Transforming performance pedagogies: interactions between new technology and traditional methods

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Contents

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Executive Summary

This project aimed to address a critical gap in music learning and teaching practice by exploring ways in which digital learning can challenge, complement, and enhance instrumental and vocal education (IVT) in higher music education (HME). At the core of the project was the central question of identifying the specific affordances that digital learning can provide for what is still largely a traditional, one-to-one teaching experience within the music conservatoire and other higher education institutions. While much research has emerged challenging the supremacy of one-to-one teaching, the master-apprentice model of instrumental and vocal teaching persists.[1] In this study, conservatoire teachers and students were invited to reflect on their experience of online instrumental teaching during the pandemic. The primary focus of the interviews was to identify the novel approaches that teachers relied on during this period and to elicit ways in which the conditions of online teaching may yield affordances that could enhance IVT pedagogies in the future. In response to thematic analysis of the interviews alongside a detailed literature review, this project sets out a framework that could underpin a blended approach to instrumental teaching in higher music education. Key recommendations include a more strategic approach by conservatoires to staff development, structured use of self-recording to develop students' critical listening and self-regulation, and a renewed effort to diversify the modes of learning in and around the one-to-one teaching space.

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[1] Don Lebler, 'Student-as-Master? Reflections on a Learning Innovation in Popular Music Pedagogy', *International Journal of Music Education* 25, no. 3 (December 2007): 205–21, https://doi.org/10.1177/0255761407083575; Andrea Creech and Helena Gaunt, 'The Changing Face of Individual Instrumental Tuition: Value, Purpose, and Potential', in *The Oxford Handbook of Music Education, Volume 1*, by Andrea Creech and Helena Gaunt, ed. Gary E. McPherson and Graham F. Welch (Oxford University Press, 2012), 693–711, https://doi.org/10.1093/oxfordhb/9780199730810.013.0042; Kim Burwell, Gemma Carey, and Dawn Bennett, 'Isolation in Studio Music Teaching: The Secret Garden', *Arts and Humanities in Higher Education* 18, no. 4 (October 2019): 372–94, https://doi.org/10.1177/1474022217736581; Helena Gaunt, Guadalupe López-Íñiguez, and Andrea Creech, 'Musical Engagement in One-to-One Contexts', in *Routledge International Handbook of Music Psychology in Education and the Community*, ed. Andrea Creech, Donald A. Hodges, and Susan Hallam, 1., Routledge International Handbooks (New York: Routledge, 2021), n.p.

Glossary

Asynchronous learning
Learning that does not occur in the same place or at the same time for participants. Students can access resources and communicate at any time and are not restricted to accessing this learning at any specific time. This form of learning enables students to learn at their own pace in their own time.

Blended learning
In the context of this study, we refer to blended instrumental or vocal teaching as a form of learning that combines in-person one-to-one teaching with digital components outside the lesson time, which most commonly take the form of making and uploading video recordings of performance.

Online learning
In the context of this study, online learning refers specifically to synchronous instrumental or vocal lessons delivered using videoconferencing software, for instance Microsoft Teams or Zoom.

Synchronous learning
Learning that takes place with participants working together in real time, although not necessarily in the same place (for example, face-to-face instrumental and vocal teaching and online teaching are both synchronous learning situations).

Technology-enhanced learning
Technology enhanced learning is an overarching term to describe the use of technology to support learning, teaching and assessment and to enhance the student experience. Technology enhanced learning can support teaching and learning both onsite and remotely.

The above definitions are based on the QAA's 'Building a Taxonomy for Digital Learning'.[2]

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[2] Quality Assurance Agency for Higher Education, 'Building a Taxonomy for Digital Learning', June 2020, https://www.qaa.ac.uk/docs/qaa/guidance/building-a-taxonomy-for-digital-learning.pdf.

Context

The Digital in Conservatoire Learning and Teaching

Conservatoire learning and teaching practices incline towards being intense and embodied experiences that focus on real-time interaction.[3] Often critiqued for its insularity, the music conservatoire is regularly perceived as traditional - integrating technology within its core teaching is not germane to the culture of such institutions, especially those specialising in classical music. Within the conservatoire's educational environment, real-time collaborative activity is also central to the success of the music-making and learning. Technology is often viewed as a distraction from the vital essence of instrumental and vocal teaching, and there is suspicion about the ability of digital means to enhance the embodied experience.[4] Indeed, digital technology can be perceived as irrelevant to, or even in opposition to, the pinnacle of performance in the classical instrumental tradition; that of live, performance in-person to an audience.

In the years leading up to the pandemic this resistance, or ambivalence, to technologically enhanced one-to-one teaching in classical music has persisted, despite scholars advocating for the potential benefits of digital technologies in the one-to-one learning space.[5] Examples of possible technological enhancement might include the use of virtual learning environments, audiovisual recordings, videoconferencing, or distance learning initiatives, through to more complex digital systems such as motion tracking and analysis, or even virtual reality for the simulation of performance environments.[6] Some scholars have suggested that deep-seated traditions and values in conservatoires may detract from integration of digital technologies into the performance curriculum.[7] It is also evident that innovation in technology-enhanced teaching in music higher education has to date centred on compositional practice rather than performance, which remains attached to its 'in-

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[3] Sam Duffy and Patrick G. T. Healey, 'Music, Speech and Interaction in an Instrumental Music Lesson:An Ethnographic Study of One-to-One Music Tuition', in *Language, Music and Interaction*, ed. M. Orwin, C. Howes, and R. Kempson (College Publications, 2013), 231–80; Lilian Simones, Franziska Schroeder, and Matthew Rodger, 'Categorizations of Physical Gesture in Piano Teaching: A Preliminary Enquiry', *Psychology of Music* 43, no. 1 (January 2015): 103–21, https://doi.org/10.1177/0305735613498918.

[4] Julian Johnson, *Who Needs Classical Music? Cultural Choice and Musical Value* (New York: Oxford Univ. Press, 2011); Amy Blier-Carruthers, 'The Influence of Recording on Performance: Classical Perspectives', in *The Bloomsbury Handbook of Music Production*, ed. Andrew Bourbon and Simon Zagorski-Thomas (New York: Bloomsbury Academic, 2020), 205–20.

[5] Susan Hallam et al., 'The Development of Practising Strategies in Young People', *Psychology of Music* 40, no. 5 (September 2012): 652–80, https://doi.org/10.1177/0305735612443868; Evangelos Himonides and Ross Purves, 'The Role of Technology in Music Education in the 21st Century in the United Kingdom: Achievements, Analysis and Aspirations', in *Music Education in the 21st Century in the United Kingdom: Achievements, Analysis and Aspirations*, ed. Susan Hallam and Andrea Creech, Bedford Way Paper Series (London: Institute of Education, University of London, 2010), 123–40; Creech and Gaunt, 'The Changing Face of Individual Instrumental Tuition'.

[6] Himonides and Purves, 'The Role of Technology in Music Education in the 21st Century in the United Kingdom: Achievements, Analysis and Aspirations'; Helena Gaunt et al., 'Supporting Conservatoire Students towards Professional Integration: One-to-One Tuition and the Potential of Mentoring', *Music Education Research* 14, no. 1 (March 2012): 25–43, https://doi.org/10.1080/14613808.2012.657166.

