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Music technology, composition teaching and employability skills

ABSTRACT

This article explores the relationship between the creative skills taught as part of the music technology BA course at Lancaster University and the skills valued by graduates and employers in the creative industries. The study investigated ways of enhancing specific and generic employability skills intrinsic to music technology teaching while working in close collaboration with industry partners and Lancaster University graduates. A survey of students, graduates and industry experts showed that generic and discipline-based skills linked to music technology composition teaching, such as communication, planning and organizing and critical listening, are highly valued by both recruiting professionals and students. These results are in line with findings from an earlier project that showed the importance of non-disciplinary knowledge shared among students from different backgrounds for the design and implementation of successful interdisciplinary collaborations. Future developments of the project will investigate ways of enhancing generic and specific employability skills within interdisciplinary learning environments for art and science students.

KEYWORDS

education
composition
employability
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interdisciplinarity
critical listening

INTRODUCTION

After several years teaching composition modules to music technology students at several higher education institutions in the United Kingdom, I became interested in exploring connections between music technology composition teaching and employability skills. This idea was largely motivated by the numerous e-mails and queries about employability that I received in my role of admissions tutor for the music technology BA course at Lancaster University. When trying to discuss the issue of employability with colleagues from music and other art disciplines within the department, I was surprised to discover how little knowledge about this topic was there among fellow scholars and artists. This was also the case when presenting the early findings of the project to fellow composers and scholars at two international music conferences where the exposition of results triggered heated debates about links between employability and creative practice, as will be discussed below.

Employability within music and the performing arts is a sensitive and under-researched area (British Journal of Music Education 1992: 149; Brown 2007: 28). A study by the Higher Education Academy showed that higher education institutions delivering performing arts degrees need to do more to relate their curricula with the needs of the creative industry sector (Brown 2003: 2). A survey carried out in Lancashire and Cumbria mentioned in the study showed that most performing arts graduates consider that they had failed to develop the essential employability skills needed for the creative industries (North West Labour Market Partnership 2001). In a related study, Brown explored the issue of graduate employability focussing on particular features of the labour market in the performing arts and the creative industries (Brown 2007). The results of the study showed that, even though performing art degree courses appear to be ranked particularly low in British tables of employability performance indicators, courses in dance, drama and music provide a very good preparation for the demands of the creative industries, and graduate-track jobs are higher than from other related disciplines (Brown 2007: 29). The study also showed that when employers within the creative sector are recruiting graduates they seek a combination of specific-job skills and other transferable skills such as communication, working with others, IT, research, self-development and problem solving (Brown 2007: 39). Other studies have shown that employment openings within the music industry sector do not seem to match the large number of music technology graduates produced by British universities every year, and the availability of communications technology has made the market more competitive for new professionals (Priest 2010: 63; Thorley 2014: 327). While creativity is presented in many textbooks as one of the core elements of music technology (Hugill 2008: 98; Lock 2009: 250; Hosken 2012: 1), there are few studies where the topic of employability is discussed in connection with the creative aspects of music technology degrees.

Lupton and Bruce explored models of music teaching and learning and found that there is still a limited understanding of the factors that contribute to learning composition (Lupton and Bruce 2010). Their study identified some interesting features of music technology composition teaching that can be linked with technical and generic skills connected to an 'individual problem-solving' process. The authors also proposed a set of activities involved in the design of an improved higher education music curriculum that can be related to such generic skills as planning and organizing, teamwork and communication. In another study with Further Education students, Kardos identified music technology as an effective tool to balance the knowledge

