Tackling the Lack of Inclusivity in Computer Music in Rural Areas in Mexico: A Case Study of Michoacán

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Background

To begin to address the problems concerning inclusion and access to computer music in rural areas in Mexico it is firstly necessary to consider how young people in the country may initially develop an interest in music and how they may gain access to the study of the subject. An interest in music principally arises because children have contact with music in their home or school environment. In the home environment children may hear their parents playing music or they could be introduced to music through friends, they may also receive access to music education by way of their parents paying for private tuition. Not all children in Mexico will be exposed to music in the home and so their main access to music comes from the school environment. In Mexico, music education is included in the curriculum, and all children who attend both primary and secondary school have access to it in some form. However, it is worthy of note that music is not taught as a specific individual subject in primary. Instead, the curriculum contains an interdisciplinary artistic subject called Interdisciplinary Artistic Collective, which involves music, dance, visual arts and theatre. In secondary school, students choose to specialize in either music, dance, visual arts or theatre during their three years of study (Secretaría de Educación Pública, 2021).

Figure 1. Michoacán geographical location.

Although the primary and secondary curricula contain music, it is rare for children to access or be exposed to music technology. Music technology courses are only offered by higher education institutions located in urban areas so access to these courses is limited to young people who already reside in major

cities and those that are financially able to relocate. Free state funded undergraduate music technology courses are only offered in Mexico City and Morelia (the capital city of the state of Michoacán), whilst the rest are found in private higher education institutions, which are also located in cities. The majority of undergraduate music technology courses focus on audio engineering rather than an artistic or compositional approach to making music with computers (Universidad Nacional Autónoma de México, 2015). The ENES, Morelia, UNAM (National School of Superior Studies) located in the state capital of Michoacán is the only institution which offers a free state funded undergraduate degree in Music and Artistic Technology which focuses on composition aided by computers (Figure 1). All this means that many young people in Mexico, mainly those who live in rural areas, are excluded from opportunities to engage with computer music. Exposure to computer music can provide many benefits. It provides the students with new outlets for artistic expression and the skills promoted by the engagement in computer music can be transferred to other subjects in the school curricula.

Why is computer music not inclusive in a state like Michoacán?

In this discussion, we will focus on the state of Michoacán to highlight how inclusivity issues in computer music can arise in rural areas in Mexico. Michoacán is overwhelmingly a rural state as 97% of its localities are described as being rural (Consejo Estatal de Población, 2021). This makes it a pertinent example to discuss when considering issues of inclusivity in rural areas. The Mexican National Institute of Statistics and Geography defines a rural area as one which contains a population of less than 2500 people (Gonzalez Arellano et al., 2013). In Michoacán, 39% of the population is of school age (3 to 24 years old). 61% of 15- to 24-year-olds only complete primary and secondary education and do not continue education after the age of 15 i.e., they do not attend high school or further education according to the most recent national census (Instituto Nacional de Estadística y Geografía, 2020). This represents a serious problem in terms of social disadvantage, because the majority of young people

do not have access to university where they could enroll in computer music courses.

On the other hand, most of the population of Michoacán has access to primary and secondary school education, as 85% of 3- to 14-year-olds attend school (Instituto Nacional de Estadística y Geografía, 2020). This represents an opportunity for engaging children and teenagers in music-making with technology in the primary and secondary school setting. However, the complex social demographics of Michoacán make this challenging. We will highlight three social issues: firstly, the population of Michoacán is disproportionately deprived (Consejo Nacional de Población, 2020), with only 47% of the population having access to computers or the internet. Secondly, there is a considerable level of violence provoked by the activity of the drug cartels in the region, and problems with security which discourage institutions and practitioners from traveling to rural areas to implement artistic initiatives. Thirdly, all of the above creates an environment of educational disadvantage with respect to music and technology in Michoacán and means there is a lack of opportunities for young people to develop an interest in computer music.

It is important to mention that some institutions in the state have been working to tackle these problems. For instance, the CMMAS (The Mexican Centre for Music and Sound Art) created the initiative Acercamientos Sonoros (https://cmmas.org/as/) which is a program that offers workshops in sound art and music made with technology in primary and secondary schools in the state's capital city of Morelia. Also, the ministry of culture of Michoacán offers courses, scholarships and funding to young creators in the region (https://cultura.michoacan.gob.mx/). However, these cultural opportunities are mostly offered in the capital city of the state, while the rural areas representing 97% of the state (Consejo Estatal de Población, 2021) are left behind. The reasons for this are many: it is physically difficult to access these rural communities due to a lack of infrastructure; there are few technological resources in the schools; and the drug cartels have control of various rural regions in the state provoking security issues.

Figure 2. Rural community of Tumbisca, Michoacán, México.