[7] Roger Mantie, 'Thinking about Music and Technology', in *The Oxford Handbook of Technology and Music Education*, by Roger Mantie, ed. S. Alex Ruthmann and Roger Mantie (Oxford University Press, 2017), 14–30, https://doi.org/10.1093/oxfordhb/9780199372133.013.1; Jason Michael Gaines, 'Music Technology and the Conservatory Curriculum', 2018, https://doi.org/10.7916/D8NP3MW2.

the-moment' experience, possibly at all costs.[8] There exists very little scholarship investigating the relationship between digital technologies and performance training in the classical tradition at a tertiary level. The lack of sustained and meaningful interaction with digital technology in this context might also be attributed to the need to preserve the sacred space of the teaching room. In practice, most higher music education projects that explore the application of digital learning and technology are limited to the fringes of the curriculum, where they are more easily understood as compositional practice or 'academic' study within a programme.

However, learning in the performing arts, and particularly in music, is undergoing a deep, paradigmatic shift, and has been doing so for decades, long before the emergence of the Covid-19 pandemic. The traditional emphasis on practical and embodied learning experiences in the conservatoire teaching environment is now facing a more challenging landscape within a rapidly evolving music profession. The creative sector now demands graduates who can thrive in an increasingly digital world.[9] The disruptive and accelerated pivot to digital instrumental and vocal teaching during Covid has necessitated timely discussions around the dominance of the one-to-one lesson, including the deep-rooted perception that this is the most (or only) legitimate approach to performance. This project sheds light on some of the ways in which technology can disrupt this previously protected learning space, revealing more divergent and progressive pedagogical approaches.

Research Aims

Alongside the possibilities for learning innovation, it is important to recognise the limitations of present-day technologies for practical music-making. The most significant constraints continue to be related to latency, sound fidelity and visual perspective.[10] From the outset, this research project was clear that replicating the current multisensory experience of the instrumental teaching studio via digital means is not achievable, nor is it especially desirable. Rather, this research focussed on uncovering the capacity of the digital experience and technology to enhance and innovate aspects of instrumental learning in higher education.

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[8] Pamela Burnard, 'Reframing Creativity and Technology: Promoting Pedagogic Change in Music Education', *Journal of Music, Technology and Education* 1, no. 1 (16 November 2007): 37–55, https://doi.org/10.1386/jmte.1.1.37_1; Janice Waldron, 'Questioning 20th Century Assumptions About 21st Century Music Practices', *Action, Criticism, and Theory for Music Education* 17, no. 1 (April 2018): 97–113, https://doi.org/10.22176/act17.1.97.

[9] Peter Renshaw, 'Lifelong Learning for Musicians: Critical Issues Arising from a Case Study of Connect', *Lifelong Learning in Music*, n.d., https://research.hanze.nl/ws/portalfiles/portal/12420030/06_1_.pdf; Dawn Bennett, *Understanding the Classical Music Profession: The Past, the Present and Strategies for the Future* (Aldershot, Hants, England ; Burlington, VT: Ashgate, 2008); Marianna Ritchey, *Composing Capital: Classical Music in the Neoliberal Era*, Illustrated edition (Chicago: University of Chicago Press, 2019).

[10] Alan Anderson and Maria Northcote, 'Australian Studies of Videoconference e and Video-Assisted Instrumental Music Teaching: What Have We Learned?', *Australian Journal of Music Education 3* 52, no. 1 (2018): 3–18; Michele Biasutti, Roberta Antonini Philippe, and Andrea Schiavio, 'Assessing Teachers' Perspectives on Giving Music Lessons Remotely during the COVID-19 Lockdown Period', *Musicae Scientiae*, 8 March 2021, 102986492199603, https://doi.org/10.1177/1029864921996033.

This project focussed on remote instrumental teaching at a world-leading conservatoire over an extended period. The project sought to identify the challenges that both students and teachers face in adapting what is normally perceived as the sacred space of the teaching room. Understandably remote teaching on a practical instrument brought with it many challenges, some to do with technology, but others, intriguingly, to do with the way the student-teacher relationship is curated and managed. A mixture of challenges and affordances emerged from this study, and these are discussed within the analysis of student and staff findings. During this project, the focus was always the one-to-one lesson; given the limitations and tightly defined scope of this project, the research does not consider group teaching or assessment.

Research Questions

In summary, the research questions for this project were:

- In what ways can digital learning in music performance at HE level complement and enhance the traditional master-apprentice model of teaching?

- How do the interactions between student and teacher change in a hybrid learning environment, and what is the impact of this on learning?

- How might digital pedagogies provide a more open, inclusive, and reflexive pedagogical framework for both staff and students?

- How could a conceptual framework mapping practice-led learner engagement with digital learning inform curriculum development in a future where online and other non-traditional performance modes will be increasingly prevalent?

Methodology

To tackle the aims in appropriate depth and breadth, the research methodology combined a literature review with an ethnographic study of teaching staff and undergraduate music performance students at the Royal College of Music in London.

Literature Review

The first part of the literature review focussed on existing literature on online one-to-one instrumental and vocal teaching in the years leading up to the pandemic. Online and distance learning has been an active area of research since the 1990's, resulting in a vast body of international literature but surprisingly little assimilation of this into core university or conservatoire curricula. Mapping a comprehensive timeline of developments was outside the scope of this project. Judith Bowman provides a comprehensive exploration of historical developments in distance learning in music as part of her 2014 book 'Online learning in music: foundations, frameworks, and practices'.[11] Bowman also sets out a range of considerations for designing effective online higher education courses in music, although there is only brief consideration of the one-to-one teaching space and no mention of conservatoire applications. Examples of instrumental practice prior to the pandemic include Pamela Pike's studies of piano teaching using Skype where she highlights significant benefits for learners in the online context but also identifies a gap in tertiary teacher training to deliver effective online instrumental lessons.[12] Carol Johnson has set out some of the challenges teachers experience in online music instruction, including perceptions about the limitations of technology to facilitate high-quality musical learning and a reliance on traditional face-to-face models.[13] Johnson and Virginia Lamothe's 2018 edited collection on teaching music online provides examples of a range of online learning projects in music and through these there is a persistent call to disrupt the dominance of face-to-face learning in music.[14] Although most of the case-studies in this collection involve classroom and theory-based subjects, there is some recognition of the benefits of using digital in the one-to-one teaching space and the concept of 'deterritorialization' appears especially relevant in relation to the teacher-student dyad of performance teaching.

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[11] Judith Bowman, *Online Learning in Music: Foundations, Frameworks, and Practices* (Oxford ; New York: Oxford University Press, 2014).

[12] Pamela D. Pike and Isabelle Shoemaker, 'Online Piano Lessons: A Teacher's Journey into an Emerging 21st-Century Virtual Teaching Environment', *American Music Teacher*, 2015, Gale Academic OneFile; Pamela D. Pike, 'Preparing an Emerging Professional to Teach PIano Online: A Case Study', *International Journal on Innovations in Online Education* 4, no. 2 (2020), https://doi.org/10.1615/IntJInnovOnlineEdu.2020034417.

[13] Carol Johnson, 'Teaching Music Online: Changing Pedagogical Approach When Moving to the Online Environment', *London Review of Education*, 15 November 2017, https://doi.org/10.18546/LRE.15.3.08.

[14] Carol Johnson and Virginia Christy Lamothe, eds., *Pedagogy Development for Teaching Online Music*, Advances in Educational Technologies and Instructional Design (AETID) Book Series (Hershey PA: Information Science Reference, 2018).