gaps of students with less formal musical experience (Kardos 2012). Kardos suggested that specific skills linked with music technology teaching, such as critical listening, sound engineering, performance and production, are directly connected with the ability of students to improve the quality of their composition work. The author also acknowledged the importance of music technology tools in composition teaching as a way of enhancing valuable skills for students seeking careers in film, television, advertising and the gaming industry. These links with creative industries has also been identified by Cain, who recognized the importance of music technology software and hardware tools as an effective link between secondary school teaching and jobs in the outside world (Cain 2004). Cain's study also acknowledged the role that music technology can play in blurring the boundaries between composition, performance and audience listening. This view is shared by other authors that regard creative aspects of music technology tools as effective means for artistic and professional development (Field 2007; Hugill 2008; Mudd 2012). In a similar study with secondary students, Winters recognized one of the main challenges of teaching composition in schools as the importance of clarifying learning objectives in relation to music technology teaching and employability prospects for students (Winters 2012). The outcome of the study suggested that learning outcomes associated with music technology composition must be framed and developed within a clear professional discourse. Composition teaching activities support the development of skills that are inextricably linked to different areas of musical activity and dynamic and changing creative industries (Davis et al. 2014). In line with this argument, Wise suggests that computer-mediated composition teaching activities result in higher levels of student engagement and achievement, enhancing the learning experience and helping students deal with real-life tasks (Wise et al. 2011).

The studies mentioned above explore interesting aspects of music composition teaching but do not deal directly with the issue of employability in relation to the creative aspects of music technology. The following article describes a project aimed at identifying generic and specific technical skills related to employability embedded in the composition modules taught at the BA in music technology at Lancaster University. The article also aimed to provide a framework for a better understanding of generic skills shared by students from different disciplines and how these skills can enhance the design and implementation of interdisciplinary student collaborations.

PILOT INTERDISCIPLINARY PROJECTS

In recent years, interdisciplinary teaching has expanded as a common trend among higher education institutions in the United Kingdom and elsewhere (Lattuca 2001; Frodeman et al. 2010; Gewin 2013; Repko 2014). The importance of creative practice in interdisciplinary teaching has been identified as one of the key elements in the development of employability skills for art graduates (British Journal of Music Education 1992; Hellwege, 1993; Brown 2007). The convergence of technology and creative practice has allowed practitioners from different disciplines to interact and develop creative projects involving new capabilities and processes for rapidly evolving professional scenarios.

Students at various institutions in the United Kingdom and abroad are being actively encouraged to develop artistic collaborations that have proven to offer career benefits such as improved productivity, strengthened communication and outreach skills (Gewin 2013: 537). As exemplified by Boehm,

music technology courses provide a unique framework for the development of interdisciplinary collaborations among students from art and science disciplines (Boehm 2007: 14).

Inspired by some of these ideas, a series of activities for Lancaster University music technology students focussing on interdisciplinarity were organized in collaboration with colleagues and students from other art disciplines. Following Ferreira's idea that music technology can be used as an effective tool to allow students from different backgrounds to collaborate and share ideas, workshops and seminars were arranged around the topic of the role of physical space in art practice (Ferreira 2007: 24). Music technology students and students from others courses such as film, dance, theatre and fine arts worked together in groups developing projects with an emphasis on the role of spatialized sound in creative practice. Over a period of four weeks, dance pieces, sound installations and films were created, presented and discussed among staff and fellow students. The overall outcome of the project showed that the level of success of the devised projects, with students from different art disciplines, relied mostly on students' generic skills rather than specific technical skills linked to their specific disciplines (Otondo 2013: 185). In line with Brown findings, which showed the importance of transferable skills (Brown: 39–40), the pilot study also revealed the importance of non-disciplinary knowledge shared among students when implementing collaborative artistic works that go beyond one particular discipline. These results provided the basis for running a larger project with the aim of identifying and enhancing the generic and specific skills of music technology composition teaching, as will be described below.

