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Recent Research in Applied Studio Instruction: Practice Time and Strategies

By Kelly A. Parkes

In his 2002 chapter, *Systematic Research in Studio Instruction in Music* Richard Kennell reviewed and summarized major research efforts for the applied studio setting. Over the past decade, a renewed interest in the applied studio has become apparent in a line of investigative inquiry pursued by researchers. The purpose of this second paper, in what has now become a three-part series, is to highlight recent research in the area of practice across an international platform.

Kennell (2002) reviews research from within several broad categories: the roles of student and teacher, their behaviors, their interactions, and evaluation. Research undertaken in the 21st century can still be grouped loosely into these categories, which for the purposes of this series have been clustered into three papers. The first paper (Parkes, 2009) examines characteristics of the applied setting (Burwell, 2006; Colprit, 2000; Duke, 1999/2000; Duke & Simmons, 2006; Fredrickson, 2007; Gaunt, 2008; Kurkul, 2007; Laukka, 2004; Mills & Smith, 2003). The current paper will focus on the use of practice in the applied studio (Barry & Hallam, 2002; Byo & Cassidy, 2008; Jorgensen, 2002; Jorgensen & Lehmann, 1997; Kostka, 2002; Lehmann, Slodoba, & Woody, 2007; Madsen, 2004; Maynard, 2006; Miksza, 2006; Nielsen, 2001 and 2008). The third, and final paper, is planned to examine a third cluster of research in the use of evaluation in the applied studio (Bergee, 2003; Bergee & Cecconi-Roberts, 2002; Oberlander, 2000; Author, 2006, 2008a, 2008b). Additionally, several authors (Bennett & Stanberg, 2006; Jorgensen, 2000; Parncutt, 2007; Sinsabaugh, 2007) have recently highlighted a more collaborative approach to the current modus operandi of the applied studio and there has been particular interest (Author, 2009a; Wexler, 2008) in the dual roles that applied teachers undertake as performers and teachers which will be explored in the third paper in this series. The current paper will examine recent research regarding the use of practice time and practice strategies in the setting of the studios of applied teachers and recommendations for future research will be discussed.

Overview

Practice has been examined in the applied studio since the early 1990s (Barry & McArthur, 1994) and was summarized with great detail in 1997 (Jorgensen & Lehmann, 1997). Recently there has been more interest in the nature of practice in high school age students (Byo, 2004; Hewitt, 2001; Rife, Shnek, Lauby, & Lapidus, 2001; Rohwer & Polk, 2006). It has perhaps been tacitly presumed that once students get to college, they have the necessary skills to regulate their practice and find appropriate strategies on their own for the maximum benefit to their performance achievement. Barry and McArthur (1994) originally found that while college teachers always, or almost always, discuss practice with their students, there was no real agreement about specific procedures and instructions about practicing. More recent inquiry into practice strategies and practice time at the college level has improved our understanding of the role practice plays in the applied setting and also raises some new issues to consider for future research.

It is accepted that the acquisition of any skill requires practice. Ericsson, Krampe, and Tesch-Romer (Ericsson, Krampe, & Tesch-Romer, 1993) have used the term ‘deliberate practice’ to describe how experts acquire performance skills. Lehmann and Davidson (2006) on the other hand, suggest the constraints to practice as being “resources, effort, and motivation” (p. 239) and state that deliberate practice requires mental effort. Deliberate practice continues to be the term used in detail by Lehmann, Slodoba, and Woody (2007, p. 66) as a process where “there are explicit goals and the possibility of feedback”. Lehmann et al. (2007) also suggest that “more practice leads to better performance” (p. 61) yet Barry and Hallam (2002) had previously raised the question of “whether accumulated practice can predict achievement” (2002, p. 152). Lehmann and Davidson (2006, p. 242) proposed that a “lack of progress or achievement in spite of reported practice time may ultimately be related to suboptimal quality of practice”. Research in the area of practice has recently investigated both these claims, and examination of the findings allow us to better understand the links between practice and achievement.

