



UMSIC Project rationale at the European level

One of the major challenges in European preschools and schools today is the inclusion of different learners. Learning requires self-regulation as well as communication skills. Among the most common types of learning disabilities are attention deficit disorders (ADHD) which are frequently accompanied by mental or behavioural disorders.

Another challenge for inclusive education is the increasing migration particularly from the eastern Europe. Migrated children find themselves isolated from peers, both by language and culture. Their academic achievement may be low, due to the level of education in the home country. These children are often faced with stress caused by socio-economic problems, for example their parents' unemployment, in both the home and host country.

These groups of children are at risk of impaired functioning in important areas related to school success. Low academic achievement is known to be one of the most significant individual risk factors of marginalisation and early school leaving. Early intervention is necessary to prevent a negative circle of behavioural disorders, academic and social skill deficits, lowered self-esteem, lack of social relationships, as well as problems in self-regulation in every-day life and, secondary psychological disorders such as anxiety or depression.

We know that children benefit from cognitive intervention and therapy. However, the skills ADHD children learn during training are difficult to generalise to new contexts, because they are academic in nature. It is here when music comes into the picture. Music therapy studies with these young people have shown that therapy including improvisation improves self-regulation, self-esteem, self-expression, social functioning and interaction, motivation, musical skills and academic progress as well as positive attitude towards school.

In order to offer children better chances to integrate into the multicultural European society, the UMSIC project assumes that language and music are essential for building a cultural identity and for actively participating in various cultural environments. In addition, language and music are both powerful means to integrate into new social groups. The early experiences of social belonging - especially when created through socio-emotional sharing of food, musical rituals, and language - are crucial for building up a personal cultural identity.

Music enhancing social coherence

Music is one of the most popular recreational activities in people's everyday life. It connects people and cultures. We know that young people use music for regulating their emotions and moods, and that musical creativity is a channel for mental work and emotional coping.

Informal learning of music is happening all the time. More and more young people join informal online communities to compose music and discuss it. However, children with moderate learning difficulties and migrated children who would benefit of these communities, do not have access to them because their digital literacy and technological skills are poorly developed. Moreover, mobile applications have mainly been targeted to professional levels of musical expertise.

The UMSIC project offers access to these communities for children at risk of marginalisation, and it constructs new learning environments and social contexts of musical creativity and sharing of music for them.

UMSIC objectives

The UMSIC project aims at developing a mobile time- and place-independent system that provides an interactive environment for children whilst also enabling them to communicate musically and informally with their peers. It seeks to combine the use of modern technology and effective educational principles to foster social inclusion and prevent marginalisation of children at risks even in more challenging contexts. In particular, UMSIC's objectives concern targeted groups of end-users, preschool (aged 3-6) and school-aged (6-12) children with an emphasis on those with moderate learning difficulties and those who are immigrant and studying in unsupported integrated school classes. Both of these groups increase in numbers in schools due to EU and local policies with regard to migration and inclusion.

The UMSIC project consists of three related components, namely (1) a technical solution, (2) its application and (3) target users. The technical component specifies the different operation modes of the technical environment, i.e. stand-alone, networked, ad hoc and public. The application component specifies the range of possible built-in features, i.e. improvisation, composition, karaoke and virtual instruments. The third component, target users, specifies the special characters of children and focuses on the needs of those immigrant and those with moderate learning difficulties.

The product developed in the UMSIC project supports various devices and middleware, and a set of targeted functionalities for the different target users. It is implemented on top of an existing communications platform and consists of scalable i) co-operative software elements (middleware modules) and ii) interfaces. The product is open to all extensions, including third party software modules or add-on functionalities. The software prototypes developed in the UMSIC are open for third party innovations and innovators. Unlike other approaches, the UMSIC provides an open and easy-to-access solution in adding new contextual situations and educational contexts. Thus, the UMSIC is proposing an efficient, lightweight and scalable solution that uses music technology to promote the possibilities of social inclusion. In addition, a set of prototypes are developed for contributing among others the impact analysis and the concept validation of the project.

The UMSIC project aims at exploring the product's potential in supporting children's development of language and music competences, especially of children who have to operate in the multicultural environments. In childhood, learning should be playful, socially integrative, and related to the child's interests and motivation. Since the UMSIC allows new ways to play with the voice, with singing and communication, the collectively shared song repertoire may also be used to enhance social coherence and by that supporting identification.

The UMSIC project does not consider the product to be a tool supporting socio-cultural integration per se nor to be a tool for unifying communities to a single culture's language and music. Rather the emphasis lies on the possibility of encouraging and sharing the creative music making of individuals, whilst providing instruction in the design of shared songs and music pieces.

The ubiquitous product (i.e. application), is expected to provide sound synthesis, sampling, sequencing and touch-screen virtual musical instruments in an educative form for children in different age groups and learners with specific needs. It aims at providing children with a new means of pursuing musical creativity, social cohesion and emotional self-regulation, which may significantly enhance social inclusion. The product is also a novel research tool with which data of children's cognitive, emotional and social aspects of general and musical development can be obtained. It can be characterized as being an innovation for it includes all the following features as a combination: musical creativity, learning and development, social sharing and identity, and research.

Who we are

The UMSIC project is run by an interdisciplinary and multinational group of experts. The fields of expertise are developmental psychology, music education, music technology, music therapy, software engineering, and Human Computer Interaction for Children. Moreover, an Ethical Advisory Board which has been established especially for the project, constantly monitors ethical issues such as privacy and informed consent.

UMSIC website: www.umsic.org