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Mónika Benedek

Online or Offline? Developing a pilot blended instruction for ear-training at Finnish university

Background of research

Ear-training and music theory are generally integral parts of the curriculum in higher music education and are traditionally taught in offline group settings. The importance of these subjects is indisputable in professional levels of music trainings, as aural skills and practical music theory knowledge are essential skills for future music teachers, musicologist and music therapists. Therefore, these musical skills persistently should be trained. The traditional, face-to-face, offline ear-training instruction in which learners are at the same location, could be approached from many angles. As it is expected that students have already these skills at certain levels when entering the universities, the main emphasise at advanced level could be, for instance on live musical activities such as singing-playing and improvising together, sight-reading, music theory or learning certain elements of music by ear. Stylistic differences may also influence ear-training pedagogy, since Western classical music education nowadays still prioritise notation-based skills, in contrast to popular, jazz and vernacular music training in which ear-learning and improvisation are more in focus (Benedek 2015; Creech et al. 2008; Green 2002).

At the same time, new types of pedagogical models gradually influenced on music education over the past decades. Online, virtual, information technology-based or mediated learning strategies offer flexibility, independence and mobility for both the instructor and the learner. Moreover, many of these online learning platforms are able to reach large number of learners such as the MOOC.

Distant-learning supported with communication technology is used in various ways nowadays in music education. For instance, Dezuanni et al. (2015) intended to develop music teacher education by testing a 'remote musical professional development workshop' as pedagogical tool broadcasted from the Sydney Opera House and observed promising interactions from both mentors and students at the online rehearsals. Dye (2016) and Pike (2017) investigated the applicability of videoconference as learning platform in online instrument instruction and both of them reported on high degree of focus from students. However, Dye (2016) did not find desktop videoconference the most effective to substitute face-to face wind-instrument lessons, as both students and teachers spent more time with conversations than with real musical activities. Meanwhile, Pike (2017) was satisfied with using Internet MIDI as synchronous online environment for teaching piano. Moodle platform (open-source free software learning management system) seemed to have been also appropriate virtual environment for collaborative online music composition activities that allowed participants both interact with each other and work independently (Biasutti 2018). Furthermore, iSCORE was found as an effective online learning by Brook and Upitis (2014), as it supported independent teaching and learning in one-to-one instrumental and voice lessons in particular in improvisation and composition activities, however, in this case the interaction between students and teacher happened on the offline lessons.

Blended learning (synonymous with hybrid, web-enhanced and mixed mode e-learning) is a modern learning approach, which is described as the combination of

traditional face-to face and virtual learning (Williams 2002). Graham (2006) described the rates of online and offline parts in blended instruction around 60 % and 40%, whereas others like Smith and Kurthen (2007) follows other definitions by which the online elements should take less than 45% of the whole, otherwise it is called 'hybrid' in which the online part of instruction shifts between 45% and 80% of the whole. Nevertheless, blended learning has a potential to incorporate the most efficient elements from both offline and online pedagogy (Vaughan 2007).

Blended instruction recently has also received noteworthy attention within higher music education, as it has found to be a highly student-centred, non-linear approach to teaching and learning, which gives the student flexibility to learn the material in their own pace and to practice the concepts as many times is needed (Crawford 2017, 198–199; Grant 2013, 6; Vaughan 2007, 91).

With regard to aural skills and music theory, further advantages of blended instruction were examined among others by Adileh (2012) such as fostering high degree of focus, enhancing independent thinking and learning, motivating for learners. Furthermore, it is widely believed that blended learning is economical for the institution, the learners and teachers (Adileh 2012; Crawford 2017; Grant 2013).

Interactive technological applications like e-Auralbook can also increase the effectiveness of blended learning by which teachers are able to monitor students' individual learning (Chen 2015). In Finland, Ruokonen and Ruismäki (2016) employed blended instruction for composition projects in teacher education via the 'Rockway' online learning platform. The researchers also recognised that blended approach is motivating, creative, constructive and powerful learning strategy that increases cooperation between learners.

There is a relative lack of research and educational programme in higher music education which investigate the applicability of blended learning for ear-training and music theory. Informed by prior research, the current pilot research intended to respond to this need.

The aim of research

The main aim of pilot research was to test and develop a blended ear-training instruction for university students at bachelor level as it was important to provide an accessible ear-training equally to everyone who will be either performing musician, music teacher, musicologist or music therapist. Since the blended training included not only face-to-face offline contact lessons but also an online instruction, the research also aimed to determine the ideal amount of workload in each part of the training (offline and online) and to develop the course material and pedagogical approaches to it. Furthermore, the teacher-researcher intended to improve the online learning platform for ear-training.

