

---

## **"WHY CAN'T I JUST PLAY ALREADY?" ADDRESSING ADULT FRUSTRATIONS AT THE PIANO THROUGH MINDSETS AND EXPERIENTIAL LEARNING STRATEGIES**

---

*Leah Coutts*

---

### *Abstract*

*Many adult students start piano lessons with unrealistic expectations and aspirations to be able to "play" without much effort. This can impede their learning and result in frustration at uncooperative fingers and feelings of helplessness. This paper conveys that the answer to uncooperative fingers may not lie in motor issues, but in those of the mind. It addresses how the power of language, experiential learning techniques, and technology may be utilised to guide students' focus towards a process-oriented mindset. This may allow students to reach their end goals faster while also allowing them to enjoy the journey.*

Many adult students start piano lessons with unrealistic expectations and aspirations to be able to "play" piano without much effort. This can impede their learning and result in frustration at uncooperative fingers and feelings of helplessness. Pedagogical literature that addresses this issue appears to be dominated by those focusing on motivation. However, this literature also notes that the main challenges that adult learners face are those of motor-cognition separation, frustration at uncooperative fingers, and mindset factors beyond those of motivation (Wristen 2006; Orlofsky & Smith 1997; Uszler 2000; Taylor & Hallam 2008; Maris 2000). Thus, it could be argued that a solution that focuses on motivation alone is not conducive to addressing these challenges.

Uszler (2000, p. 60) recognises the relationship between psychological struggles and motor challenges, noting that self-consciousness and unrealistic expectations of perfection and time frames for competence "impede progress in learning to attend to what the body reports." Gallwey (in Green 1986) also insists that "especially in our culture of achievement-oriented activities, human beings significantly get in their own way."

Through the consultation of literature on educational psychology and adult learning theories, it appears that the answer to adult students' uncooperative fingers may not lie in motor issues, but in those of the mind. This paper discusses the ways in which self-theories and mindsets affect a student's approach to learning. It also addresses how the power of language, experiential learning techniques, and technology may be utilised to guide students' focus towards a process-oriented mindset. This is argued to be the optimal mindset for learning and may serve the dual process of enabling students to reach their end goals faster while also allowing them to enjoy the journey.

It was educational psychologist Carol Dweck (Dweck 2007; Dweck 2000; *Self-theories* n.d.) who first explored the relationship between people’s implicit self-theories and the effects on their learning. The implicitness of these theories infers two things: That they can be recognised even when not explicitly expressed; and that the “self” is not necessarily aware of the theories they possess. That is, they may operate at a subconscious level.

The two theories that Dweck identified are “Entity Theory”, also known as “fixed mindset”, with the belief that intelligence is fixed, and “Incremental Theory,” or “growth mindset”, with the belief that intelligence is uncapped. It has been argued that a student’s predilection to one or the other will affect their approach to learning. Table 1 below highlights the differences between the two.

Table 1

*Fixed mindset vs growth mindset (Self-theories, n.d.)*

<b>Fixed Mindset</b>	<b>Growth Mindset</b>
Avoid challenges	Embrace challenges
Get defensive/give up early	Persist despite setbacks
See effort as pointless	See effort as leading to mastery
Ignore negative feedback	Learn from criticism
Feel threatened by others’ successes	Feel inspired by others’ successes
May plateau early and achieve less than potential	Are able to reach higher levels of development

Those with a fixed mindset believe that intelligence is innate and thus expect that if they are not ‘good’ at something straight away then they must not be talented in that area. They are concerned with proving their ability to others, and any negative feedback is seen as a threat to the self. They tend to exert less effort and persistence in the face of challenges due to a fear of exposure. Students with fixed mindsets also expect learning to be quick (Dahl 2005, p. 26), resulting in superficial learning rather than deep and critical understanding. Entity theory thus promotes a helpless response which is accompanied by negative emotions, negative predictions of future outcomes, and low persistence. These have been shown to have links with avoidance of study and poor study skills (Thompson & Musket 2005, p. 393). While adult piano students pursue lessons of their own volition, and thus one would expect that they would not avoid

practice, experience shows that this is not always the case. The desire to learn the piano and participation in piano lessons does not necessarily mean that positive practice strategies will be employed at home. Having a fixed mindset may be a root cause.