MUSIC TECHNOLOGY EMPLOYABILITY PROJECT

The employability project was based on a series of activities carried out at Lancaster University with music technology students, collaborating with industry partners, postgraduate students and BA music technology graduates. Following Priest's approach, the first part of the project aimed to identify specific and generic skills related to composition teaching that are valued by employers and Lancaster University graduates working in three relevant fields related to music technology: *live sound, studio production and game audio design* (Priest 2010: 48). Online surveys with industry partners within these fields were carried out in order to identify the generic and technical skills valued by employers when appointing music technology university graduates. The industry partners were chosen following data provided by Lancaster University's Student Registry related to destination of higher education leavers and also discussions with current students. Lancaster music technology graduates working in the field were also contacted and asked to complete the online survey, where they were quizzed about the impact the composition skills learned at Lancaster University have had in their ongoing professional development. Surveys with music technology students in their first, second and third year of the course were also carried out at the start and the end of the project, as a way of assessing the level of awareness that students have about their employability skills. The results of these surveys will be analysed and discussed in the following sections. The second part of the project aimed to enhance the employability skills identified in the first part of the project among composition students. This was done through a series of seminars and workshops where industry partners and postgraduate students collaborated with undergraduate students, exploring relevant employability features of their creative

coursework. Following a similar approach to Thorley's study involving industry professionals, three industry experts from a recording studio, games audio and live sound companies were invited to deliver workshops about generic and specific skills relevant to students' professional development and take part in seminars where students' compositions were analysed and discussed (Thorley 2014: 328). Students taking part in the seminars were given formative feedback about the development and presentation of their works in a professional environment and also guidance about further development of their projects. Postgraduate students working in research areas related to those discussed in the seminars carried out complementary workshops with music technology students, focussing on the skills identified in the first part of the project and some of the issues arising from the student seminars with the guest speakers. The goal of these workshops was to provide students with the practical support needed to develop some of the employability skills identified by industry partners and graduates and also to offer them a framework to discuss and present ideas in a professional context. At the end of the series of seminars and workshops, students were invited to take part in a second focus group, where they discussed ideas about their learning experience throughout the project. The data generated from the interviews, seminars, workshops and focus groups were analysed and used as the basis for the development of learning materials and teaching activities for the development of a new curriculum design.

SURVEYS

Survey design

As mentioned above, a three-question survey was presented to a group of Lancaster University music technology students and a second group of practitioners consisting of Lancaster University graduates and industry experts. Eighteen music technology students took part in the survey, voluntarily answering an online questionnaire sent by e-mail. Twenty-three Lancaster University music technology graduates and the three industry experts mentioned above completed an online version of the questionnaire. For both groups, the survey questions were the following:

1. In your experience, what are the generic skills related to composition that are most valued in your professional environment? (e.g. communication, teamwork, problem solving, planning & organising, initiative & enterprise, technical skills, etc.)
2. What are the specific professional skills related to composition that are most valued in your professional environment? (e.g. recording, mixing, producing, performing, listening, programming, etc.)
3. How would you improve music technology composition teaching to make it more relevant to professional practice?

Survey results

Survey results are presented below for each question in Tables 1, 2 and 3. Results for question 1 show that practitioners value communication skills more than students, who give more importance to technology skills. These results are in line with similar employability studies with graduates and employers where communication skills were valued more than any other generic skills

Undergraduates	Practitioners
Technology skills (56%)	Communication (65%)
Planning and organising (50%)	Planning and organizing (54%)
Teamwork (44%)	Problem-solving (54%)
Communication (44%)	Teamwork (35%)
Initiative and enterprise (33%)	Initiative and enterprise (31%)
Problem-solving (33%)	Technology skills (30%)
Creative thinking (28%)	Creative thinking (27%)
Other (28%)	Other (31%)

Table 1: Generic skills identified by participants in question 1 of the survey.

Undergraduates	Practitioners
Listening and analysing (56%)	Listening and analysing (58%)
Recording (56%)	Mixing (42%)
Mixing (44%)	Recording (38%)
Programming (39%)	Other (27%)
Working with other media (33%)	Working with other media (27%)
Other (33%)	Performing (19%)
Performing (17%)	Programming (15%)

Table 2: Specific skills identified by participants in question 2 of the survey.