Practice time

Williamon and Valentine (2000) did not find that quantity of practice time was related to quality of performance. They examined piano students in east England performing one composition, by J.S. Bach. While they examined students in the total population ($n = 22$) from four levels of performance standards, only those students in the uppermost level, Level 4, ($n = 5$) are of interest to this paper, as they represent students studying at the higher education level. Participants recorded all their practice sessions and when they had learned the piece, performed it in a recital setting in front of their teachers, peers, and parents. The performances were evaluated according to the 3 guidelines of the Associated Board of the Royal Schools of Music: (1) Musical understanding, (2) Communicative ability, and (3) Technical proficiency. Four points were awarded for each area, giving a total of 12 for the scale rating. Examiners' scores were found to be reliable (2000, p. 364). Practice time was calculated firstly in minutes spent practicing in each session and secondly, cumulatively in the number of practice sessions in each day. The relationships between the quantity of practice time and quality of performance in the mean ratings from examiners were investigated with correlations, none of which were significant. Further examination of the practice session recording data revealed differing levels of focus on the piece, depending on the stage of the practice session in relation to the performance. The first 3 practice sessions were classed as Stage 1, the last three sessions as Stage 3. Stage 1 sessions seemed focused on technical details and executions whereas the Stage 3 sessions showed longer run-throughs of the entire piece or on performing from memory. Players in Level 4 commented to themselves on a wide range of issues, including coordination and communicative interpretations of the music. Pianists at Levels 1 and 2 commented on physical difficulties associated with execution suggesting that experienced musicians use different strategies than novice or intermediate performers. A more detailed examination of practice strategies will be expounded upon later in this paper.

Contrary to Williamon and Valentine's finding, Jørgensen (2002) suggests that the amount of practice time does have a positive relationship with performance level. He asked $n = 89$ Norwegian students in a conservatoire over a 5 year period to keep track of their practice time. In this study, practice time was defined as *practice alone* and instrumental, vocal, and church music (organ) students were examined. Their performance level was calculated by using examination grades, which were represented by a five-point scale, from 'fail' to 'excellent'. A critical difference in methodology should be noted here; Jørgensen's data of 'grades' represented a student's overall progress in general, at the end of their second and fourth years of study, whereas Williamon and Valentine (2000) only examined students' performance on one piece, and they only examined piano students. Jørgensen examined instrumental, vocal, and organ students' overall progress and he then combined the two data points of grades (2nd and 4th year) in the analyses which showed a positive relationship between examination grades and mean weekly practice time. Spearman rank correlations were performed and revealed a significant relationship occurring only with the instrumental students grades ($r = 0.367, p < 0.05$) and their recorded practice time. Other factors, such as the perceived level of 'expertise' in students, as well as optimal amount of practice time were discussed as complex factors that affect learning and performing in the applied studio. He also notes the distinction between "progress in general and progress in the practice and performance of one piece" (Jørgensen, 2002, p. 116). He cautions applied teachers about the type of advice they give about practice, explaining that the relative gains get smaller as skill and effort increase (Jørgensen, p. 117 citing Krampe & Ericsson, 1995, p. 87). Jørgensen acknowledges complexities that also impact individual differences in practice time, initial starting ages, differences in the quality of the history of their past practice and development, differences in repertoire and practice strategy choices. He raises the question again, citing his earlier work (Jørgensen, 2000), of who might be responsible for teaching university students how to practice, suggesting that institutions put the issue of practice on the agenda. Presumably, this assists applied teachers to make it a priority also, instead of hoping that all teachers will put the appropriate level of importance on practice instruction with their students. This leads us to consider if applied faculty have access to research about practice or if in fact, they are concerned with teaching students how best to practice? Perhaps the current position of applied faculty may be that students need to find their own maximum practice routines, strategies, and times?