As a general observation, we noted that much of the literature with a specific focus on online instrumental teaching tended to focus on one of two areas. The first involved critiquing the limitations of the master-apprentice model in one-to-one instrumental practice and concurrently advocating for more progressive approaches to the student/teaching relationship.[15] Second, there was a selection of literature that explored approaches to online synchronous instrumental teaching via videoconferencing software.[16] While entirely relevant for this project, such studies were generally experimental in design, displaying technical limitations and limited scope for wider implementation, especially in higher education settings. There were few intersections between these two identified areas, other than speculation that technology *could* offer interesting possibilities in the IVT domain. Immediately prior to the pandemic, technology-enhanced one-to-one instrumental teaching, especially in HE settings, was limited to the periphery of the conservatoire curriculum.

From 2020 through to early 2022, the literature in the field of music education shifted dramatically in response to the Covid-19 'digital pivot'. National reports and guidance tackled broad issues in the higher education online learning environment, although few of these acknowledged the one-to-one teaching space or the distinctive needs of small-specialist institutions.[17] In the last twelve months, many more articles have been published in the specific area of online synchronous instrumental and vocal teaching.[18] Some of these studies overlap with this project, recognising emergent, innovative online practices in HME. However, there is a risk that the learnings from

[15] Burwell, Carey, and Bennett, 'Isolation in Studio Music Teaching'; G. Carey et al., 'Enhancing Learning and Teaching in the Tertiary Music Studio through Reflection and Collaboration', *Music Education Research* 20, no. 4 (8 August 2018): 399–411, https://doi.org/10.1080/14613808.2017.1409204; Creech and Gaunt, 'The Changing Face of Individual Instrumental Tuition'; Clarissa Foletto, 'Exploring the "Secret Garden": Instructional Communication in One-to-One Instrumental Lessons', *EDUSER: Revista de Educação* 10, no. 2 (2018): 50–72; Paul Williamson, Eugene Ball, and Emily Wilson, 'Developing One-to-One Contemporary Trumpet Teaching Strategies through Peer Observation and Collaborative Reflection', *International Journal of Music Education* 37, no. 4 (November 2019): 622–35, https://doi.org/10.1177/0255761419863124.

[16] Anderson and Northcote, 'Australian Studies of Videoconference e and Video-Assisted Instrumental Music Teaching: What Have We Learned?'; Robert Gray, 'Meaningful Interaction: Toward a New Theoretical Approach to Online Instruction', *Technology, Pedagogy and Education* 28, no. 4 (8 August 2019): 473–84, https://doi.org/10.1080/1475939X.2019.1635519; Nathan B. Kruse et al., 'Skype Music Lessons in the Academy: Intersections of Music Education, Applied Music and Technology', *Journal of Music, Technology and Education* 6, no. 1 (1 April 2013): 43–60, https://doi.org/10.1386/jmte.6.1.43_1; Robin S. Stevens, Gary E. McPherson, and Graham A. Moore, 'Overcoming the "Tyranny of Distance" in Instrumental Music Tuition in Australia: The IMCM Project', *Journal of Music, Technology and Education* 12, no. 1 (1 August 2019): 25–47, https://doi.org/10.1386/jmte.12.1.25_1.

[17] JISC, 'Student Digital Experience Insights Survey 2020/21: UK Higher Education Findings', March 2021, https://repository.jisc.ac.uk/8318/1/DEI-P1-HE-student-briefing-2021-FINAL.pdf; The Quality Assurance Agency for Higher Education, 'The Impact of Good Practice in Digital Delivery on Student Engagement, Progression and Achievement', March 2021, https://www.qaa.ac.uk/docs/qaa/guidance/the-impact-of-good-practice-in-digital-delivery-on-student-engagement-progression-and-achievement.pdf.

[18] Ana Martínez Hernández, 'Online Learning in Higher Music Education: Benefits, Challenges and Drawbacks of One-to-One Videoconference Instrumental Lessons', *Journal of Music, Technology and Education* 13, no. 2 (1 December 2020): 181–97, https://doi.org/10.1386/jmte_00022_1; David A. Camlin and Tania Lisboa, 'The Digital "Turn" in Music Education (Editorial)', *Music Education Research* 23, no. 2 (15 March 2021): 129–38, https://doi.org/10.1080/14613808.2021.1908792; Biasutti, Antonini Philippe, and Schiavio, 'Assessing Teachers' Perspectives on Giving Music Lessons Remotely during the COVID-19 Lockdown Period'; Leon R. de Bruin, 'Instrumental Music Educators in a COVID Landscape: A Reassertion of Relationality and Connection in Teaching Practice', *Frontiers in Psychology* 11 (14 January 2021): 624717, https://doi.org/10.3389/fpsyg.2020.624717; Tal Vaizman, 'Teaching Musical Instruments during COVID-19: Teachers Assess Struggles, Relations with Students, and Leveraging', *Music Education Research* 24, no. 2 (15 March 2022): 152–65, https://doi.org/10.1080/14613808.2022.2053512.

these studies, including our own, are short-lived. In compiling the recommendations for this project, we respond to the urge to revert to pre-Covid practices, while recognising the challenges of moving pedagogies forward in realistic and sustainable ways.

Ethnographic Approach

One-to-one teaching is central to student musicians' development in music higher education; however, it is often the most hidden and elusive form of teaching, characterised by a 'culture of concealment'.[19] To uncover the lived experiences and pedagogies experienced by students and staff during Covid, we used an ethnographic approach focussed on semi-structured interviews with staff and student participants. In total, eight RCM students and eight RCM teachers participated in individual interviews of approximately 45 minutes. The interviews were conducted over Teams by Samuel Mallia, the project research assistant and a current PhD student in Music Education at the Royal College of Music. Since the principal investigator and co-investigator are both curriculum managers at the College, the use of an impartial research assistant ensured that participants were less likely associate the interviews with any kind of performance review or student assessment. It was felt this would put participants more at ease and willing to share both positive and negative experiences. Ethical approval was granted by the Royal College of Music Research Ethics Committee.

Participant Selection

Each instrumental family has its own culture and conventions of instrumental teaching.[20] To recognise a range of practices across the conservatoire, we sought to work with participants from a variety of instrumental groups. The student participants were selected following an open call for participation. The final eight student participants included one or more undergraduate students representing brass, keyboard, percussion, strings, voice, and woodwind.

For staff, we sought to engage with a range of instrumental families while also spanning 'digital inhibitors' and 'reluctant adopters' as well as 'digital innovators'.[21] To identify an appropriate mix of participants, we requested nominations from line managers across the conservatoire based on observations of engagement with technology during Covid. Since identifying and sharing innovative practice was a key aim, there was a slight bias towards reluctant adopters and digital innovators, a leaning which we accepted due to the potential for richer findings. Staff participants reflected: keyboard, strings, brass, and percussion.

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[19] Gemma Marian Carey et al., 'Characterising One-to-One Conservatoire Teaching: Some Implications of a Quantitative Analysis', *Music Education Research* 15, no. 3 (September 2013): 359, https://doi.org/10.1080/14613808.2013.824954.
[20] Richard J. Dammers, 'Utilizing Internet-Based Videoconferencing for Instrumental Music Lessons', *Update: Applications of Research in Music Education* 28, no. 1 (November 2009): 17–24, https://doi.org/10.1177/8755123309344159; Pike and Shoemaker, 'Online Piano Lessons: A Teacher's Journey into an Emerging 21st-Century Virtual Teaching Environment'.
[21] Kim Watty, Jade McKay, and Ngo, Leanne, 'Innovators or Inhibitors? Accounting Faculty Resistance to New Educational Technologies in Higher Education', *Journal of Accounting Education* 36 (September 2016): 1–15.

