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Developing the ability to perform: Investigating the field of higher education and expertise development for learning and performing the double bass

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The aim of the present study was to find out if there were significant differences between the learning student, the supervising professor, and the expert performer working in a symphony orchestra regarding the development of their ability to perform. Survey results demonstrate that all groups showed a secure level of understanding of the concepts of deliberate practice and self-awareness, while those of metacognition were practically unknown. While students reported the most practice of all groups, they rarely record themselves or use computer technology. All participants were highly supported by their parents especially at the time when they decided to become a professional. The instrumental diversity of size, *scordatura*, playing postures or bowing schools was seen as an advantage rather than a disadvantage, overruling statements of previously undertaken research. The study highlights the importance of early pre-professional learning for the university student.

Keywords: double bass; skill; practice; pre-professional learning; expert performance

Over the past decade, researchers have taken numerous approaches to studying how musicians acquire and refine their skills as performers (e.g. Hallam 1997, Jørgensen 2000). While many of these studies have provided

new perspectives on instrumental learning (e.g. Hallam 1997), it remains unknown whether the findings found their way back to benefit the population (Bastian 1998). What has been noticed is that the results of studio research only very slowly establish themselves as the "learning to learn" concepts to "professional practice" in higher education (Pertzborn 2007). If these links remain disconnected to instrumental practice, they may not give the student the means to achieve maximum proficiency. However, and also in some way confirmed in this investigation, most double bass students are still advised to study from method books published in the nineteenth century. It seems somehow awkward that more recent method books have excluded an in-depth exploration of the processes of skill acquisition as guidelines to professional instrumental practice.

METHOD

Participants

Fourteen professors (PROF), 82 students (STUD) from 13 universities, 33 double bassists (ORCH) from 7 symphony orchestras representing seven countries in three continents, participated in the DAP survey (see Figure 1). Principals from symphony orchestras collaborated in handing out the questionnaires to their section colleagues, and university professors to their students, as well as sending back the completed questionnaires. The total number of participants was 129; the response rate was 85%.

Materials

Together with the empirical approach adapted to this study, literature was reviewed comprising the areas of (1) the learner and (2) the instrument. The first part focused on practice, expertise, task requirements, and biographical issues. A second part reviewed the history of the double bass, its performer, and their influences on the development of expertise of the instrument and its role in the repertoire. Many of the findings that came out of the historical review—such as the diversity of at least two bow schools, different playing postures and tunings—are still subject to controversial discussion today. These concerns were included in the survey to examine the impact of history and tradition on the present generation. The blueprint of the survey (see Figure 2) was based on a multidimensional learning model to instrumental practice conceived by Hallam (1997).

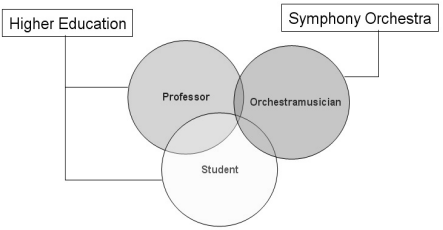

Figure 1. Field of investigation and groups of participants.

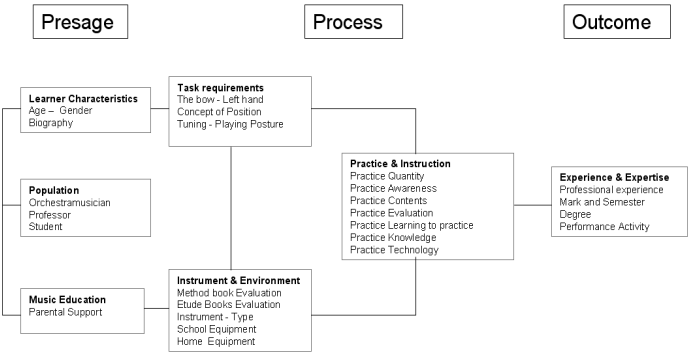

Figure 2. Blueprint of the DAP survey.

Thirty-four questions were organized in presage, process, and outcome factors, assembling a wide range of topics: learner characteristics, population, music education, task requirements, environment and instrument, processes of practice, performance experience and expertise, methods, biographic information, professional experience, health and wellbeing, and lifestyle. Four different types of responding were used: (1) rating from 1-5, (2) multiple choice, (3) selecting between yes/no/rarely, and (4) numeric indication of, for example, "years of playing." Five open-ended questions were used to assemble individual opinions or different views. The surveys were translated to English, German, and Portuguese.