Madsen (2004) examined the use of practice time and also the relationship of past practice to current performance in a follow-up study that used two data sets, 30 years apart. He examined data from several levels of performers: professional musicians, semiprofessionals, freelance musicians/college instructors, music teachers, community musicians, and jury / senior recital only. The first set of data was collected in 1972, published in 1975, and represented students at a large school of music, $n = 246$. They completed pre- and post-test performances that were judged by "a panel of judges" (p. 79) with an unknown instrument, however, interjudge reliability was stable at $W = .95$ as determined with a Kendall Coefficient of Concordance. Students in the original data set were asked to keep practice time logs between the two performances and were asked to self-rate the productiveness within each session in 1972. The second set of data were collected through a survey instrument, $n = 78$, in 2003 (p. 82). This group represented the original group proportionally equal to the original group ($n = 246$) subcategories of brasses, woodwinds, voice, strings, keyboard, and gender. Madsen's findings showed that after a 30-year period, participants were not accurate when assessing their previous amounts of practice when actual practice records were compared to the later perceptions of this practice time, but that participants felt that they were remembering accurately. More relevant to this paper, he did not find a strong relationship between remembered practice time and participant's highest level of performance. Participants who were classified as 'professional' and who would have had high levels of performance, such as playing with major professional groups or solo recording careers, had almost the same totals of remembered practice time as those in the lowest level of performance. The lowest level of performance group was made up of those individuals who had only passed an exit jury or recital at college and had not continued to play. Clearly, all participants would have had the same phenomenon of 'memory fading with time' (p. 87) but Madsen's finding that 89% of them believed that there was a close relationship between their highest level of performance and total amount of practice, illustrates that there was widely perceived notion in this group of participants that "practice makes perfect" or that practice does affect performance achievement. Many of the participants were still performing when they responded to Madsen's 2003 survey and may have been teaching in applied studios of their own. This demographic data would have been helpful had Madsen collected it within the second survey instrument in his study. We may have been able to determine if indeed this is a belief held widely by applied teachers, as a sub-set of professional performers.

Practice strategies

Rather than focus on practice time, Kostka (2002) asked applied studio teachers directly about their perceptions of practice, and examined their perceptions about the strategies used within practice time. Kostka administered a survey to $n = 127$ college-level studio music

teachers. She also administered this survey to students and while the groups were independent and no comparative statistical analyses were performed, the differences in perceptions of both sets of participants serves to illustrate that the teacher-learner dyad contains some discrepancies. The survey contained questions about “attitudes toward music skills, use of time during practice, practice strategies and routines, and attitudes about practice in general” (p. 147). Teachers reported that the most amount of time in practice should be spent on repertoire, and a combination of warm-ups with repertoire. The applied teachers represented all groups of piano, brass, woodwind, string, percussion, voice, and guitar and indicated in their responses that they expected their students to practice, on average, 14.5 hours a week. They indicated that they discussed “good practice strategies” (p. 149) in lessons, yet 41% of students indicated in their surveys that they had not discussed practice strategies with their teachers. Kostka strongly suggested further research to firmly establish what type of practice strategies are being discussed, and how they are being taught.

Practice strategies in the college setting have been also summarized recently in the music psychology literature (Barry & Hallam, 2002; Lehmann & Davidson, 2006; Lehmann, et al., 2007). Barry and McArthur’s original work (1994) started investigation into this field and since then, many researches have studied this area in a variety of ways. Lehman et al (2007, pp. 76-80) suggest there are phases of practice; that students can learn to practice correctly, that mental rehearsal can be effective, and that automaticity is usually a product of repetition. Case studies of professional experts reveal similar strategies but at more detailed and complex level (Chaffin & Imreh, 2001). The importance of the variety of practice strategies being explored in the 21st century, is fully evident in Williamon’s (2004) recent book that describes, in detail, many strategies. This book is recommended for a detailed examination of alternative approaches to practicing and acquiring skill. Rohwer & Polk (2006, p. 350) found that there are different practice strategies in high school instrumentalists and labeled the students as holistic noncorrective and corrective practicers, as well as analytic reactive and proactive practicers. Similar types of strategies have been found in the applied studio, but the strategies themselves are more varied, presumably due to the level of metacognitive, developmental, or monitoring skills that are involved at the college student age level. Of recent salience are four studies (Byo & Cassidy, 2008; Maynard, 2006; Miksza, 2006; Nielsen, 2001 and 2008) that examine some of these strategies in detail.