Methodology

The research methodology of this pilot research could be described as an action research (or practitioner research) as the data collection was executed through a teaching course of which the content was developed by the teacher-researcher together with the students-participants weekly (Bannan 2004; Cain 2008; Herr & Anderson 2005). Action research may consist of several cyclical stages such as planning, identifying the problem, acting, observing and analysing, and reflecting on and interpreting the findings, which together form a spiral of progress for as long as required. In each cycle, a new development to be tested similar ways. The results from this pilot research are fed into the plan for the next cycle of research and so on as the methodology allows the researcher to conduct as many

research cycles as required to resolve the problem together with the participants (Bannan 2004, 295; Herr & Anderson 2005, 4).

Data collection

In September 2018, the pilot blended Ear-training course was introduced at the Department of Music, Art and Cultural Studies of the University of Jyväskylä in Finland. The course run for ten weeks with nine students volunteered for it. After successful completion of the course, students received 2 ECTS credits. Students came from Music Knowledge, Music Education and Musicology Bachelor programmes. The pilot instruction consisted of 90 minutes offline (face-to face) group lessons each week and an online learning platform in the university's Moodle. Students were expected to spend learning the online material approximately for 90 minutes each week.

Course material

The course material focused on the basics of music theory and musical examples were selected mainly from the Viennese Classical period in order to develop students' aural skills together with their stylistic and theoretical knowledge and musical form. Few musical examples were also included from the Baroque and Early Romantic eras either for demonstrating the evolution of certain stylistic features or for comparison of similar musical phenomena in wider context.

Providing comprehensive musicianship training, activities in group lesson were singing and playing the keyboard, learning by ear and from score, applying music theory in practice such as into keyboard harmony and group improvisation. Meanwhile, the online material focused mostly on listening to various interpretations and arrangements of certain musical examples (from audio, video files and from the YouTube), aural and score analysis, writing tasks such as completing and composing various parts and voices of musical examples, harmonic progressions, keyboard harmony, arrangements, transcribing musical excerpts in two- and three-parts both from recordings of real musical interpretations and from piano reductions played by the teacher, moreover, singing and playing-along and improvising with the recording and score. Furthermore, students could watch video lectures made by the teacher-research that enabled them to understand better the current topic and deepen into those issues that required explanations in more detail.

The content of course, the various ear-training exercises were improved weekly along with the students' written feedback provided each week in the 'forum' module of Moodle. Furthermore, students needed to complete short assignments weekly, mostly transcription tasks in various levels. Solutions of assignments could either be checked by the students themselves or could be sent to the teacher-researcher for review.

Technical facilities

Sibelius notation software was used to create musical files of the musical examples in both written score formats and video formats. Screen Capture HD Video programme was used to experiment with various 'scrolling score video' recordings made of the Sibelius video files and scores in Pdf, as well as smartphone was used to record the teacher-researcher's video lectures. It is important to note that since the pilot research received moderate funding for such short period of conducting the research and collecting data from the teaching course, all technical execution was planned and made by the teacher-researcher herself on her own laptop and smartphone at the university's lecture rooms and studio.

Data analysis

Students needed to answer for few feedback questions about the course content at the 'forum' mode of Moodle each week of the instruction. The questions in general were

applied to the online learning platform, but students were encouraged to comment on the activities and material of offline lessons as well. Feedback questions varied over the course, especially when significant changes happened in the online learning platform (e.g. new tasks, new pedagogical approaches, improvements in layout and content appeared). Recurring feedback questions were, among others as follows:

- How much time did the students need to spend on each task and the whole (online) lesson?
- Which tasks did the students found the most challenging to complete online and why?
- Which tasks did the students found useful for developing their musical skills (online)?
- In which skills/tasks did the students feel development weekly and over the whole course?
- Which tasks the students needed to practice more and more and why?
- How the weekly developed online-tasks (e.g. video lecture, transcription, sing-along, play-along, improvisation) and new layouts of online platform helped students in learning?

Students' written comments of the course content provided together with the teacher-researcher's offline and online teaching experiences were analysed qualitatively each week of the instruction (Atkinson & Delamont 2010). Findings emerged from students' written data were compared to the teacher-researcher's views and after carefully consideration, adjustments were made in the content of both online and offline parts of the course.

According to the action research methodology paradigm, each week a new cycle of research evolved presenting a new 'problem' (new tasks, activities, material) which were tested by 'acting' (lessons offline and online), observed and analysed (students' feedback and teacher-researcher's experiences), and finally reflections (adjustments in course content) were made.