One common demonstration of entity theory at work can be heard in the words “musically talented,” “musically gifted” and “naturally musical.” These words imply that a person is born with musical abilities and that effort is not required for these people to achieve musical success.

Mindsets are shaped through the language that we are exposed to (Dweck 1999; *Self-theories* n.d.; Wulf & Lewthwaite 2009). Imagine a student who is labelled as “musically talented.” If the student believes in their own innate talent it then follows that nothing should be too difficult and that they are musical beyond the need to try. Upon first exposure to challenge at the instrument the student may withdraw in the fear that they will not appear musical anymore. This example also shows how those not labelled as “talented” may also be affected due to fixed mindsets: If an individual believes that they are not of the “musically talented” elite, they may not ever allow themselves to expand their horizons and “give things a go”. Or, in what appears to be a common occurrence, their love of music brings them to learn but they easily find themselves giving up.

The other end of the spectrum, incremental theory shows that those with a growth mindset thrive on challenge and expect that working at a skill will improve their skill level at it. They focus on the task at hand and generally have a higher level of intrinsic motivation than entity students. They overcome difficulty by increasing their effort, do not expect learning to be quick and they also persist when faced with difficulties (Lehmann et al. 2007). Common phrases may be that they “love a challenge” or are learning piano to “grow” or “expand themselves”. Their inquisitiveness foregoes any sense of negative judgements and they ask questions that seek deeper understanding.

Of course, this is not so simple as the dualism outlined above. There is a scale between fixed and growth mindsets and each person will find themselves on a different degree of the scale. Also, those with fixed mindset in one area, such as music, may have growth mindset in another, such as intelligence from pure knowledge (*Self-theories* n.d.). Mindsets do not only apply to students; teachers also fit along this scale. One would hope that teachers do not fall too far to the fixed mindset, as unfair or unjust labelling of students may again affect their growth and learning at the piano.

The reason self-theories and growth mindsets are so vital to optimal learning is due to the impact they have on the ways in which students focus and apply learning strategies.

This is important in the context of one-on-one piano tuition as the student only has one lesson per week, with the other six days being spent with personal practice time. How they spend that practice time has a direct bearing on their learning progress, which further impacts on their self-theories and mindsets further, either confirming or shifting their current beliefs about ability, practice, skill, and effort. This cycle is outlined in figure 1 below:



**Figure 1:** Positive learning cycle

Most experts believe that the most productive focus for learning a skill comes from being immersed in the process, rather than being focused on the end product or goal (Thompson & Musket 2005; Mangels et al. 2006; Wulf & Lewthwaite 2009; Zimmerman 1995; Dweck 2000). This focus on mastery over performance leads to the development of a strategy and the characteristics of growth mindsets that result in optimal learning.

Inspection of Western society yields evidence on how our habitual mindsets have been conditioned to strive for the end result or product rather than enjoying the process that achieves that end. Our education system emphasises attaining results, and we have a collective attitude of “getting things done” in a rush to get to our next to-do item. This environment shapes our perspectives into being impatient, results-driven, and product-focused (Sterner 2012). While doing tasks that may lead to attaining goals, we often feel bored, restless, frustrated, or impatient. It is this perspective that needs to shift in order for deeper learning to take place. Paradoxically, by focusing on the process needed to achieve the goal, the end product is actually attained sooner.