Interviews and Analysis

The interview questions were the same for both sets of interviewees. Questions focussed on previous experience and confidence using technology, initial impressions of online teaching; an exploration of changes to lesson structure that were necessary in the new digital context as well as any other activities, personal preparation for the new format of the classes and/or changes to established practices. The interviews were audio-recorded and transcribed before undergoing thematic analysis and cross-referencing with the findings of the literature survey. This led to identification of key themes that provided the basis of the conceptual framework. For the student interviews, the following initial themes were identified:

- Lesson content and structure
- Student practice and preparation
- Skills development
- Recording as a learning tool
- Confidence with technology (reflecting on the concept of 'digital natives')
- Technological quality and fidelity issues
- Changing attitudes to technology
- Socialisation and peer support
- Departmental learning cultures
- Self-motivation

These were later refined and narrowed down to the five themes discussed in the student analysis below.

For the staff interviews, the following key themes were identified and these form the basis of our discussion

- Student-focussed teaching
- practical applications for reflective learning
- narrative strategies for communication

Limitations

We recognise that the small sample size (eight teaching staff and eight students) for this research provides only a snapshot of the teaching practices developed during this period of online teaching. To put this into context, at the RCM over 1000 online instrumental and vocal lessons were delivered weekly during the pandemic to undergraduate and postgraduate students in their principal, second or related performance study.

Furthermore, all participants were associated with one UK conservatoire, the Royal College of Music. As a result, responses may be shaped by specific institutional policies, expectations, and a UK-centric experience of Covid, although some of the student participants did experience this period from their home country outside the UK. While it is possible that responses from participants other institutions might have presented some variation, cross-referencing with recent scholarship suggests overlapping themes.[22]

We also acknowledge that students (and to a lesser extent staff too) were self-selecting and therefore had a personal interest in the research. This led to more reflective responses in the semi-structured interviews, but the researchers didn't necessarily hear about the very negative experiences. The scheduling of the semi-structured interviews in the summer term immediately following the UK's second lockdown (January to March 2021) meant that online experiences were fresh in the minds of participants, but there was also a sense of online fatigue that may have shaped the responses.

The study did not focus on assessment, or on group learning, although during the interviews many students commented on the way in which online group instrumental classes complemented their one-to-one lessons and contributed to their instrumental development. Online workshops and performance classes created communities of practice in the absence of group performance and external projects. They were therefore instrumental in improving students' self-motivation and social connections during a time of isolation. There is potential to explore this specific context in more depth, as online *group* instrumental teaching remains highly relevant post-Covid, especially in the context of distance learning masterclasses with international professionals.

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[22] Biasutti, Antonini Philippe, and Schiavio, 'Assessing Teachers' Perspectives on Giving Music Lessons Remotely during the COVID-19 Lockdown Period'; Andrea Schiavio, Michele Biasutti, and Roberta Antonini Philippe, 'Creative Pedagogies in the Time of Pandemic: A Case Study with Conservatory Students', *Music Education Research*, 12 February 2021, 1–12, https://doi.org/10.1080/14613808.2021.1881054; Silvia K. Bartolic et al., 'A Multi-Institutional Assessment of Changes in Higher Education Teaching and Learning in the Face of COVID-19', *Educational Review* 74, no. 3 (16 April 2022): 517–33, https://doi.org/10.1080/00131911.2021.1955830.

Summary of findings from staff analysis

The role of artistic independence

Possibly the most crucial and important emerging idea from the analysis of staff respondents was the renewed focus placed on student independence and, more critically, the pivotal role of the teacher in enabling that independence. Most of the teachers interviewed observed the extent to which students relied on their feedback and endorsement on a weekly basis. The forced physical separation from the instrumental teacher during the lockdown period, revealed to the instrumental teachers that the one-to-one method of teaching had some disadvantages and served to challenge their assumptions about how students were structuring their time in between their contact hours, for example. In the interviews, several respondents reflected on how students appear to rely on mimicry, even within a remote learning context. This was problematic because of the technology but critically also illuminated the degree to which students, even at this advanced stage of their artist trajectories, continued to depend on the teacher to demonstrate an aspect of technique and/or interpretation so that they could imitate it. This approach to learning took some of the teachers by surprise because it was more prevalent than they expected. Our respondents repeatedly observed how dependent their students seemed to be on demonstration, so much so, that even when the teachers were trying to explain and narrate, this was perceived as being 'talked at' and less valuable for maintaining engagement and sustaining learning. This tendency for modelling through teacher exemplars has been critiqued by Burwell for placing the student in a passive role.[23] One of the teachers noted that "we got a lot more out of the sessions if they didn't play that much" with the focus remaining on conversation.

The role of dialogue within the one-to-one lesson acquires new meaning and becomes less about demonstrating and more about encouraging deep listening, critical reflection, and independence, opening up possibilities for repertoire coaching, career advice and structuring practice. Within the context, the teachers emerged as builders of creative capacity.[24] As a result, during lockdown teachers spoke of their attempts to encourage students to trust their instincts and to rely more on critical listening. In encouraging and empowering students to move away from such dependency, the student and teacher were able to co-create a space for collaborative input. This recognition of the need to foster an independent artistic vision was a significant finding in our interviews with teachers.

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[23] Burwell, Carey, and Bennett, 'Isolation in Studio Music Teaching'.
[24] McWilliam, Erica, 'Teaching for creativity: from sage to guide to meddler', *Asia Pacific Journal of Education*, 29:3 (2009): 281-293, https://doi.org/10.1080/02188790903092787

Revisiting old skills and learning new ones

Following on from the recognition that a more independent approach to the one-to-one context needed to be embraced, teachers also focussed on the role of the skills necessary to achieve that independence successfully. Apart from the need to digitally upskill in technology, and in the use of remote teaching platforms such as Zoom, Microsoft Teams, FaceTime, teachers found that they were looking at the music lesson from all angles – this was in the literal sense of asking students to place the camera at different angles to capture different parts of the body, but also pedagogically looking at the ways in which they could creatively capture a student's imagination to ensure their message comes across critically.

Once the technological challenges were surpassed, and both students and teachers were able to communicate verbally and using their instruments reasonably well, another unexpected insufficiency came to light. Time and again, critical reflection and active listening were mentioned as tools that teachers assume students have already acquired by the time they are at a conservatoire, and rely on, daily, in their practice. It appears however that in the perception of students, these terms have yet to be humanised and contextualised and remain ambiguous for the majority of participants in this study.[25] For example, one of the teachers notes 'what we haven't done and what we haven't encouraged the students to do enough of is to listen to themselves more critically' (Teacher M).

