

ENhance Case Study

Edinburgh Napier
UNIVERSITY

Department of
Learning & Teaching
Enhancement

Themes presented:

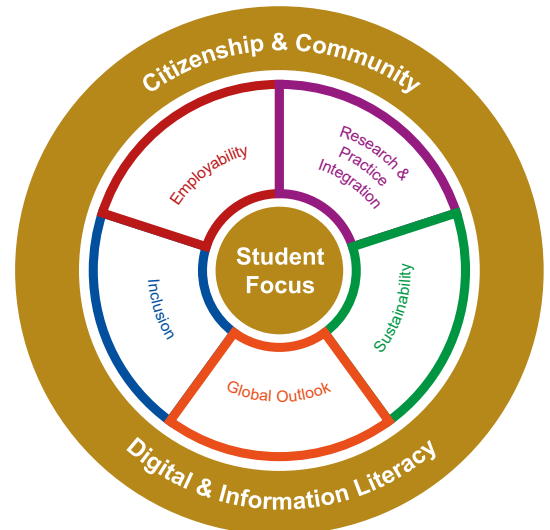
Employability; Research & Practice Integration; Sustainability;
Global Outlook; Inclusion

Programme

BSc (Hons) Sound Design

Submission made by

Dr Iain MacGregor

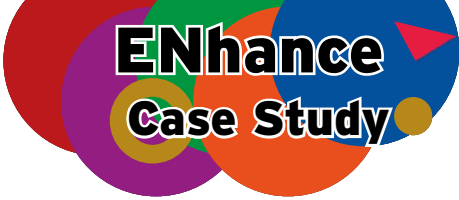


Case Study

Sustainability

How to design sound to engender product satisfaction and instil a desire to retain ownership rather than upgrade are essential parts of the degree. Methods of encouraging user customisation to extend the life of a product is explored as well as repurposing or appropriation. Factors such as efficiency of audio files for archiving, streaming, downloading, and embedding within websites are balanced against processor energy requirements for codecs to ensure that all audio content can be optimised for sustainability. Students are also taught techniques to utilise older, less expensive technologies and techniques to produce professional quality results, in order to reduce the need for regularly replacing hardware and software. This is done through the creation of noise profiles that can be utilised to reduce inherent noise in devices through noise reduction software (such as [Izotope's RX](#)).

Extending the lifespan of electronic equipment can dramatically reduce the amount of e-waste, which in 2021 is thought to be 7.4 kg for every person and increased to 7.6kg per person in 2022 (Geneva Environment Network, 2023). Ecoacoustics has also started to be incorporated into the degree so that an increased understanding of the consequences of any acoustic design is understood in terms of the wider ecosystem. Students are also taught how to build and share their personal sound effects library so that all of their efforts can be shared across projects to reduce the need to repeat effort, and decrease travel requirements, which is further enhanced through remote working, which has become increasingly the norm in the creative industries. Core sound design principles to encourage sustainability amongst end users are included in the Sound Design and Soundscapes modules such as

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auditory warnings of devices left on or open, through to utilising too much energy, such as when driving too fast.

File budgeting has always been an issue within audio, originally due to limited bandwidth, but increasingly due to environmental concerns over carbon footprint. Analogue radio transmission takes three times the amount of energy compared to Digital (UK Government, 2021). DAB is considered to be twice as efficient (WorldDAB, 2021). Streaming services now represent up to 80 % of data transmitted via the internet (Sweeney, 2021). With the energy requirements for ICT predicted to represent 20.9% of the world's energy consumption by 2030 (Jones, 2018). Streamed music is not always a more sustainable approach, compared to physical media if content is repeatedly played (Pierson-Hagger & Swindells, 2021).

The intended impact of this intervention is for students and graduates to consider the consequences of their choices in terms of file creation, and storage. A common issue is to create multiple versions of files for later decisions, rather than making decisions on the spot. This can lead to storage requirements that up are many times more than is necessary or desirable. Similarly, when archiving projects to optimise content, whilst ensuring everything is easily accessible, and reliable.

Inclusion

How to design for both hearing impaired as well as the visually impaired are essential parts of the degree. Cultural aspects of sound perception and transmission are also taught, in a newly developed module called Sonic culture. The use of sound to support conditions such as autism, which is researched within the subject group, as well as for health conditions both physical and mental and explored in the Soundscapes module as well as the Sound Design modules.

Students on the sound design degree are able to specialise in any form of sound design of their choice (Film, Food, Internet of Things (IoT), Mixed Reality (AR/VR/XR), Products, Radio, Robotics, Sport, Television, Theatre, Transport, User Interfaces, Video games...) with courseworks designed to facilitate this diverse range. The use of courseworks and weekly tutorials in most of their modules facilitates identification of individual students needs so that teaching can be adapted in real-time to maximise engagement and success, this is especially evident in the Sound Design and Soundscapes modules but is also built into all the other eight specialist audio modules. This also extends to the facilities available to students, from classroom design (see D36 Merchiston) through to equipment loans, and teaching resources (online and in person), so that a diverse set of needs can be supported.