The following anecdote that is all too common amongst adult piano students illustrates how this may culminate at the piano:

The piano student has been given a detailed practice sheet from her teacher on steps for constructive practice. This outlines how to break down the piece into manageable sections and how to correct mistakes. In her haste and desire to just be able to play “perfectly” hands together, beginning to end, the student ignores the sheet and employs hands together, beginning to end. She generally combats the same mistakes in coordination, timing, and notes each time, slowing down and pausing through any challenging sections and overall missing the beautiful musical intentions of the piece, leaving her feeling frustrated and defeated. At the lesson the student plays this piece through for her teacher with much hesitation, negative self-talk, and the same mistakes that were there the previous week. Tension is visibly obvious in her posture and slightly shaking hands. At the conclusion of her run-through she exclaims that she could play it much better at home.

If this student, in addition to being product-oriented, held the belief that she was not born musical it is clear to see how her halting and inaccurate playing may confirm her perception and cloud her ability to focus on the process. The longevity of this student’s musical interest is likely to be affected. Common phrases of justification from students include “I got distracted,” “that never happens at home”, and “I know this perfectly well.” Westney (2003, p. 63) describes these as narcissistic thoughts that are supplied by the ego. They are signs of a need for a change in focus.

Westney (2003, p. 61) remarks that most students view mistakes as “bad” and as something to be avoided. Sterner (2012, p. 23) explains how this view of mistakes produces anxiety, as they are interpreted as delaying you from your goal. This negative perspective often creates tension and increased lack of control. By relinquishing control and giving themselves permission to make mistakes, the relaxation that results often avoids the anticipated mistake in the first place (Westney 2003). Relaxing the controlling ego is all part of the shift from product-oriented to process-oriented. It changes the student’s perspective from that of someone who passes judgment and criticism to one of passive observer. This shift in perspective allows the student to leave their ego aside and reflect honestly, without emotion and labels. Negative emotions fade away and are replaced by focused concentration and an open mind. Attributing errors to ineffective strategies rather than lack of ability is also a sign of process-oriented thinking and incremental theory.

Dweck (*Self-theories* n.d., pp. 6-7) discovered six key interventions that are able to move students from a fixed mindset to a growth mindset. These are:

- 1) Knowledge of self-theories - awareness of the existence of these self-theories or mindsets was enough to start shifting mindsets automatically;
- 2) Nature versus nurture - inclusion of an article supporting nurture automatically moved people towards incremental theory, at least for the duration of the experiment;
- 3) Facilitation by praise - praise of the use of problem solving strategies, effort, persistence and hard work move people towards growth mindsets, while praise of ability, intelligence, or competence moves people towards fixed mindsets;
- 4) Facilitation by criticism - constructive criticism, such as the need for different strategies, more effort, more persistence, or to try harder move people towards a growth mindset;
- 5) Improvement - consistently draw attention to the amount of improvement being made. This shows learning by increment;
- 6) Attitudes and expectations - Teachers' behaviours and actions model the theory they hold. Their students can absorb and adopt these for themselves.

The first two points demonstrate the importance of awareness of mindsets. Awareness of one's own thinking processes, and the ability to take control of one's beliefs, attitudes, and commitments to tasks while learning in order to direct mental effort is known as metacognition. It has been argued that knowing the process of learning is just as important as the content of what is learned (Snyder & Snyder 2008). Maclellan & Soden (2012, p. 445) explain that "a range of studies demonstrate that the more persons are aware of their thinking processes as they learn and the more that this is made an explicit feature of instruction, the more able learners are to control goals, behavioural tendencies, and attention." This validates further Dweck's findings that mere exposure to the existence of self-theories can help to shift beliefs and mindsets (*Self-theories* n.d.).

If knowledge can help to create perspective shifts, then understanding brain functions in relation to self-theories and mindsets, albeit on a basic level, may help to highlight the importance of the role that mindsets play in learning. Neuroscience provides evidence as to how people's brains function differently depending on the self-theories that they hold. Dweck (2007) conducted experiments in a laboratory to determine brain wave activity associated with feedback. This is what she found:

People with a fixed mindset were only interested when the feedback reflected on their ability. Their brainwaves showed them paying close attention when they

were told whether their answers were right or wrong.

