



Schools acoustics put in the spotlight at the ANC's annual conference

By Miles Woolley

Andrew Parkin, ANC Chairman, opened the Association of Noise Consultants' annual conference to a packed seminar space at the prestigious Crown Plaza, Birmingham. Indeed his early comments included his delight in seeing such a huge turnout for the event.

The morning's session focused on schools and was split into two halves separated by a coffee break. The first part focused on ventilation for schools then the newly issued section 2 of Building Bulletin 93 (BB93) Acoustic Design for Schools drafted by ANC and IOA members. A lively question and answer section followed with many questions, ranging from noise from window actuators and meeting noise targets with respect to laptops and other audio visual equipment.

The second half of the morning focused on the (very) recent draft of the ANC Good Practice Guide and the ANC Schools Testing Certification Scheme. More questions followed and, like the first session, most questions were fielded by Jack Harvie-Clark.

After a delicious lunch representatives of the ANC, CIEH and IOA gave their overview of the Professional Practice Guidance (ProPG): Planning and Noise Part 1: New residential development with a fascinating overview by Colin Grimwood and concluded by Richard Greer, ANC Vice Chairman.

Following a break for coffee, all 15 shortlisted entrants for the ANC awards (see pages 16-18) gave five minute presentations on their projects. The audience voted for the best presentation and the winner was Gael Vilatarsana from Hoare Lea. The awards dinner and announcement of the winners followed in the evening. ■



Question time: (left to right) Ian Rees, Miles Woolley, Jack Harvie-Clark and Andrew Parkin

Strong call to include acoustic education in the music performance curriculum

By Luis Gomez-Agustina of London South Bank University Acoustics Group

Introduction

Acoustics can be considered as the underlying phenomenon and vehicle of music production, perception, performance and composition. The acoustics of the space greatly affect the perception of the instrument by the performer, the listening of other performers and the perception of the conductor and audience (figure 1). Therefore it is in effect another link in the music production and perception chain.

However until today this essential connection between acoustics and music seems to have been ignored or taken largely for granted by the music performance education community. Performance musicians, composers and conductors around the world (and specifically in the UK) complete their extensive musical training without basic understanding of the fundamental acoustics concepts behind their practice, making their instruction arguably incomplete and improvable. In an exhaustive search in the literature, no research or publication has been found regarding the topic here presented.

In the UK, only three higher education (HE) institutions (including universities, music colleges and conservatoires) provide some form of brief acoustic education to some music performance students. However this instruction largely focuses on aspects of instrument acoustics neglecting other essential topics such as room and psycho-acoustics.

A novel initiative has recently been initiated by the author with the aim of promoting the introduction of basic acoustic education in the HE music performance curriculum in the UK.

It is initially suggested that an introductory course could cover the following topics: the nature of sound, the auditory system, hearing conservation, psycho-acoustics, acoustics of performance



Figure 1. Two different acoustic environments used in music performance

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spaces and musical acoustics.

The author has completed a study with the purpose of gathering relevant evidence, insights and recommendations.

The main part of the study was dedicated to identifying and evaluating the perceived value, suitability, and attitudes towards the prospective introduction.

This article presents a summary of the most salient aspects of the study.

Methodology

Demographic and attitudinal data was collected from a target group deemed to encompass the performance music and HE music education community in the UK. This group was composed of graduate students, teachers, trained musicians, performers, academics, researchers, conductors, composers, institution management and acousticians trained in music or with music performance background. The three data collection methods included an UK-wide online survey questionnaire, semi-structured interviews and documentary analysis. The semi-structured interview method was incorporated to collect detailed descriptive and experiential information to supplement information found from the online questionnaires.

In the UK there are 71 HE institutions which offer courses in music and music performance. In the 2013-14 academic year there were 24,640 under- and postgraduate students enrolled in music performance related courses in the UK.

Thirty-one music performance related institutions (including the most prominent ones in the UK) participated in the online survey questionnaire and interviews which had been open collecting data for seven months. Institutions comprised of universities, music departments, academies and conservatoires of music as well as music education, music research and music professional associations.

The online questionnaire and semi-structured interview were carefully designed in two sections. The first obtained demographic information of the respondents. The second obtained attitudinal information related to the initiative. Thoughtful, intensive and systematic promotional techniques involving email distribution lists and relevant online fora, were employed to achieve a statistically representative number of responses.

Results

In total, 464 valid completed questionnaires were received (sample size) and 22 interviews were completed. Post-processing validation and cross-analysis of the data evidenced the robustness and high reliability of the data collection methods. The high volume of valid responses received allows inferences to be asserted for the entire population.

Online survey questionnaire

Ninety per cent of the online questionnaire respondents agreed with the statement that basic acoustics education can be beneficial in the training of performance musicians, composers and conductors. Only 1% disagreed and 9% did not agree or disagree.

Twenty-nine per cent of the respondents believed that the introduction of basic acoustic education in the performance music syllabus is necessary, 59% thought it should be complementary, while 12% consider that it is not a priority. Only 0.4% believed that introduction is not suitable and 0.2% that is irrelevant.

Eighty-seven of the respondents agreed with the provision of the proposed introduction in some way and only 0.4% believed that the introduction should not be integrated in the syllabus.