The most widely held belief in the applied studio is perhaps that practice involves repeating works, passages, phrases, and whole works many, many times. Maynard (2006) examined the use of repetition in her study of high proficiency level students at a large music school in America, $n = 19$. She videotaped musicians practicing over two sessions, with the sessions lasting more than one hour. She examined musicians of four levels of proficiency and stratified out the processes concerned with isolating, remediating, and recontextualizing within the practice sessions. She examined participant’s use of consecutive performances as part of repetition in the practice sessions. Video data was analyzed with frequency counts calculated of practice frames and trials. Repetition was illustrated to be the most extensive strategy, with participants averaging 10 trials for a particular target passage in the music, but they only played short passages of 6.3 seconds each. Practice frames were also short, at 67 seconds.

Repetition was one of several other strategies also uncovered by Byo and Cassidy (2008). In their exploratory study, they gathered data with two methods; survey $n = 38$ and observation $n = 9$. The data collected yielded both information about student perceptions of the techniques used in their practice, and the actual techniques used in the practice room. Survey results indicated that students practiced on average, around 2 hours each day, with seniors practicing slightly more than juniors, who practiced slightly more than sophomores. Woodwind students reported the most practice, then brass and percussion, and string students reported the least amount of practice at 1.75 hours a day. All students reported that they spread this time over two sessions each day. Most students, 76%, had some kind of routine for their practice based on “their teacher, personal input, master classes, books, or others’ advice” (p. 35). Students reported a variety of strategies that they thought they employed in the practice room – “slow tempo, change something, isolate problem spots, another sound source, metronome, general comments, repetition, analyze music, memorize, record self, long tones, scale study” (2008, p. 37). Among other items in the survey was the item that asked participants what their perceived level of efficiency was in their overall practice and generally, the students felt effective or “productive” (Byo & Cassidy, 2008, p. 36). Students clearly reported that they needed “better self discipline, a routine, and no interruptions” (p. 36) to improve their practice efficiency. The observation data was collected separately, only from junior class students. Students practiced for around 50 minutes in the session, were videotaped, and most sessions revealed somewhat similar behaviors as reported in the survey data. Video data was tested for interobserver reliability in regards to the strategies being observed and across the 5 judges, it was stable at .97 (p. 37). Notably, in support of Maynard (2006), repetition was the only strategy to be used by all the nine participants. Eight of the nine participants also “reduced tempo, changed something (articulation, rhythm, grouping of notes), and isolated problem spots” (2008, p. 38). Interestingly, other strategies were observed by Byo and Cassidy in the video data, that were not reported in the survey data, such as playing on the mouthpiece alone, whistling, singing, or speaking the melody or rhythm, fingering, using a mirror, and blowing air while tonguing the rhythm. Byo and Cassidy suggest that while participants could explain their common practice strategies in the survey data, they used strategies very differently in the actual practice room, at least as observed in the video recorded sessions. They discuss an interesting difference in their findings that some students stayed on a single section for a long time, while others played long segments with a few smaller corrections (p. 38). This shows at least a varied use of repetition. They also suggest that the discrepancy evident by a lack of focus and self-discipline might be improved if students could do the following: identify specific targets in the music, discriminate between targets, distinguish between practice needs (play-throughs and problem solving), be more flexible in their routine, develop an aural model of the music to help self evaluation, and to view practice as performance, not preparatory (pp. 38-39). These suggestions were given in the context of how ensemble directors prepare to lead an ensemble through a rehearsal but these suggestions hold ideas for application for applied teachers in the studio.