Undergraduates	Practitioners
Relate coursework to specific industries (50%)	Relate coursework to specific industries (42%)
Workshops with industry experts (33%)	Work to stricter project briefs (27%)
Teach more technical skills (28%)	Teach more technical skills (12%)
Work to stricter project briefs (17%)	More analysis seminars (12%)
More practical work (11%)	More practical work (12%)
More group work (6%)	More group work (12%)
More written and practical coursework (6%)	More written and practical coursework (8%)
More analysis seminars (0%)	Workshops with industry experts (8%)

Table 3: Summary of topics identified by participants in question 3 of the survey.

(Brown 2007: 39; Priest 2010: 63; Wickramasinghe and Perera 2010: 235). Planning and organizing is rated highly by both groups, while problem-solving seems to be valued more by practitioners than students. The differences between the other generic skills mentioned by respondents are not as large as the ones mentioned above.

The results for question 2, about specific skills, do not show very large differences between responses from both groups. In line with results from a recent study by Walzer, critical listening was identified by both students and practitioners as the most important specific skill linked with employability (Walzer 2015: 42). Results also show that recording is valued more by students than practitioners, and mixing is rated in a similar way by both groups. Rather surprisingly, results also show that students tend to value programming skills much more than practitioners. This could be linked to the fact that the biggest single sector in the creative industries profession market in recent years has been computer services, accounting for with 40 per cent of the available jobs (Brinkley and Holloway 2010). There is an interesting awareness among students about the discipline-based skills of the course related to tasks in particular industries like game design, studio production and film.

Results for question 3 provide a considerable range of opinions and topics that have been summarised in Table 3. The open nature of the question allowed participants from both groups to be either very detailed or brief in their responses. Both groups gave importance to the relationship between course-work and tasks performed in specific industries related to music technology. In general terms, and in line with results for questions 1 and 2, students tend to give importance to technical skills and workshops with industry experts, while practitioners seem to more value working to stricter project briefs.

DISCUSSION

In line with similar studies, the survey results show that, in general terms, employability is perceived by respondents as being linked more with generic skills rather than specific professional skills related to particular disciplines (Pool and Sewell 2007; Brown 2007; Priest 2010; Wickramasinghe and Perera 2010; Lewis 2012). Results also show that the difference between students' and professionals' views about employability is not as large as would have been initially expected. While there is a natural tendency for students to value technical skills over generic skills, there is a surprising awareness among them about links between specific course features and jobs in the creative industries. In this respect, what is also surprising is the importance given by students to listening and analysing over recording, which is normally perceived and promoted as being one of the most accepted and advertised technical skills related to music technology courses. Another interesting aspect of the survey results is the opinion divide between those who conceive music technology composition teaching as directly linked with employability and those who do not see a direct connection between the two. Browsing through responses from both groups for question 3, it is interesting to observe that most opinions tend to polarize between two sides of the argument. On the one side, we find opinions such as 'composition should be focussed on skills that are transferable to any commercial environment' and 'composition should cater to specific areas of the music and creative industries.' On the other side of the argument, we find opinions such as 'composition is something very personal and does not translate well into a professional environment' and 'composition should be taught in a way that is as pure to the subject as possible.' Surprisingly, most students' opinions belong to the first group, while most graduates' responses belong to the second group. This opinion divide was also evident when presenting the early results of this study at two international music conferences held in the United Kingdom in 2013. In both cases, an interesting and