A less unanimous opinion was observed on the question about the prospective duration of the introduction.

Semi-structured interviews

All interview respondents believed that the introduction of basic acoustic education would be beneficial in the training of performance musicians, composers and conductors. The majority of respondents considered the introduction very important while five of them believed this to be of moderate importance.

Below there are some illustrative quotes from respondents

commenting on the importance of the proposed introduction (How important do you consider the potential introduction of basic acoustics education into the performance music syllabus?)

“Extremely important. I wish this subject had been available to me during my studies. Musicians create sound for a living. It’s shocking that we are not better educated in the science of sound” (Senior performer and teacher, MMus)

“It is in fact remarkable that acoustics haven’t been incorporated into the curriculum earlier” (Head of guitar studies)

“I think it is a great idea, I really do .It should been thought earlier!” (Musical director, pianist and vocal coach)

“This is a very important idea...” (Prof Emeritus and world authority in musical acoustics, author of seminal musical acoustics book and musician, PhD)

“Yes, very useful, very important “ (Lecturer, performer and head of music undergraduate programmes, Mus PhD)

“... that would be beneficial as so far not too many musicians (including the professional ones) are not aware of the acoustic possibilities of their instruments or the environments that they are performing” (Director of artistic and academic programmes, conductor, Mus PhD)

“Yes I strongly believe it is very important, for composers especially” (Area leader in postgraduate composition, lecturer, senior composer, conductor, performer, Mus PhD)

Some comments on the moderate importance view are provided below:

“Moderately important. Not essential, but could be a useful option particularly for composers” (Senior piano performer, PhD)

“Not so important because professional performers have limited control over their acoustic environments so it is not worth squeezing this into their packed curricula; composers/conductors might benefit more because they might have more control” (Music lecturer, researcher, manager, Mus PhD)

“Moderately important. Musicians have gotten by without it for a long time” (Lecturer in music acoustics, amateur musician, PhD in acoustics)

From comments on the question *“What benefits and drawbacks could be expected ?”* there seemed to be a clear agreement among respondents in that there are many benefits and few or no drawbacks. The only significant drawback mentioned was that *“... if it is not well designed and taught it could be a waste of time for students”*.

The recurring themes on the perceived benefits question were related to the practical and cognitive benefits to the student and that these will lead to the development of better and more rounded musicians. Below are reproduced some representative responses to this question:

“Understanding even the basics of acoustics would change the way musicians use the spaces they play in and how musicians physically arrange themselves in these spaces” (Senior performer and teacher, MMus)

“...making them more employable within the music industry” (Teacher, performer, researcher, PhD)

“Benefits: Students would understand the physical reasons for the characteristics of the instruments that they play which should enrich their musical experience and explain some of the problems of ensemble performance in unsympathetic acoustic conditions.”



❑ **Drawbacks: I cannot think of any** (Former lecturer on acoustics to music students, world leader acoustic academic, Professor Emeritus, PhD)

“The learner will develop an understanding of how acoustics can affect and influence their performance. Also the historical significance that acoustics have had in shaping musical development. Musicians being able to utilize a performance space better”. (Multi-instrumentalist, music engineering producer, PhD student)

“Understanding the ingredients of music is bound to be beneficial to the people serving it up. Lots of benefits – e.g. Composers would understand more about orchestration, performing musicians would understand concepts like loudness and tuning. No drawbacks” (Composer and scientist, MMus, PhD in applied physics)

The recurring themes found in answers to the question “What could be the potential barriers to implementation?” were the lack of perceived value (awareness), potential cost/revenue implications, crowded syllabus, lack of expertise to teach the subject.

Discussion

Findings obtained from the online questionnaire agreed closely with those obtained from the interview thematic analysis.

During the course of the study, it has been observed the general unawareness by the relevant target group of the existence of acoustics as a scientific discipline closely related to music performance. This lack of awareness is possibly one of the main contributors for this type of education not to be present the current curriculum.

In the past few years traditional institutions have started to modernise the curriculum by introducing some non-musical subjects with the aim to provide a broader general education to the student. These subjects include psychology of music, physiology,

well-being, music technology and professional skills. The author argues that basic acoustics education could be also considered as key complementary understanding in the education of well-rounded musicians.

Key benefits identified from the prospective introduction included:

- gain an understanding of how the acoustics of different spaces can affect the performance on stage and on the audience
- understand the historical significance of acoustics
- prevention of hearing loss
- increase sensitivity and awareness of the nature and characteristics of instruments, improve communication/ appreciation of other related professionals
- expansion of musicians' world view
- facilitate the improvement in aural skills and performance particularly in composing and operatic practice
- enrichment of musical learning experience
- show acoustics as a related industry for potential career change.

No significant drawbacks derived from a prospective introduction were identified in the study.

The following barriers to implementation were identified:

- initial lack of appreciation of the potential value and benefits
- lack of qualified staff
- crowded syllabus
- cost/revenue considerations.

Conclusions

Findings from this study clearly and conclusively showed that the large majority of the HE performance music community in the UK believe that the introduction of basic acoustics education in the instruction of performance musicians, composers and conductors would be very relevant and beneficial. Also the large

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