Not all students truly understood what critical listening to a recording meant for example, to their own performance of that same work. Critical listening with or without the guidance of teacher should enable the student to look beyond simply reproducing the performance that they hear and to think about the parameters that they need to focus on in their performance to bring their own artistic interpretation of a work to life. Herein lies the need for artistic independence, which cannot materialise unless it is consistently curated. Reflection is also a key part of learning enhancement, but unless this is practiced regularly, opportunities for artistic and intellectual growth are not maximised. Furthermore, an accomplished reflective practice leads to critical and one teacher notes how useful the integration of recording in the teaching room is because, as he puts it:

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[25] For an in-depth exploration relating to the embedding of reflection in the UK conservatoire curriculum, please see, Christina Guillaumier, "Reflections as creative process: Perspectives, challenges and practice" *Arts & Humanities in Higher Education* 2016, Vol. 15 (3-4) 353-363

> *…they're starting to think and think for themselves and also starting to listen very carefully, go back to the recording. Which is why it has been such a revelation, listening very, very carefully to what they are actually producing. And so I just keep on coming back in circles back to this recording scenario, because it really is very, very useful.*
>
> *Teacher M*

Innovative use of ways of documenting each session, using online diaries on a learning management system and a renewed focus on encouraging active and deep listening come to the fore repeatedly in our thematic analysis. In their comments, teachers observed that, due to the challenges of real-time performance and feedback in the online space, they needed to deploy very different kinds of teaching strategies to be effective. So, for example, teachers noticed that skills like deep score-reading, active listening, and critical reflection needed to be brought back to the forefront of the lesson. These skills, which teachers often assume students already have, were spotlighted in the restricted learning and teaching contexts of the pandemic. As a result, any insufficiencies that the students had in these areas, needed to be addressed before maximum benefit could be obtained from this transformed teaching context.

Communication and the learner-focussed approach

We have already noted how both students and teachers required more time in advance of their synchronous classes to prepare for their sessions. This preparation comprised both technical elements such as set-up, microphone and camera placement (if applicable) but also a clear strategy from both teacher and student surrounded the expectations of the lesson. The interviews demonstrated further concerns emerging around understanding the kind of preparation required when exploring digital and technology-driven approaches to what is normally more practical and demonstration-based teaching. The consensus among the teachers was these pedagogical affordances were only forthcoming after committed investment into creative methods and approaching the synchronous as well as asynchronous time together. So, a teacher's preparation for an instrumental lesson became two-fold and required a strategy for the synchronous online session, as well as a strategy for making effective use of time between 'in-person' lessons, time that afforded an opportunity for critical reflection of objectives and achievements of each

lesson. The increased workload, or 'digital labour', has been recognised by Abdulleva and Biassuti et al. as a major challenge when teaching online.[26]

Initially, online teaching started as a synchronous practice, where the teacher and student agree on a time for their lesson and ensure that they are both in an environment where a lesson can take place. Over time however, it became clear that teachers began to think about the possibilities of asynchronous teaching finding ways of continuing the teaching outside of their contact time with the students. This was another affordance of remote teaching. And although this practice is not new as such and has been practiced in distance learning for quite some time, to the conservatoire instrumental professor, used to seeing a student on a weekly basis, this proved to be a revelatory concept.

One-to-one teachers saw a transformation in their role from artistic mentor to facilitator, whereby the empowering and cultivation of a student's independent artistic voice became a more urgent priority. This move to a learner-focussed approach enabled a re-envisioning of the student-teacher relationship in a one-to-one context. All teachers interviewed noted that their strategies moved from demonstration to focus on technique to a task-based approach. For a one-to-one teaching context, this might be viewed as a paradigmatic shift where the traditional emphasis on the teacher's view and opinion is replaced by a co-learning approach to teaching. Within this new context, multimodal ways of teaching and learning needed to be acknowledged and would determine the effectiveness of this approach.

Underpinning these new approaches to changing shape of the one-to-one lesson is the communication. All teachers recognised the importance of communicating their expectations in advance of each lesson clearly to the students, rather than just responding in the moment to what happens in real-time performance. As one of our respondents put it, an online situation is a:

> *…much more concentrated and intense experience […] because to get through what you want to say to the student, you need to explain it at least three times more clearly than you would need to explain it in a room.*
>
> *Teacher N*

Furthermore, clear communication helps eliminate anxiety on both the part of the students and the teacher. It sets a clear framework for the lesson time and ensures that even if there were any technical disruptions, the lesson can still proceed to achieving some, if not all, of its objectives.

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[26] Biasutti, Antonini Philippe, and Schiavio, 'Assessing Teachers' Perspectives on Giving Music Lessons Remotely during the COVID-19 Lockdown Period'; Munavara Abdullaeva, 'Challenges, Experience and Efficiency of Distance Education System Introduced in Uzbekistan's State Conservatory During Pandemic', *Eurasian Music Science Journal* 2020, no. 2 (2020): 93–110, https://doi.org/10.52847/EAMSJ/vol_2020_issue_2/A2.

The transformational and disruptive nature of technological interventions within the one-to-one space requires that new techniques come into focus. Teachers collectively identified helpful tools that included deeper score-analysis (both in advance of the lesson and discussion of findings and ideas during the lesson), discussion of previously recorded work submitted in advance of the lesson along with demonstration and narrative emerged as a balanced method for creating an engaging environment. As one teacher characterises it:

> *…even though I suppose you do an awful lot of talking, because that's how I felt that the lessons were worked best when we were analysing their playing from the recordings... that used the time much better.*
>
> *Teacher M*

A challenge in integrating these components is pacing and timing, assuming reliability of the internet connection. Storytelling and narrative were always important tools in a music teacher's toolkit, but our project demonstrated that the necessity of such tools is amplified through digital platforms, which completely defamiliarizes the normal setting. Several of our respondents noted this strong emphasis on the role of description, where telling, or a reflective version of it, comes to the forefront of their teaching method. When this critical evaluation of process and product is embedded into the lesson, the discourse for evaluating self-knowledge and progress encourages independent learning. Psychological challenges included what one teacher called 'the need to calibrate our feelings, our tempo, our perception of the sound, or the amount of the sound that we deliver, of the style, of the voicing' (Teacher J).

Summary of findings from student analysis

Three key themes emerged from the analysis of student responses:

1. Student musicians and digital competencies: deconstructing the myth of the 'digital native'

2. Perfectionism and the critical lens of self-recording

3. Self-regulation and skills development

4. Future applications of technology

A fifth theme, that of co-creation, overlapped with the teacher responses and has been discussed in the previous analysis.

Students and digital competencies: deconstructing the myth of the 'digital native'

It is tempting to assume that the music students of 2020 would be well-equipped with the digital skills to navigate online teaching effectively, but this did not seem to be the case. A major theme emerging in the student participant interviews was the deconstruction of the 'digital natives' myth, which tends to assume that today's students have an innate understanding of technology and its possibilities (Prensky 2001).[27] Rather it was clear that acknowledging students' diverse experiences with technology was an important starting point for a successful digital pivot in this situation.

The student interviews illustrate the limitations of Prensky's model of 'digital natives'; that 'digital' encompasses a broad range of technologies, and that it should not be assumed that students are conversant with *all* of these. Reflecting on their digital starting points, Student C observed that they weren't 'the type of person who does a lot of things digitally', while Student B noted that their experience was 'lacking'. None of the eight student participants identified as a confident user of digital technology at the outset of the pandemic. Many of the student participants had used social media for personal use, but few had previous experience of applying technology directly to their performance studies, for instance through video-conferencing or self-recording. Prior to this period of online teaching, they tended to be general online technology *consumers* rather than users of technology for musical learning, communication, or creation. However, this position changed for all student participants, with online

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27 Marc Prensky, 'Digital Natives, Digital Immigrants Part 1', *On the Horizon* 9, no. 5 (September 2001): 1–6, https://doi.org/10.1108/10748120110424816.

lessons motivating exploration of new technological possibilities. As Student E noted, 'I didn't know the infinite possibilities that technology and online things could bring into my life'.