Nielsen (2001) studied the learning strategies employed in instrumental practice. The learning strategies used in this study are slightly different than the literature previously discussed, referring in this case to self-regulation, however it is worth examining in the current paper as it highlights some strategies that had an impact on outcomes in the practice sessions. Nielsen undertook a case study with 2 junior organ students, in Oslo, Norway. The students were observed in the first practice session for practice behavior, which was coded. They were then asked to focus on what they were thinking and verbalize their thoughts in the second practice session, which was filmed and later coded. The third practice session asked the students to recall their strategies from the second session and verbalize their thoughts while watching the video of the aforementioned second session. Nielsen (2001) focused on the metacognitive processes but the analysis reveals that the two students both

slowed down music until errors were eliminated, but the students took different strategies, not just repetition, to achieve both speed and accuracy. They set themselves different goals and used different strategies to get results. The use of strategic planning was observed in both students, such as “learning the score” (p. 160) as a means to help them understand the whole piece. The use of self-instruction was evident in both students also, where they told themselves what to do, for example, “and remember the melody in the pedal” (p. 161). Nielsen identified ‘task strategies’ which are defined as ‘reducing a task to its essential parts and reorganizing them meaningfully’ (p. 162) and this was seen as the whole-part-whole method. Interestingly, the whole-part-whole method has been observed since the early part of the 20th century by Brown (1928) and Eberly (1921). Students were observed self-monitoring in this study (Nielsen, 2001) and Nielsen suggests that students selectively monitor, at a detailed level, which in turn, leads to a change in strategy if success is not forthcoming. This metacognitive approach illustrates the self-commenting process that Byo and Cassidy (2008) also found, but in much more detail. Nielsen’s later work (Nielsen, 2008) revealed that more advanced students have more likelihood of regulating their achievement goal orientations during practice. She explored the relationship between three goal orientation factors, namely ability-approach goal, ability-avoidance goal, and task goal; and their relationships with learning strategies. These relationships were not seen in self-monitoring but in how students reported their goals and learning strategies on both an inventory and a questionnaire. It seemed that first-year students tended to orient towards ability approach goals, being concerned with appearing more competent than other students, and task goals, being more focused on “learning, self-improvement, and mastery of challenging music” (p. 241). The students who “reported more use of learning strategies were often more oriented towards a task goal” (p.241). Her findings suggest that applied teachers should assist students in focusing on the tasks at hand during practice and not defining success in comparison to other students.