Sound is typically considered as one of the accessibility options in devices. There is much potential to utilise sound for inclusion due to its ubiquity, and low cost. Listening is a unique experience that can bring people together into a shared experience if the differences between interpretations is sufficiently

understood. But sound can equally easily be utilised to exclude groups, and even to oppress. A paper has just been co-authored by the Programme leader about how this is currently being done on Hong Kong.

We hope that, as a result, we recruit a diverse range of students who fully engage with each other and the subject matter who go on to design fully inclusive content.

Global Outlook

Online guest lectures from practitioners around the world (Canada, China, Denmark, Finland, France, Germany, Greece, Hungary, Indonesia, Israel, Lebanon, Netherlands, Qatar, Serbia, Sweden, Switzerland, and USA) provides an insight into the broader global industry. Students can undertake internships anywhere in the world, virtually or physically. One student studied in Berlin, with a sound designer based in Scandinavia, working on a film produced in South America, and mixed in the USA. International work practices are built into the audio modules as it is common practice to collaborate across continents, as well as to create content for worldwide distribution. Teaching content includes research collaborations currently being undertaken in North America, Europe and Japan. The module Sonic Culture deliberately addresses global differences in terms of sound design, and the new Sonic Narratives module continues this theme so that students have a rich understanding about narrative conventions in different cultures.

This is an essential aspect of employment as in order for media or technologies to have a long tail they have to be capable of being distributed to multiple markets. Thinking that a single design can suffice for each area is a fallacy that limits employability.

Alumni are currently employed in a number of countries outside of the UK including Australia, Germany, Latvia, Lithuania, Malta, Poland, Rumania, Sweden amongst others. Other students are supplying content for worldwide distribution.

Research & Practice Integration

The soundscapes module was specifically created for students to explore psychoacoustic research and apply it to their chosen field in order to extend beyond current professional practice. When undertaking their Honour's project students are required to undertake a literature review, and formal evaluation, both of which require a thorough understanding of the broader research field. All three of the Sound Design lecturers have PhDs in the area and incorporate their ongoing research into the modules that they teach, such as auditory alert design and the efficacy of including the Doppler effect (Cunningham & MacGregor, 2021), which is taught in the Sound Design 2 module. Every Sound coursework on the Sound Design degree replicates professional practice to ensure that students have a rich understanding of what is expected of them when they enter industry.

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In order to progress with the Sound Design industry students have to fully understand the process of listening (Psychoacoustics). This will prepare students for any form of media or technology that utilises sound, as they will be able to analyse what is needed, propose a design and evaluate its effectiveness.

Feedback from former students has reiterated how useful the combination of research and practice based teaching has been in their current roles.

Employability

Digital competencies are taught in every module, which extend from digital audio editing, mixing, and mastering all utilising software, through to data collection, collation, and transmission. The sound design industry is almost entirely digital in nature, and the ability to work with a wide variety of systems is essential, there are three dedicated interactive requiring that information is both sourced and communicated. Tutorial sessions are incorporated into at least 6 of the modules, where students are graded on their ability to support others in collaborative settings. Students are encouraged to collaborate with students from different degrees (Acting, Film, Journalism, Television and Video games) to support the wider academic community and can utilise these projects within their studies.

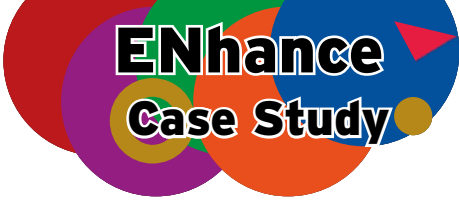
Courseworks are designed so that a diverse range of self-selected topics can be chosen from first year onwards, which helps students to develop an understanding of as well as explore national and international issues that they could use their skills to support their chosen communities. How sound affects society, and its uses for public good are specifically addressed in both the first-year Sonic culture and fourth-year Soundscapes modules, with active encouragement to volunteer to assist others beyond the University, and receive support in doing so from their tutors/audio modules (Introduction, Intermediate and Advanced). Soundscapes and the Honours project, amongst others ensures information literacy.

The intention of the degree is to provide students with sufficient knowledge and experience to gain employment prior to graduation. Ensuring that each career is as long as possible is also key, so that each student can adapt to new paradigms and technologies, without having to retrain in a different field.

Multiple alumni have reported how well prepared they were for professional work. Many still keep in touch with the Programme Leader to discuss ongoing projects, and seek advice.

Digital & Information Literacy and Citizenship & Community

Discussed in Case Studies above.

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References & Further Reading

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