Most of the student participants felt immediate pressure to upskill using a range of tools for videoconferencing, audio or video recording, and media file management. Since some students (three of the eight in our sample) owned only a smartphone and not a laptop, there were significant technical limitations. Some students felt pressure to invest in higher quality equipment, such as microphones, to improve the quality of their recordings. The responses illuminated how the digital divide played out for many practice-based students during the pandemic, where some students could afford equipment to enhance their learning experience, but others could not:

> *Recording things was a challenge as well at first because they wanted us to use... if we could afford good sound systems and things like that. So I had to learn how to use Logic again, and how to balance sound things. So that was a bit of a challenge.*
>
> *Student D*

Perfectionism and the critical lens of self-recording

Most of the student participants explained how the poor sound and image quality of synchronous online (Teams or Zoom) lessons inhibited detailed 'in-the-moment' feedback on advanced musical performance. In this context, self-recording become an essential tool, even if the recordings were made using smartphones. This appeared to be a standard and straightforward use of existing technology, but it had a significant impact on students' learning experiences during this time. The recordings acted as a critical mirror on students' performance sound and image, enabling them to hear and evaluate their performances more objectively:

> *I feel like watching recordings and things, especially watching things back and hearing things back and realising how things happened over recording, not when you're playing them yourself, it makes you rethink things. And we've had quite a few classes where we would send recordings in, and then everyone would hear each other's recordings, and so comparing myself to other people, but in like quite a positive way. That's something that I've continued. […] Yeah, doing the recordings, I think, has changed my life. It sounds dramatic.*
>
> *Student G*
>
> *… this [recording yourself] was extremely important to really understand not only the way I hear myself, but how people can hear my performances too. And this is useful because you send recordings to competitions or auditions.*
>
> *Student F*
>
> *Your ears will make you hear what they want you to hear a lot of the time. Whereas on the camera, you just get what you get. So very, very difficult and irritating learning curve, but one that I've been very grateful for.*
>
> *Student D*

Hallam has identified the potential for self-recordings to provide useful visual and aural feedback on musicians' progress, noting as early as 2012 that accessible mobile technologies would open self-recording up to more students.[28] Boucher et al. also note that video feedback has been used for many years in elite sports training and offers promise in advanced musical training.[29] More recently, Zhukov identified from a study in 2015 of 189 higher music education students that nearly 50% of students were using self-recording to provide feedback.[30] Waddell and Williamon also observed the growth of self-recording among musicians, predominantly using mobile technologies, although they also noted that the majority of self-recording was taking place *outside* the formal lesson time.[31]

Participant H described their transition from initially being 'afraid' of errors in recordings to adopting a more balanced position where they were able to embrace the objective 'perspective' of their playing and use the recordings to make informed decisions on their practice:

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[28] Hallam et al., 'The Development of Practising Strategies in Young People'.
[29] Mathieu Boucher, Andrea Creech, and Francis Dubé, 'Video Feedback and the Choice of Strategies of College-Level Guitarists during Individual Practice', *Musicae Scientiae* 24, no. 4 (December 2020): 430–48, https://doi.org/10.1177/1029864918817577.
[30] Katie Zhukov, 'Exploring the Role of Technology in Instrumental Skill Development of Australian Higher Education Music Students', *Australian Journal of Music Education* 2 (November 2015): 66–77.
[31] George Waddell and Aaron Williamon, 'Technology Use and Attitudes in Music Learning', *Frontiers in ICT* 6 (31 May 2019): 11, https://doi.org/10.3389/fict.2019.00011.

> *You need another perspective. […] I think it [self-recording] has helped me because there are some things that are different, that I hear much, much stronger, for example, or much less. So to have this other perspective, and to practice more with this in mind, has helped me I think to for example, not obsess over some things that are actually not that audible in the recording and other things that I think, for example, I'm making so much dynamics already and actually, the recording it doesn't seem like it so I can exaggerate more. Such things have become more clear. And I think it has helped me in my practice.*
>
> *Student H*

This tendency for cautiousness in the early stages of musicians recording themselves is recognised by Boucher et al.[32] Blier-Carruthers also observes the way in which the lens of recording can be daunting for musicians who may focus on the way in which technical errors are captured and magnified.[33] During the pandemic, students had no choice but to persevere with their weekly recordings, however uncomfortable it was to listen to themselves in this way. Some of the student participants described how they overcame the initial *paralysis of perfectionism* by repeatedly recording themselves, ultimately leading to acceptance of their recorded self.

However, it is possible that such widespread normalisation of self-recording practices among students was contingent on lockdown conditions, which demanded an alternative to the sound quality issues of consumer videoconferencing software. A question for conservatoires is how to harness the benefits of self-recording now that in-person teaching has been reinstated. To maximise the learning benefits of self-recording, it appears that the focus should not be on the technology itself (i.e., making the highest quality recording with the best possible equipment), but on embedding self-recording as a regular, structured, and constructive core activity in instrumental and vocal teaching. This may form part of a more general move towards 'transliteracy' in the one-to-one teaching space, where students and staff develop the ability to move smoothly between a range of technology, media and contexts.[34]

Self-regulation and skills development

The requirement to submit self-recordings motivated students to structure their week differently. As Student C noted, 'I realised I had to make a change [to my preparation], just to really make sure I was really prepared for each lesson'. This involved a more methodical approach to their practice to ensure that progress would be evident in the submitted recording/s. Student B also noted that establishing a

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[32] Boucher, Creech, and Dubé, 'Video Feedback and the Choice of Strategies of College-Level Guitarists during Individual Practice'.
[33] Blier-Carruthers, 'The Influence of Recording on Performance: Classical Perspectives'.
[34] For an explanation of transliteracy, see Andrew Hugill, *The Digital Musician*, Second edition (New York ; London: Routledge, 2012), 177.

'routine' was the biggest change for them during this period, again prompted by the deadlines to submit self-recordings. The same student reflected on how this changed lesson experience led to them being 'more realistic of what I can achieve in a week's time. And also a sense of what quality playing is with my own playing. I can tell better now when I prepared well, if I sound better or not.'

The student interviews suggest that via this new routine of self-recording students developed their skills in organisation, time-management, critical listening, and self-awareness. The deadlines for submitting self-recordings before lessons or classes became anchors for individual goal setting. These goals were initially set at a macro level (for instance to learn and recording a section of a work) but were broken down into micro goals by the students themselves, who became more attuned to their recorded self and the artistic and technical insights that could be harvested from this documentation. In turn, students developed a degree of independence outside their lessons that they hadn't experienced before. This was transformation for many of the student respondents:

> *So I think it's actually sort of, not that I wasn't working hard before, but I think it's kind of kicked me into shape. Because I think it's made me manage my time more efficiently. You know, in the past, I could probably just fit my practice in, I'd do however many hours I could fit in before my lesson. But now I know I have to do this many hours' practice, but then I have to do the recording. I have more of a sort of schedule each week*
>
> *(Student G)*
>
> *It [online learning during the pandemic] just made me realise I couldn't rely on my teacher as much. I had to really try and reach where I wanted to play without my teacher's help. […] It helped me be more realistic of what I can achieve in a week's time. And also a sense of what quality playing is with my own playing. I can tell better now when I prepared well, if I sound better or not."*
>
> *(Student C)*
>
> *It [online learning during the pandemic] really helped me to see everyone's point of view, and also creating [sic] a stronger opinion about different things, creating a stronger perspective. I mean my perspective.*
>
> *(Student F)*

McPherson et al. note that a key principle of self-regulated learning (SRL) is 'the cyclical nature of the dynamic processes of forethought, performance, and self-reflection'.[35] It is possible that the self-recording process, including the planning and preparation of these recordings, led to increased emphasis on the *forethought* and *self-reflective* elements of SRL, where conventionally performance might have

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[35] Gary E. McPherson et al., 'Applying Self-Regulated Learning Microanalysis to Study Musicians' Practice', *Psychology of Music* 47, no. 1 (January 2019): 19, https://doi.org/10.1177/0305735617731614.

dominated the cycle. However, the specific relationship between self-recording and SRL remains an area for deeper and more systematic investigation.