Findings

Students' feedback—preferred content of course

Based on the students' weekly comments provided in the forum mode of Moodle, the following findings emerged. Students appeared to be motivated to learn ear-training partly online as a part of the blended programme, since many of the exercises could be practiced on mobile devices saving time for other live musical activities for the group lessons. It is important to note, however, that these reasons did not mean to underestimate the value of ear-training as an individual subject itself traditionally taught offline. On the contrary, online learning platform simply helped students to practice ear-training more independently following their individual learning needs.

Students generally found those ear-training tasks the most useful to learn online that combined listening, singing, singing and playing an instrument, keyboard harmony and, in particular, singing-along with the recording and musical score. They reported that the clearer and more detailed instructions of the tasks were very useful for understanding the online material. The massive amount of live musical examples supported by audio recordings, YouTube videos, the teacher's video lectures and audio recordings for transcriptions, scores of musical exerts and exercises made of Sibelius notation software and public domain scores from IMSLP all contributed to the efficiency of their individual learning.

Students found various exercises such as listening, sing-and-play and sing-along/play-along with the recording and score the most beneficial to improve their aural skills

(Benedek 2015, 2018). Sequenced approach to transcription (Benedek & Stachó, unpublished) was also highlighted as helpful technique in students' feedback. They also enjoyed the sequenced approach to variation-improvisation (Benedek 2018) and 'listening while singing canon' when students had to follow and sing back an unknown canon in two parts simultaneously with the teacher playing the piano (Benedek & Vinden 2015). This latter one was especially popular in the offline group lessons, but online lessons also included video files for similar purposes, in particular during the first weeks of the instruction.

Finally, students appreciated the developed online learning platform, in particular the new layouts for the transcription tasks when all musical scores and audio files could be found on one page by reducing the clicks on score and audio files to the minimum. Moreover, the simplified layout enabled students to see the solutions for transcriptions on pages of the online lecture by avoiding necessary downloading of score files. Practicing musical transcription online was itself welcomed, instead of practicing it on the offline group lessons, as this way much time could be saved for the group improvisation and canon-singing task.

Challenges—students' reports and teacher-researcher's observations

Since the pilot research on this stage did not aim to measure students' individual development of aural skills and music theory knowledge, the responses for feedback questions such as nos. 2. and 5. and the teacher-researcher own teaching experiences at the group lessons provided her hints and ideas which topics and exercises needed to put more emphasis on during the subsequent lessons.

Interestingly, most students repeatedly reported that they had difficulty to recognize the functional bass notes from the recordings on the online platform, especially from the live recordings when learning functions (Tonic, Dominant and Subdominant) and the related chords such as II6 and the inversions of V7. At the same time, during the first half of the course, the teacher recognized that most of them had difficulty to identify and sing back these elements on the group lessons as well, even from the piano. Later it seemed to be clear that, regardless of the levels of music theory, most students were not used to listen to these elements from these kinds of arrangements and orchestrations of live musical examples, such as classical symphony, opera or chamber music. Most of them explained the novelty of these exercises in their written feedback in accordance with the teacher-researcher's observations.

Few of them reported on their challenges to play certain tasks on the piano since this was not their first instrument. At the same time, already at the beginning of the course, transcribing and singing-along the recording seemed to have been also difficult for some of the students to execute without the help of instrument (e.g. keyboard). Keyboard harmony tasks appeared to have been beneficial to them to practice not only online, but also on the group lessons allowing them to have more opportunity to ask and clarify techniques of voice leading by receiving instant feedback from the teacher.

Since most of these students learnt classical music earlier in their music education, regardless of playing classical music recently, they did not learn classical music theory via ear-training in such particular way. Nevertheless, most of the students noted that they needed to spent less and less time on the whole lecture and on each task week by week. Listening and transcription were highlighted as principal skills have been improved in terms of time-span to complete (see feedback question no. 4).

Developing the online learning platform and content of course

During first seven weeks of the pilot course numerous small developments were made especially in the content of the online part of course. At first, the amount of material was

adjusted to the required 90 minutes of online learning, meant that the material was slightly decreased in each week compared to the first week's massive amount of material uploaded in Moodle. Since the students came from different musical background and levels of study and majores of music, it was challenging to estimate the ideal workload for online-learning in balance with the offline lessons (see also in Grant 2013, 9). Moreover, since the researcher was as not able to monitor how much time exactly did the students spend learning online each week (she only could see the students' last date of log in the Moodle), she had to rely on her knowledge, teaching experiences, her observations during the group lessons and the students' reports in this regard.

Students also commented on what kind of tasks they found very beneficial for their aural skill development each week e.g. listening to and singing and playing-along with various recordings, singing and playing different musical material, keyboard harmony and transcription. These were compared with the teacher-researcher's observations and after careful consideration, some of these tasks became the core content of the forthcoming weeks' online lessons. However, those tasks were still kept in the online platform which was found to be useful to the students, regardless of their opinion.