But when they were presented with information that could help them learn, there was no sign of interest. Even when they'd gotten an answer wrong, they were not interested in learning what the right answer was.

Only people with a growth mindset paid close attention to information that could stretch their knowledge. Only for them was learning a priority.

Other studies support these findings. Mangels et al (2006) conducted a study that illustrated how those with growth mindsets learn more from their mistakes than students with fixed mindsets. They observed that entity students appeared less likely to engage in sustained semantic processing of learning-relevant feedback. This lack of attention also then affected their recall and recognition (Mangels et al. 2006). Another study found that those with entity theory displayed less activity in the left temporal negativity - the area of the brain responsible for processing corrective feedback (Wulf & Lewthwaite 2009, p. 2). As those with entity theory view negative feedback as a personal affront, the signals in the brain react differently, not allowing the pathways to process and learn from the feedback. For this reason, it is even more imperative to foster growth mindsets in order for students to learn through constructive feedback and continue to develop at the piano. The role of feedback is explored further in this paper.

Points three to five above (page 10) highlight the importance of language use, while point six emphasises teacher actions. These actions are supported by other experts in the field (Thompson & Musket 2005; Wulf & Lewthwaite 2009). Language adaptation can help to alter a student's focus from external factors, such as fortuitous circumstances, ease of task or leniency, to focusing on the strategy (Thompson & Musket 2005, p. 2). If someone is told that their natural capacity is being assessed versus undertaking a learnable skill different thoughts are generated. The words "difficult," "challenging," "hard" and the like are all fixed mindset stimulants. Acquirable skill language produces greater self-efficacy, increased positive affective self-reactions, and increased interest. Commenting on what is needed in order to achieve the task, such as "focus on..." and explaining what is required such as "persistence is needed but it will result in mastery" can prime students for a focus change (*Self-theories* n.d.). Wulf & Lewthwaite (2009) advise that practitioners should eschew implying inherent ability, even when there is success. Feedback might instead focus on improvements or effort invested. This results in increased improvements in the task. Because strategies are less stable than ability, they are also more easily modified for the individual.

Language is a powerful tool for influencing and shaping students' minds. Green (1986, p.

134) stresses that how questions are phrased can also manipulate how students interpret them. "Doing" instructions, such as "do this..." or "try to..." have a tendency to create tension and result in students trying too hard. This can lead to anxiety and may also cause undue confusion and panic. "Awareness" instructions, on the other hand, allow students to experience and give themselves feedback by noticing what works and what doesn't without judgment. It negates the need for them to demand more of themselves than they are able, or to remember a series of complex steps. It promotes a growth mindset, rather than a fixed mindset. Table 2 below offers examples of both types of phrases.

Table 2

*Doing and awareness phrases (ibid)*

<b>Doing phrases:</b>	<b>Awareness phrases:</b>
Do...	Be aware of...
This is difficult, but...	Listen for...
Play it like this...	How does it feel when you...
Make it better...	Tell me the difference you notice between....
Please try harder.	What do you hear when you...
Now relax!	Pay attention to the...
Let's get it right this time.	Notice the feeling you get when...

By understanding the power of language and adapting their use of it, teachers can start to facilitate positive interpretations by students and thus help to shape their perspectives towards tasks.

The language above also encourages either a product or process focus. If students are trying to achieve something, encouraged by doing phrases, then they are more likely to adopt a product-oriented mindset. On the other hand, awareness phrases encourage focus onto the process as they generate reflection and feedback. This emphasis on reflection and feedback is at the core of experiential learning.

Experiential learning is the process of making meaning from direct experience rather



than having information transmitted through words alone. While learning through experience is common amongst all constructivist learning theories, Kolb's (cited in Akella, 2010) experiential theory goes beyond merely 'doing', and also emphasises the role of actively observing and reflecting on what was done in order to determine meaning.