Mikszsa (2006) examined not only the use of practice time but also other issues, such as observed practice behaviors, practice effectiveness, and self-reported practice habits. He examined $n = 40$ undergraduate and graduate brass students, which represented 23 men and 17 women at a large music school in America. He tested for impulsivity (as measured with the Eysenck Impulsiveness Questionnaire for Adults) and for locus of control (as measured with the Nowicki-Duke Internal-External Locus of Control Scale for College and Non-College Adults). These measures and results are outside the scope of this paper but the other important findings must be examined as factors that are present in the applied studio student practice behaviors. Individual practice sessions were recorded, audio and video, and students were asked to sight-read an étude and then rehearse, or “practice” it. Their goal was to make the most improvement in 30 minutes, in between the first sight-reading and the final performance of the whole work. Their first sight-reading attempt acted as the pre-test performance and their final rendition of the étude was considered the post-test performance. Mikszsa used an objective performance scale (OPS) that he developed and a version of Zdzinski’s 1993 Performance Rating Scale Supplement (PRSS as cited in Mikszsa, 2006, p.312). The reliability of the PRSS was stable with coefficients ranging from $\alpha = .95$ to $.99$. Interjudge reliabilities for both the OPS and the PRSS ranged from $\alpha = .81$ to $.95$ after judging occurred blindly, with the three judges, from the audio tapes only. One mean score was created for the pre-test performance and one for the post-test performances, for each participant based on the judges’ scores for each recording. Video recordings of the students practicing were coded for practice behaviors and the following were found in the participants in this study: “singing/whistling, air, varying tempo, silent fingering/slide positioning, varying pitch, varying dynamic, varying articulation, buzzing, informal playing, whole-part-whole, frustration, self-guiding, repeat measure, repeat section, repeat piece, use of metronome, use of electronic tuner, marks part, and use of piano” (p. 313). Durations of these behaviors were taken with a stopwatch and frequency counts were taken. An independent observer observed a random set of 10 session recordings and the resulting Spearman coefficient for the durations observed was $r = .88$. The participants also completed a researcher-developed Music Practice Questionnaire (MPQ) which asked them about their daily practice routines, time spent, and whether there were differences in their informal or formal practice approaches. Mikszsa (2006) found that students had long practice session times, averaging 68 minutes, with more time spent on formal, than informal practice. They also reported that they were only moderately efficient in the practice session. The strategies of listening to recordings and use of a metronome were reportedly the most frequent strategies used in personal practice time. In the observed practice behaviors, frequency counts showed repeating a measure and repeating a section as the most frequently employed strategies, followed by slowing, varying pitch, and marking parts. Mikszsa also undertook mixed-design analyses to determine if there were differences in the pre-test and post-test performance scores. Results showed that there was a significant gain in performance score between pre- and post-test. He also found moderately strong relationships between the practice efficiency ratings and the pre-test ($r = .41$) and post-test ($r = .60$) scores, suggesting that the “participant’s perception of the practice efficiency was somewhat related to their performance achievement” (p. 317). Mikszsa found that almost all participants utilized repetition of a section, and a measure, in addition to slowing down, varying the pitch and marking the part. This is consistent with Byo and Cassidy’s later findings (2008). Mikszsa (2006) found that whole-part-whole practicing was the next most frequent behavior, followed by self-guiding, repetition of the whole piece and varying the dynamics (p. 317). Mikszsa also found a significant relationship between performance scores and observed practice behaviors. The behavior “repeat section” correlated with the pre-test score $r = .47$ and the post-test score $r = .52$ and the behavior “whole-part-whole” was significantly related to both pre- and post-test scores (pp. 318-319). This suggests that repeating musical sections may be more related to practice effectiveness. Mikszsa explains “the relationship between performance scores and practice behaviors illustrates the importance of strategic practice” (Mikszsa, 2006, p. 319)

Mikszsa’s findings support Byo and Cassidy’s (2008) findings of a variety of observed practice strategies employed by students. Mikszsa’s (2006) and Byo and Cassidy’s (2008) combined findings lend support to Kostka’s (2002) finding as she had previously implied, that there is importance in how students are practicing and perhaps in turn, how they are learning to practice from their teachers. Mikszsa’s (2006) finding that there was no significant relationship between the amounts of time spent playing in a practice session and performance achievements seems to illustrate that, as Lehmann and Davidson (2006, p. 243) imply, that studio teachers should be aware of teaching their students how to practice correctly, rather than just specifying a time length to achieve. The type of practice, rather than length of practice, has more impact on performance achievement. This suggestion, of course, seems to go against the widely assumed notion that ‘more practice is better’.

Implications

The use of strategies is complex and from the literature previously discussed, it becomes apparent that individual differences do contribute to outcomes and achievement in different ways. Repetition is a strategy that all college music students use to greater and lesser degree effectiveness. Repetition as a strategy might be effective particularly if students do it for long enough periods of time. The findings of

Jørgensen (2002) posit that there is a positive relationship between the length of practice time and instrumental achievement over time. However, the recent findings of Mikzsa (2006) and Williamon and Valentine (2000) strongly show that there is no significant relationship between length of individual practice sessions and performance level. Even though both of these studies used different methods of evaluation the final musical performances, and the participants in Williamon and Valentine's (2000) study had longer to prepare their work, the results are clear particularly when discussing one piece of music. What becomes more apparent is that practice segments and strategies, such as taking a piece apart and working on sections in a variety of ways, seem to impact the performance quality outcome rather than just practicing for longer sessions. It makes sense that longitudinal studies such as Jørgensen's (2002) report a cumulative improvement and relationship to practice across a four-year period.