Technical challenges to develop certain tools for online tasks such as 'scrolling score videos' and 'sing-along videos' without especial IT support also occurred. Since 'blended model allows the teacher an ongoing opportunity to experiment with new approaches to learning and new types of educational technology (see also in Vaughan 2007, 87), the teacher-researcher also wished to develop the quality of sound of the videos, implement the online course material into the Moodle platform faster and improving the layout of the online platform by avoiding the unnecessary clicks. From the 5t^{h} lesson, video presentations were made to supplement the online lectures enhancing students' understanding of the new topic. Students generally found these videos very useful in their learning process as they fostered grasping the material of both online and offline lectures. Comments from Moodle also reported on the helpfulness of video presentations about transcription techniques. At the 7th lesson a new layout was chosen in Moodle in order to compose the online lectures better and compact in look and to demonstrate the material and musical tasks more coherently and efficiently.

Limitations of pilot research

The dilemma of avoiding bias and subjectivity in validating findings from students' comments and the teacher-researcher's own professional experiences as well as enhancing the trustworthiness of research were solved by involving critical self-reflexivity into the research process (Herr & Anderson 2005, 60). Generalisation of the findings, however, was made cautiously, since data was collected only from a small number of student participants. Furthermore, as it was mentioned earlier, the teacher-researcher neither was able to monitor how much time did the students spend learning online each week, nor what kind of tasks they practiced more, nor measuring their skill development they made exclusively online and offline. Nevertheless, the teacher-researcher observed a general development of musical skills of students each week of the offline group lessons and positive attitudes towards learning ear-training via a blended instruction that resonated with findings from earlier research (Crawford 2017, 204; Vaughan 2007, 84).

Another limitation of pilot research was the lack of data about students' comments on the opinions of their peers. However, the initial aim of choosing forum mode of Moodle was to encourage students to use it as a blog for group interactions and discussions about their successes and challenges in learning which is one of the key features of blended-learning (Crawford 2017, 198-200; Grant 2013, 9). Despite of this incompleteness, students' written comments together with the teacher-researcher's experiences provided

sufficient data for qualitative analysis. Nevertheless, the action research methodology could have been applied in more elaborated way in this respect.

Conclusions and recommendation for further research

In-line with the twenty-first century's pedagogical tendencies using digitalized and virtual learning platform in learning musical subjects, the blended ear-training instruction appeared to have a potential to the develop of students' aural skills, musical literacy and music theory knowledge in an effective and economical manner. Therefore, blended instruction may be an ideal teaching strategy for ear-training at the music programmes of universities since the individual online learning platform provides flexibility to adult students to develop their musicianship skills individually (Vaughan 2007). At the same time, traditional offline group lessons still provide more social interaction in ear-training, and would allow them to spend more time with live musical activities such as group singing, playing and improvisation, which altogether with the flexible and mobile online learning platform can make the learning meaningful (Crawford 2017, 198).

There are still issues that could be developed further in both blended instruction and research. Technical issues may include 1) considering to use other software, mobile application or online tool that enable students to interact and collaborate with each other (Biasutti 2018), 2) making available the current week's online material before the group lesson in order to familiarize students with the actual topic, similar to the 'flipped' or 'inverted classroom' approach (Grant 2013, 7), 3) using video / audio recording for the online assignments, 4) motivating students to use the forum mode in Moodle as a blog for group discussion about the progress of learning, and 5) employing other strategies to induce students to share their views with other students in the class more actively (Grant 2013, 7).

The next phase of research could focus on measuring students' aural skill and music theory development, for instance via online quizzes. In addition, students could be also requested to fill out a questionnaire form about their previous music education and musical interest at the beginning and at the end of course. This way the teacher-researcher would be able to relate students' development to their background knowledge and musical skills. Video recordings could also collect data from the offline group lessons about certain musical tasks and students' learning progress.

Mixed methods (Mason 2006), therefore, can be used for research methodology since it includes both quantitative (Coolican 2009) and qualitative research techniques (Atkinson & Delamont 2010). Qualitative content analysis method can be used to evaluate qualitative data sources, such as transcribed texts from video recordings, teachers' observation notes on the development of students' musical development, students' questionnaire and written feedback given online. Meanwhile, numerical data from ear-training tests completed on the online platform can be analysed statistically.

There is also a wide range of applicability of the outcomes of research into other areas in music science, for instance musicology, cognitive music sciences and music therapy. Also, blended ear-training may be used with other musical styles, thus music practitioners, teachers and researchers from other musical professional areas would also benefit of this kind of instruction. ■

Keywords: blended-learning, ear-training, higher music education, online-learning, pilot research

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