Reflection is the catalyst of comprehension, making personal and social connections, and the overall effectiveness of the learning. It can also be seen as the key to transforming mindsets. Instead of unquestioningly and habitually reacting to circumstance, it allows students and teachers to assess behaviours, strategies, and outcomes and to make adjustments where needed.

The steps of Kolb's experiential learning model are illustrated in figure 2 below:



**Figure 2:** Kolb's experiential learning model (Akella 2010, p. 102)

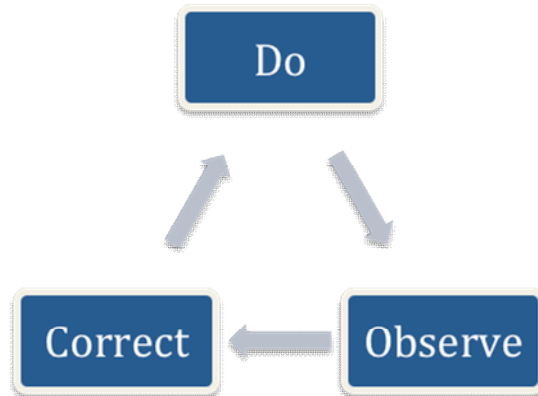
Merriam et al (2007) highlight the key components of each step:

- The learner must be willing to be actively involved in the experience;
- The learner must be able to reflect on the experience;
- The learner must possess and use analytical skills to conceptualise the experience; and
- The learner must possess decision-making and problem-solving skills in order to use the new ideas gained from the experience.

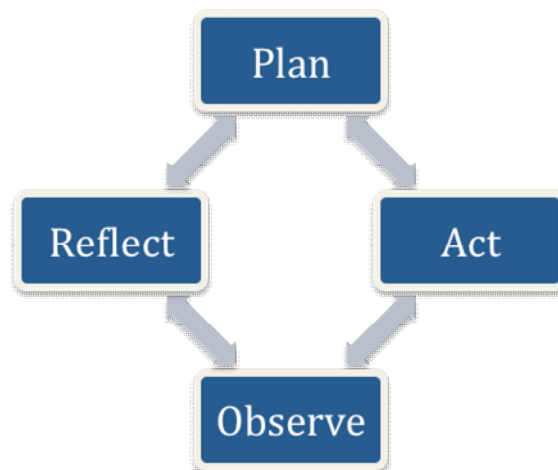
Comparing the above points to self-theories, it can be seen that once again incremental

theory is optimal. "Able," "willing," and "skills" all allude to mindsets that are complementary to this strategy.

The experiential learning model has been adapted in several different disciplines, including self-improvement, education, sport psychology, and piano pedagogy. The figures below illustrate the forms this has taken for each discipline respectively:



**Figure 3:** DOC cycle (Sterner 2012, pp. 112-121)



**Figure 4:** Plan-Act-Observe-Reflect cycle (Mitchell & Coltrinari 2001, p. 24)



**Figure 5:** Singer’s 5-Step Strategy (Singer 1989) □

While the intention of each stage of the cycles outlined above is congruent - to have students direct their focus to the task at hand and evaluate the result - the latter two also include pre-performance steps. Singer (1989) explicates that these preparatory steps allow the student to attain an optimal state of mind for learning. Again, this alludes to mindsets and the role that they play in learning. Singer (in Perreault 2009) also stresses that imagining performing the task accurately can increase motivation and cognitive pathways. This helps to affirm the students’ capabilities to themselves, again encouraging a growth mindset. This also shows that awareness and engaging in critical thinking begins before any action is executed. Once the practice trial has been executed, the observation and reflection stages are paramount in order to interpret and evaluate before executing further trials (Lehmann et al. 2007, ch 4, p. 8).