However self-recording may not have been the only factor in the development of students' confidence and organisation skills. One student respondent highlighted that they felt pressure to take detailed notes during their lessons. Another student requested recordings of the lessons to reflect on the content again in their own time. Students appeared to view teacher feedback as particularly precious in the online environment and applied various techniques to ensure they made the most of this resource.

Students also noted changes to the structure of their lessons, observations that are mirrored in the staff responses. With limited scope to focus on technique development, there was increased emphasis on verbal dialogue rather than musical demonstration, with topics including recommended recordings and exploration of musical style, score analyses, or new repertoire. Many of the student respondents missed the immediacy of musical demonstration, however one recognised that their teacher 'put more effort in his explanations' to overcome this online barrier, again echoing the experience of staff respondents. Many students remarked on the difficulties focussing online over long durations. It was therefore common for 90-minute weekly lessons to be delivered as multiple shorter lessons on Teams or Zoom, supplemented by extensive email or telephone feedback on submitted recordings. This kind of flexibility in lesson content, format and duration was clearly prompted by the pandemic, but it represents a positive move towards student-centred teaching that need not be limited to times of lockdown.

Some of the student respondents spoke of the realisation that their teachers were feeling as vulnerable as them during the digital pivot. Student F commented that their teacher 'was very, very scared that he's not going to be able to handle all these students and all these lessons'. Another student explained that their teacher regularly asked them for help and advice with technology. Recognising the student as the 'expert' is rare in this learning dyad. This disrupted the traditional master-apprentice hierarchy leading to a more level playing field where a co-learning partnership between student and teacher was not just welcome, but necessary. This recognition that teachers were not infallible but were in fact vulnerable, human, and learners themselves is significant. This repositioning of the teacher may have led to students feeling more independent and empowered as learners. One student explained how they felt more confident structuring not just their practice, but lessons themselves, demonstrating ownership and influence in the one-to-one space:

Whereas online, I had to time myself a lot more. I've become a lot more organised because of it. […] I've also been able to manage lesson planning better within my own practice. So now with my teacher, two weeks in advance, I will explain exactly what I want to do for the next two weeks, I'll explain why I want to do it and where, what I aim to get out of those classes specifically, and if there's anyone else involved.

(Student D)

There is no doubt that the period was exceptionally challenging for advanced musicians-in-training like those at the Royal College of Music. Many of the student participants spoke of their personal struggles of loneliness and anxiety or observing their peers in distress. Set against this, it was striking to see so many of the student participants reflect on the ways in which they overcame challenges during that time. Perseverance, changed mindsets, and problem-solving were all themes that emerged during the interviews, leading to increased independence, focus, control, autonomy, organisation, and goal setting. Some student participants recognised this skills development in themselves and expressed pride in what they had achieved during such a difficult period. Despite the challenges, one participant remarked that they had learned that 'I'm prepared for life a bit better than I previously was' (Student B) and another now felt that 'everything is possible' (Student E).

In an era where all higher education institutions are seeking ways to develop student resilience, conservatoires should reflect on the ways in which these positive outcomes can be achieved through adaptations to the one-to-one teaching space, without being constrained by the conditions of the pandemic.

Beyond the pandemic: sustaining student engagement with technology

With the dominance of in-person live music experiences challenged by the pandemic, there is now even greater imperative for musicians to understand how to represent themselves and their playing effectively in audio and video recordings. It is recognised that effective artistic communication on camera requires a different performance approach and aesthetic, and video editing decisions can radically alter musical expression.[36] In addition, representing one's playing and sound accurately in recordings benefits from knowing enough about the technology to do so. Just as a musician in a live performance setting would consider elements of stagecraft, balance, projection, and their general sound in the acoustic space to present their

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[36] Thomas F. Cohen, *Playing to the Camera: Musicians and Musical Performance in Documentary Cinema*, Nonfictions (London ; New York: Wallflower, 2012).

optimal performance, the digital domain brings its own performance considerations.[37] To succeed artistically in the digital world, digital knowledge and technical skill is now essential for artists-in-training.[38]

In this study, the student respondents all recognised that online technologies provided an essential tool for sustaining their musical learning during the pandemic. However in the concluding questions of the interviews students were prompted to reflect further on their experience and identify what they might take forward into the future. Here six of the eight students recognised the long-term importance of digital technologies for their learning and future careers outside exceptional 'emergency' periods like the pandemic. Being forced into a radically new relationship with technology during the pandemic in turn led them to understand that 'the relationship between musicians and technologies is far more complex than an active-passive binary.'[39] The students identified affordances of online and recording technology including remote access to new artists and teachers, developing the skills to create high-quality audition videos, and self-evaluation through self-recordings:

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[37] Mark Slater, 'Performing in the Studio', in *The Oxford Handbook of Music Performance, Volume 1*, by Mark Slater, ed. Gary E. McPherson (Oxford University Press, 2022), 509–27, https://doi.org/10.1093/oxfordhb/9780190056285.013.31.
[38] Bennett, *Understanding the Classical Music Profession*; Helen Julia Minors et al., 'Mapping Trends and Framing Issues in Higher Music Education: Changing Minds/Changing Practices', *London Review of Education*, 15 November 2017, https://doi.org/10.18546/LRE.15.3.09.
[39] Slater, 'Performing in the Studio', 525.

it would make me more inclined to sign up to online master classes. I guess that always happened, there's always been online courses and online master classes and things. But in the past, I would have thought, 'Well, if I want to listen to something online, it's not going to be as good or...', but now I think I would be happy even paying for something... like if it was an amazing flute player from somewhere in America or something I would pay to listen to them. Because I know that the technology actually does work. It's kind of worthwhile.

(Student G)

I think that my opinion has changed in this respect, that we should all be flexible to change to online when needed. And yes, and embrace it and make the best of it.

(Student H)

Another highlight... I mean, getting a chance to work online with technology and singing, I think is great. I've learned how to record myself, that's been a highlight of online teaching. I wouldn't be able to do that. I wouldn't be able to produce my own recordings and balance them out or edit them. I wouldn't know how to do that. It's also taught me how to use social media to promote my work. As a musician, I think that's such a vital skill. Of course, we have the... what are they called in college? Careers is great, careers is fantastic. But there's almost something even better about having learned it by myself through this lockdown, just being able to do it by myself and go, 'Oh, yeah, that's how I promote my work. That's how I share things in a safe manner as well'. Yeah. So I think those would be my highlights.

(Student D)

So it's just been much, much broader and given me a much broader outlook on music, which has been really nice. Now we have choices, we can do community classes, I do one online every Friday, with a local community just on Zoom. It's just overcome because you know, I had to give it a go, I had to get over the problem."

(Student B)

I didn't know the infinite possibilities that technology and online things could bring into my life. [...] So I will carry on recording myself. I think it's one of the things I value the most now.