Procedure

The data collected from the survey were processed through the statistical program SPSS 17.0, taking into account the most adequate statistical tech-

nique to the involved variables. The data were organized according to the nature of variables, most of them qualitative and descriptive techniques. Principal component analysis was used to reduce the dimensionality and to identify profiles considering biography, education, etc. To compare the results, parametric Analysis of Variance (ANOVA) or non parametric Kruskal Wallis techniques were used. For the other topics, some independent chi-squared tests were performed to evaluate the association between the different groups of PROF, ORCH, and STUD and the correspondent item. The decision rule used to detect significant statistical evidence was a probability (p) value less than 0.05. In addition, the survey provided 204 individual comments to open-ended questions which were assembled for further discussion according to the topics and group of population.

RESULTS

Results from the survey revealed that the double bass is still a male dominated instrument. Male participants were dominant in the group of the PROF (79%), STUD (72%), and ORCH (100%). No female orchestra bassist participated in the survey. The mean age of PROF was 50 years male and 41 years female, ORCH 41 years (only male), and STUD 23 years male and 21 years female. The average age for starting the double bass for all groups was between 14-15 years. However, the starting age ranged from 3-20 years. A high percentage of all groups previously gained experience on other instruments, which they learned for 4-7 years before moving to the double bass at the age of 13-15. The late and most diverse starting age reveals a relative inconsistency when comparing to other instruments such as the violin. These findings confirm those from a similar study undertaken by Langner (2003).

The majority of the ORCH group (52%) practices regularly only when they have important performances, while this is done less by PROF (36%) and STUD (25%). This may be because PROF and STUD have a different time frame to build up repertoire in advance. They may also have more freedom in choosing their repertoire, while the ORCH group normally has to deal with an intense and pre-given performance schedule. Additional comments were made on these issues, which confirm these views. The PROF (78%) and ORCH (76%) reported that they practice between 1-3 hours daily, while this was assumed by 60% of the STUD; 35% of STUD reported practicing 4-6 hours per day. In all groups, between 54-67% of the participants tended to maintain a practice free day through the week. STUD (73%), unlike PROF and ORCH (38%), consider studying *etudes* as a key point of their practice. The landscape of “practice contents” was fairly even and consistent in all groups

and showed a high percentage in "learning new repertoire," "maintaining or re-learning already performed material," "maintaining or improving technical issues," and "preparing performance."

PROF obtained the highest scores for factual knowledge of practice issues (80-100%), followed by ORCH (50-85%), and STUD (35-84%), with the exception of the concepts of metacognition. Here, the groups PROF (58%), ORCH (50%), and STUD (64%) reported that they were not familiar with these concepts. This fact may well indicate that concepts of practice are widely known to most of the participants and that topics of instrumental research have the potential to find their way back to the practicing musician. Only a minority of all groups recorded themselves on audio: PROF (43%), ORCH (18%), and STUD (30%). The usage of video was still much lower than the usage of audio: PROF (21%), ORCH (14%), and STUD (7%). The usage of computer software as a practice aid was indicated by PROF (50%), ORCH (26%), and STUD (20%). A much lower score was attained for the usage of MIDI accompaniment: PROF (29%), ORCH (11%), and STUD (25%). These results illustrate a low rate of usage of audio, video, and computer technology in all groups. In the century of almost unlimited access to recording and music technology, one may have expected a higher usage of these media. Listening to CD audio recordings and instructional DVDs received a higher score of appreciation: PROF (57% for DVD, 71% for CD), ORCH (44% for DVD, 59% for CD), and STUD (35% for DVD, 69 % for CD). It is noted that CD recordings received a higher score than DVDs.

Indications on lifestyle revealed that all groups highly enjoyed their profession as a double bassist (95-100%). Nevertheless, ORCH (48%), STUD (27%), and PROF (22%) already thought at some point in their careers about doing something else. The PROF was the most active in performing sports regularly, while the ORCH and the STUD showed less activity in this domain. In addition to this, 43% of the PROF, 32% of the ORCH, and 19% of the STUD reported to have another professional qualification, activity, or expertise.

DISCUSSION

Results of this study revealed a strong relation and influence between teachers and their students. The group of the PROF was the most experienced in all performance domains and had also the highest academic qualification when compared to the ORCH and the STUD. The latter, however, seemed to follow their PROF in being active in all domains, although professional opportunities such as performing in festivals are yet rather more limited for them. Early instrumental learning on the double bass has been identified as one of the

potential key factors to a prospective professional career. This has obvious implications in early learning methodologies and in providing adequate instruments for the young learner. The low use of technology, while making such a high investment of practice time to achieve a competitive level of performance, is a second point that needs further investigation. The proposal is that a wider perspective of learning, practice, and self-evaluation in combination with the use of technology as a support for practice and feedback should be taken into account to form efficient venues to move forward on the road to excellence for the double bass. By providing better and more challenging concepts to expertise and (early) instrumental learning, future generations of double bassists may breakdown more rapidly the technical barriers of the instrument and will use the whole range of the instrument as an advantage rather than a limitation.

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