The notion of self-talk, or comments or self-guiding, found in four studies spread across three countries (Byo & Cassidy, 2008; Mikzsa, 2006; Nielsen, 2001; Williamon & Vallentine, 2000) is worth considering as perhaps an important strategy. Students obviously 'coach' themselves and this may act as a subtle form of self-evaluation that is largely based in the monitoring process that Nielsen (2001) found. Nielsen (2001) and Mikzsa (2006) both reported the use of the whole-part-whole strategy to be successful in improving pieces during a practice session. Repetition was found to be used by all students (Byo & Cassidy, 2008; Mikzsa, 2006; Nielsen, 2001; Williamon & Vallentine, 2000) as a strategy but clearly repetition alone is not effective. It must be associated with a goal, and a particular strategy or series of strategies, to make a significant increase in performance level. As Jørgensen (2002) points out however, the differences between performance levels for one piece as compared to overall progress over time, and the many individual experiences students have with practice over the course of their early careers, need to be taken into account as important complexities in the applied teaching and learning setting.

Kostka (2002) observes the inconsistency between what applied teachers think they are teaching about practice and what their students are learning about practice. Byo and Cassidy (2008) demonstrate that students often report that they know what they should be doing, but don't necessarily do it in the actual practice room. This implies that perhaps this is another area that applied studio faculty need to address. Byo and Cassidy (pp. 38-39) suggested that students would be more focused in the practice room if they could: "identify specific targets in the music, discriminate between targets, distinguish between practice needs (play-throughs and problem solving), be more flexible in their routine, develop an aural model of the music to help self evaluation, and to view practice as performance, not preparatory" (pp. 38-39). These suggestions are practical and easily embraced into practice room behavior but it leads us to the question: How will students learn to do this? Applied faculty typically teach with a 'demonstrate-explain' model so perhaps they could incorporate these ideas into their instructions and demonstrations during lesson time. Many applied faculty already do this, naturally, as their own teachers taught this way. However, for the applied faculty whose students are not reaching their performance goals, or achievement potential, it is perhaps worth considering that the research, as described in this paper, may be helpful to them.

Future research in the area of practice might be undertaken to answer several further research questions. Firstly; are there non-verbal ways that applied teachers are teaching their students about practice? Perhaps teachers are demonstrating good practice strategies in a lesson but students think it is only part of the studio setting and don't consider using it in their own practice. The second research question asks what types of strategies work best for different instruments? Some of the research examined in this paper identified that strings, brass, woodwind, and keyboard students practice differently, due to the physical demands of the instruments. Researchers might undertake a deep experimental examination of practice time and strategies that are more successful for each of these subgroups of instruments. One would assume vocalists are different, yet again, in how they practice. The final research question worth investigation in the future would ask what are the benefits of feedback from recordings, or other students, in the practice setting? This could be answered in a study where students are asked to listen to their own practice recordings and 'self-comment'. Perhaps this might also significantly increase the level of performance by the end of a practice session.

The purpose of this paper was to highlight the most current research in the applied studio, in the area of practice across an international platform. Some simple observations have been made between studies in the USA, the UK, and Norway, and several suggestions for future research design have been given. The general implications this paper therefore brings for applied faculty are the following: (1) that they may need to teach students explicit strategies to use in the practice room, (2) the notion that more practice time will improve their students' achievement should be reconsidered, and (3) that applied faculty might begin a more interchangeable dialogue with researchers about performance and practice in the applied studio. The work of Parncutt (2007) explores the latter concept in detail and will be discussed in the third, and final, part of this series about the applied studio.

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