Bugos & High (2009, p. 1) acknowledge that the early stages of practice involve high levels of effort, concentration, and attention. The problem lies in that there tends to be a negative correlation between the amount of effort needed in practice and the amount of enjoyment students get out of an activity (Lehmann et al. 2007, ch 4, p. 4). This cycle may certainly appear labour-intensive, and it must be mentioned here that adult piano students often do not wish to employ high-end strategies due to the negative correlation with enjoyment, even though literature has shown that the expert-novice paradigm, where novices employ strategies utilised by experts, increases the quality of learning and decreases the amount of time required (Singer et al. 1993).

Knowles (2005) has highlighted the need for adults to experience success and enjoyment in order to fuel their motivation to learn. While these strategies may foster success, if they are not enjoyable, they may not be employed, and thus the success may never eventuate. I would like to posit that active involvement and reflection need not be always intensively focused on fixing incorrect notes. It is also about fostering an inquisitive mind through trial and error, making musical decisions, and uncovering different ways to achieve musical goals. Once students are immersed in discovery, the feeling of "hard work" may be forgotten and replaced with eager inquisitiveness.

Reflection with piano practice takes the form of sensory feedback, which is used to evaluate outcomes of practice trials. There are two types of feedback: inherent, which comes from within the students, and augmented/instructional, which comes from an outside source (Schmidt 2005, p. 366). While augmented feedback from the teacher allows students to understand what is required to produce the desired outcome, it is important that they also learn to be able to self-analyse in order to practice effectively at home. The role of feedback is to compare the actual output with the desired output. This enables students to evaluate the results before attempting to reduce the difference between the two (Dul, Pieters & Dijkstra 1987).

Becoming reflective is a developmental process that takes time and practice, as does learning any skill. This also alludes to reflection needing to be guided and encouraged in order for students to adopt this skill. Experts encourage critical questioning, reflective journaling, and dialogue to foster reflection (Taylor 2008; Barer-Stein & Kompf 2001; Willink & Jacobs 2011).

Reflecting questioning within the piano studio, and also for student inquiry during their practice, may include (Carey 2009):

- How did it sound/how did you expect it to sound?
- What worked/did not work?
- Are there other ways of playing that may produce a more desirable sound?
- How did it feel?

Inherent feedback, or critical self-evaluation becomes useful when students can process their "honest mistakes" (Westney 2003, p. 61) and correct their output to bring it closer to the desired result. Westney (ibid) emphasises that honest mistakes are made when students pay attention to what they are doing but something other than the intended happens. It is then up to the student to question what it means and to endeavour to correct it by adopting efficient practice strategies. If they do not address the mistake straight away, this is careless practice and is an indication of wandering attention.

In order for inherent feedback to be most useful, instructional feedback is first required so that students learn how to interpret the results of their practice trials. McAllister (2008 p. 17) explains that teacher demonstrations allow for aural discriminations from the student, especially when the teacher models both student output and desired output. The student can then imitate the teacher in an attempt to replicate the outcome.

Observation of teacher demonstrations not only gives students something with which to compare their output, but can also enhance their motor learning and thus technical proficiency at the instrument through the "theory of action perception" (Schultz-Bosbach & Prinz 2007). Brain imaging shows that when we observe an action, the same area of the brain is stimulated as when we actually undertake that action, linking perception with action. This is the phenomenon of mirror neurons, and is widely proven and supported through neuroscience and cognitive research.

Observation may reduce the amount of physical practice needed to reach proficiency in a motor skill, as it facilitates action pattern production, through developing a "cognitive representation" (Blandin, Lhuisset, & Proteau 1999) or a reference, for the task being learned. Sheffield (1961, in Blandin et al. 1999) calls this a "perceptual blueprint" of the task. Observation also allows for the participant to see the strategies that may be effective or ineffective, which could be difficult to deduce if participants are actively involved in the task (Badets & Blandin 2010).

Observation also aids implicit learning, that is, learning without explicit "how-to" instructions. An example of detailed instructions being obsolete is learning to ride a bicycle. Detailed instructions on how to push the pedals around, how to steer, and the underlying mechanical principles are not necessary. Motor skill learning studies have shown that too many instructions can actually degrade learning, when compared to not knowing the underlying rule (Wulf, Hoss & Prinz 1998; Wulf & Weigelt 1997; Liao & Masters 2001).