(Student E)

However, it may only have been participation in this research that prompted this reflection and recognition of the affordances of engaging with technology outside a pandemic context. This suggests that, despite many decades of exploration of online instrumental and vocal teaching, there is still a gap institutionally to promote and normalise technologies in the institutional culture. Since the one-to-one lesson is a such an influential space for learning in the conservatoire, it provides an ideal space for nurturing technological fluency in performance. To activate this, Johnson notes that 'openness towards more online collaborative learning tasks in traditionally

apprenticeship-dominated pedagogical approaches may require additional institutional supports that focus on developing and sustaining an innovative pedagogical mindset.'[40] In short, a whole-institution approach to staff development is required to transfer the most productive elements of digital learning during the pandemic into a 'new normal'.

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[40] Johnson, 'Teaching Music Online', 452.

Towards a framework for digitally-enhanced one-to-one teaching in the conservatoire

During this research we observed that the online experience of students and staff led them to view the one-to-one IVT environment, relationships, and communication from new perspectives. The teaching conditions during the pandemic introduced new responsibilities for both teachers and students, who adapted in myriad ways to make an unprecedented situation work. For students, the emphasis on self-directed recording led to unexpected changes in the organisation of their practice and a normalisation of digital recording practices for self-evaluation. For staff, disruption to the established format of modelling and demonstration in lessons led to intensification of their workload, but also the exploration of new models of teaching, drawing upon listening, dialogue, and musical analysis. Analysis of student and staff responses reveals new and divergent approaches in the one-to-one teaching space, but there is a risk of these newfound affordances being short-lived as conservatoires return to in-person delivery of teaching.

It is clear, even from such a focussed project, that the one-to-one teaching space is ready for change, in particular the way we conceptualise the role of the teacher and student as co-learners. The time has come, and an opportunity has been dramatically afforded us to move beyond the basic technical discussion of online synchronous teaching in IVT, to recognise the limitations of platforms and expand the definition of 'digital' to encompass a broader range of tools. Especially important is the integration of a broader approach to encompass the time spent in the lesson, and the time in between. Do all students require weekly lessons for example? In the case of students operating at the highest artistic level at a conservatoire, this may not be necessary. The evidence also points to the need for further upskilling for both teacher and students. Both need to learn how to use the technology, but more critically, both need to work together to strategize their time in and out of lessons, and to think about how active listening and critical thinking can improve their artistry. It may be the case that one-to-one tuition might be more agile in future, to enable both staff and teachers to take on professional activities which might include tours and require leaves of absences from the physical presence.

With that in mind, we set out below a framework for recognising and developing these affordances in a progressive and blended approach to IVT. This extends the research findings in this project, including the role of structured self-recording, student-teacher dialogue, and co-learning to identify a set of principles for staff development. However, it is recognised that staff development is only successful where there are institutional structures and strategy that reinforce a digitally progressive learning and teaching culture. As such, this framework recognises a set of renewed responsibilities for teaching staff, students, and institutions to contribute

to a culture where transliteracy across traditional and digital domains is a cornerstone of effective conservatoire pedagogy.[41]

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[41] Hugill, *The Digital Musician*.

Towards digitally-enhanced one-to-one teaching in the conservatoire: a framework of responsibilities
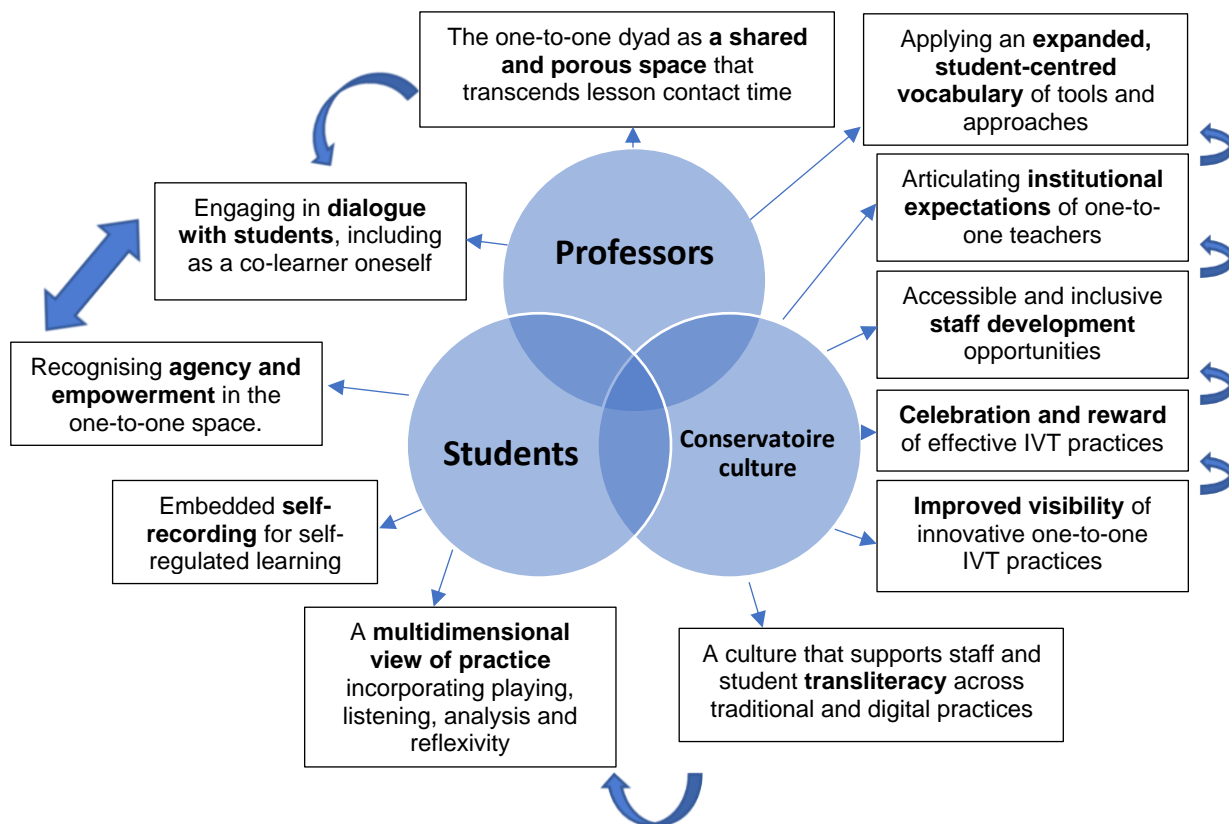
The above framework outlines the responsibilities of staff and students to contribute to a reimagined one-to-one teaching space, but change is only achievable in an institutional context where there is a commitment, both philosophically and practically, in an institution-wide programme of staff development that is aligned to progressive curriculum strategy. As Burwell et al. have observed, 'it seems that many institutions of higher education – taking for granted that the high level of performance expertise among staff is sufficient to ensure excellence in teaching – have done little to support the professional development of studio teachers, or to facilitate collaboration among them'.[42] Surely then the post-pandemic era marks an opportunity to address this vital gap, and in doing so to evolve IVT in ways suited to today's higher education learners and the needs of the 21st Century music profession.

Looking ahead, potential areas for future research include specific examination of student self-recording as a catalyst for self-regulated learning, and a follow-up study in three to five years to compare blended approaches in one-to-one IVT across UK conservatoires and evaluate the impact of staff development initiatives in this area.

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[42] Burwell, Carey, and Bennett, 'Isolation in Studio Music Teaching', 19.

Interim findings of this research project were presented at the Association for European Conservatoires Annual Congress in Antwerp, November 2021. The major research output will be a chapter in 'Inside the Contemporary Conservatoire: Critical Perspectives from the Royal College of Music', an edited volume to be published by Routledge in 2023.

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