How to tackle these issues and broaden young people«s access to computer music in Michoacán

Some initiatives of social inclusivity have started to emerge in recent years to promote access to music education programmes in rural areas in Michoacán. In 2016, the Erongarícuaro Conservatorio Purépecha (Purepechan Conservatoire) was established. The aim of this institution is to rescue regional music traditions of the Purépecha's culture[1] in different sites in the region. Another important initiative is the work of Biblioteca Comunitaria Ambulante de Comachuén (Mobile Community Library of Comachuén) in Nahuatzen which during recent years has offered a variety of artistic and musical activities, workshops and courses to children and teenagers. An important part of their activities is related to traditional music composition and conferences to display and promote the region's artists.
In the specific field of music education and technology, the authors have been working in Tumbisca, a small rural community in the central region of Michoacán (Figure 2). This project has been running since 2018 and focusses on improving and broadening access to electroacoustic music education and explores

Figure 3. Interactive music system.

how sound-based composition through the use of technology could help or contribute to music technology education.

Comunidades Sonoras (Sound Communities): Working with Electroacoustic Music in Rural Areas

When we first began the project, Comunidades Sonoras (Sound Communities), we had to face the problem of the lack of access to computers and internet due to deprivation. Although Tumbisca has a primary, secondary and a small high school, the facilities are in a very poor condition. None of the educational institutions have computers or access to internet; in fact, the high school is a small building made of wood. Therefore, using technology to teach music was a difficult idea to implement.

We noticed that although the population of Tumbisca do not have access to computers, many of the students have smart phone devices that are used to access the internet.[2] We therefore proposed a sound pedagogy based on the use of mobile phones. A musical interactive system was created for this purpose (Figure 3). This system comprises a graphic user interface loaded in smart phone devices to control musical parameters (Duarte-Garcia et al., 2020).

The students completed a course based on modes of listening, improvisation with musical toy instruments and smart phone devices to create electroacoustic music miniatures (Duarte and Sigal 2019). In a second stage of our work with this community we focused on the listening processes of the environment, soundscapes and music com-

position with found objects (Figure 4). We found that younger students were more willing to participate in the creation of sound-based compositions (Duarte-Garcia and Sigal-Sefchovich 2019).

The project described above was funded by the ENES Morelia, UNAM through an interdisciplinary participation of several departments and undergraduate students. The aim of the project was to engage our students in real life situations to help to improve local problems. In this sense, universities have an important role in the society and there is a need for university educators to begin to go out of the classroom to serve the local community.
More recently we have identified other music & technology needs of the community in Comachuén. Traditional musicians in the area want to record their compositions and performances. Although these days (in some areas) it is easy to buy sound production equipment and to create a home studio, the lack of access to knowledge about how to use the equipment is still a problem. We have recently set up a collaboration with the Mobile Community Library of Comachuén to create a Mobile Studio that will serve this sector of the population and students from the undergraduate program in Music and Artistic Technology of the ENES Morelia will deliver courses in sound editing, music recording, production and sound-based composition in the community of Comachuén. We believe that integrating undergraduate students in these kinds of programs could help to mitigate the lack of access to music technology in rural communities and provide a continuous source of facilitators.

Conclusions – Proposals of Ways of Tackling Issues in Inclusivity in Computer Music in Rural Areas in Mexico

There are various ways in which inclusivity issues in computer music can begin to be tackled in rural areas in Mexico. The fact that many people in rural areas do not have access to computers and the internet may seem like an insurmountable problem, but many do own mobile phones with internet access. Therefore, it is necessary to consider how smaller-scale technology can be used in music technology education initiatives. Using applications

Figure 4. Concert with found objects and electroacoustic forces. Concert and a playlist of works: https://comunidadessonoras.org/talleres [accessed October 2021]

on mobile phones is a way forward to address the lack of technological resources in these areas. It is also important to consider improving access to knowledge and music education programs. We have realized that there is a need for universities to implement and fund educational initiatives within local communities, and that involving undergraduate students in community outreach projects can be a way of mitigating the lack of access to music technology education in Mexico's rural communities.

Finally, it is important to consider how to ensure that people in these areas can develop the skills they need to become independent practitioners so that they do not have to continue to rely on visiting educators from urban areas. Music education programs should focus on ensuring that young people develop skills so that they can continue to progress by themselves and share knowledge with others in their community. This is something we are addressing with the Mobile Studio project with the Mobile Community Library of Comachuén. We aim to

ensure that the participants of the course of sound-editing, music recording and production feel confident enough both to be able to record their music independently after the course«s completion, and to share their knowledge with others in the region by means of imparting their own workshops in their own communities. In the future, these proposals could be implemented in other states of Mexico that contain a high percentage of rural areas, and also in other countries with similar socioeconomic profiles.

Notes

[1] Purépecha refers to an indigenous language and ethnic group which is one of the most numerically important groups among the twelve million indigenous people of Mexico. The so-called Purépecha region covers an area of 6,000 square kilometers in the state of Michoacán. (Amézcua Luna et al., 2015). The last census showed that 90.4% of the households in Michoacán have access to mobile phones (Instituto Nacional de Estadística y Geografía, 2020).

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