate notes makes learning melodic elements by discovery easier.
- Being offered as an educational complement, the method contributes to a greater awareness of musical culture. The children show more interest in learning to play instruments and the musical reality (interest, ability to listen, retention of tunes and rhythms, sound recognition and discrimination).
- An improvement in phonology and diction. Rhythmic perception of the syllable.
- The children enjoy learning musical language, finding it easy, something which up till now has been the privilege of the few, and always at a later age, with no link to their general learning of reading and writing.

As for the negative aspects or the difficulties we have found, we should point out the following:

- Some teachers had difficulties, especially concerning their confidence in intonation and the vocal qualities for singing. This will improve with the introduction of the computer tool, as the interpretation of sheet music through voice has been incorporated into the tool.
- Achieving the participation of all the members of the team has been difficult on occasions, in particular due to the insecurity mentioned in the previous point.
- Achieving the collaboration of the primary school music specialist has also been difficult on occasions, as the early introduction of musical language changes the programming of contents in the following stages.
- Differences in materials from one school to another. However, it must be pointed out that it is getting easier and easier to improve materials, since both public institutions and Parents' Associations have a favourable view of implanting an educational project to introduce musical language at an early age, and they are surprised at how something that was beyond their reach and which they did not enjoy is now so easily learnt by their children.
- The frequent discontinuity of teachers in Infant schools, especially in rural areas. Often, more than fifty per cent of teachers change from one year to the next, which means that teachers have to undergo training once more, thus greatly delaying the project's implantation and evaluation.

Finally, it should be pointed out that the project has a time scale of three consecutive academic years, with a gradual increase in complexity of the contents. The results cannot be the same when we begin to teach groups intensively (e.g., 4-year-old children who start, 5-year-old children who study the contents for ages 3 and 4).

6. Conclusions

This work presents a new pedagogical methodology to introduce musical language teaching at an early age. After an experimental implantation over several years, suffering certain discontinuities due to teacher mobility, it can be concluded that the project has been a success, that it has lived up to the initially proposed expectations and objectives, and has even surpassed them. We are currently working on an evaluation in greater depth of both the methodology and the computer application. With this in mind, in the near future, we hope to publish a description of the method and the didactic materials that accompany it.

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