passionate debate about employability took place after the presentation of the results discussed above. On the one hand, a number of attendees at the session, mostly electro-acoustic music composers, argued that employability should not be a concern when teaching music technology composition. On the other hand, a larger group of mostly scholars and industry experts argued about the importance of establishing clear links in the curriculum between the creative industries and music technology composition teaching. While there is a study that supports the first view (Lewis 2012), most studies related to this topic recognize the importance of creating links between composition teaching in the curriculum and jobs in the creative industries as a key factor in promoting graduate employability (Peacock 1987; *British Journal of Music Education* 1992; Busen-Smith 1999; Hargreaves et al. 2003; Cain 2004; Bolden 2009; Lupton and Bruce 2010; Kardos 2012; Winters 2012; Thorley 2014). The opinion differences mentioned above can also be linked with results from a study about employability carried out at the Faculty of Arts and Social Science (FASS) at Lancaster University (Lamb et al. 2012). The aim of this study was to explore the employment outcomes of Lancaster University students in arts, humanities and social science and involved students, academics, alumni and industry experts. The research concluded that FASS students are mostly motivated by a strong internal drive to increase knowledge or explore artistic areas of personal interest, but they do not start their studies with the intention of maximizing their earnings through their professional career. The report also showed that, alongside discipline-specific knowledge and expertise, students develop a large range of transferable skills that are highly valued by employers in the creative industries. These results reinforce the idea that, in order to improve employability awareness among music technology composition students, there needs to be an integrated and well-balanced curriculum design that incorporates a wide range of activities, such as the hierarchical models for teaching and learning composition proposed by Lupton and Bruce (2010). These models effectively integrate different approaches to composition within a flexible curriculum that incorporates a well-balanced blend of activities to enhance such key employability skills as communication, listening abilities, problem-solving and planning.

The importance attributed by students and practitioners to critical listening skills as an effective link between music technology composition teaching and employability is an interesting finding of this study. These results are in line with recent research that showed that industry perceptions of listening skills are advantageous in specific vocational programmes designed to enable students to integrate into the music technology labour market within a relatively short period of time (Walzer 2015: 48). In line with Corey's approach, Walzer suggests that there is a need for a much more comprehensive and refined approach to critical listening teaching that balances workforce-specific requirements, like recording and mixing, with critical thinking, problem-solving and other relevant soft skills (Corey 2010: 5). This result supports Kardos' argument that critical listening should be an inherent part of music technology composition teaching and that music technology tools provide a suitable basis for the development of employability skills related to film, television, advertising and the game industry (Kardos 2012: 151). In this context, listening can be used as an effective pedagogical tool to build bridges between traditional notated composition and creative technology, which can considerably improve students' job prospects. The studies related to critical listening mentioned above are also in line with a considerable amount of research published in the

last decade, which positions listening within an interdisciplinary framework in connection with such disciplines as acoustic ecology, aesthetics, architecture, anthropology, psychology, sociology and others (Blessner and Salter 2007; Demers 2010; Born 2013; Carlyle and Lane 2013; Heller 2013).

CONCLUSIONS

A better understanding of ways of enhancing students' employability skills through composition teaching appears to be one of the main challenges of today's music technology degrees. While students seem to be conscious of the importance of transferable skills embedded in music technology composition teaching, there still seems to be a lack of awareness among composers and music technology teachers about the key skills appreciated by employers and graduate recruiting agencies within the creative industries. Following a global international trend, music technology courses are becoming more interdisciplinary and flexible to cope with the demands of an increasingly diverse and competitive labour market. This tendency poses a challenge for teachers and curriculum developers in designing inclusive music technology teaching programmes that can enhance a well-balanced mix of the generic and discipline-based skills for students from different kinds of backgrounds (Ferreira 2007: 33; Burnard 2007: 49; Priest 2010: 63).

Future developments of this project will explore ways of developing an innovative teaching strategy that will develop further the results of this study in order to explore the role that creativity can play as an enhancing employability tool in a wider cross-faculty teaching framework. Studies involving engineering and design students have shown that creativity can be used as a driving force to foster collaborations between students from different backgrounds for the development of relevant professional skills (Gnaur et al. 2015; Martinez-Muneta et al. 2015). The challenge of designing and implementing new inter-faculty modules with a strong emphasis on interdisciplinary topics related to sound, such as acoustics, listening, soundscape and technology design, will be used as a framework to explore ways in which creativity can support the development of pedagogical change.

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