Understanding dynamics can serve as an example of this at the piano. The student does not need to know that lifting higher from the keys will result in a build-up of velocity so that the hammer action will also hit the string inside the piano at a greater speed and thus result in a louder sound. They naturally do what is needed to produce a greater volume. Then, through exploration of extremes and reflection on output, they can start to understand the range of nuances that they start to control and the expressions that they create.

Between lessons the student does not have a role model to demonstrate the desired output of the practice trials and to offer guidance on attaining it. If they are not yet at

the stage of being able to reflect on their own playing without this comparison aid, having a video demonstration to consult may help the student to bridge this gap. Videos may include recording entire lessons or single relevant teacher demonstrations, or even YouTube videos. Use of YouTube videos must include a word of caution, as students may compare their practice level to polished performances. It is the teachers' job to guide their students to consult appropriate resources.

As well as using video for comparison, it can also serve the function of teaching students to reflect on their playing. Recording their own playing in order to play back and critically analyse their trials can prove very beneficial as it is not possible to reflect and do simultaneously. The evolution of technology has made it easier to utilise this strategy. iPads, iPhones, smart phones, and small cameras are all readily available and have become common household items. The use of digital pianos is also increasing, and these generally have a recording function.

The extra visual and auditory feedback that recordings allow can help to focus awareness. It is the job of teachers to not just instruct students to video/record themselves and listen/watch back, but to also guide them on how to use feedback to answer critical questions that inform their next execution. Schmidt explains that while video is a reliable source for inherent feedback, research proposes that it is ineffective on its own. This may be due to the video giving too much information for the learner to decipher what is relevant (Schmidt 2005). He continues to explain that it may be more useful with guided cuing or directed viewing.

In order for this feedback loop to occur, incremental theory is required. As explained previously, those with entity theory are unable to attend to feedback as their brain waves fail to be stimulated by it. If Dweck's assertions that mindsets can be altered are correct, at least temporarily through language adaptation, then it may be possible for all students to benefit from the video tools and demonstration strategies that are aimed at facilitating feedback.

Exploration of the self-theories discovered by Carol Dweck provides insight into the role that mindsets play when learning and offers some possible explanations regarding student behaviours and strategies at the piano. It is encouraging to know that mindsets do not have to be static, however, and that piano teachers can utilise language and strategy to shape adult students' mindsets. By fostering a focus on process over product and developing initiative and creative problem solving by guiding students to generate their own ideas, draw their own conclusions, and analyse, evaluate and reflect on their learning responses (Chen 2001, p. 367), growth mindsets may be developed. This will

not only contribute to students' musical growth, but may also positively impact their longevity as students by replacing their impatient frustrations with inquisitiveness and enjoyment through the journey to their musical goals.

*Reference List:*

Akella, D 2010, 'Learning together: Kolb's experiential theory and its application', *Journal of Management and Organization*, vol. 16, no. 1, pp. 100-112.

Badets, A & Blandin, Y 2010, 'Feedback schedules for motor-skill learning: the similarities and differences between physical and observational practice', *Journal of Motor Behavior*, vol. 42, no. 4, pp. 257-268.

Barer-Stein, T & Kompf, M (eds.) 2001, *The craft of teaching adults*, Irwin Publishing Ltd, Toronto.

Blandin, Y, Lhuisset, L & Proteau, L 1999, 'Cognitive processes underlying observational learning of motor skill', *The Quarterly Journal of Experimental Psychology Section A*, vol. 52, no. 4, pp. 957-979.

Bugos, JA & High, L 2009, 'Perceived versus actual practice strategy used by older adult novice piano students', *Visions of Research in Music Education*, vol. 13.

Carey, G 2009, March 9, Lecture for Pedagogy 1 subject, Griffith University, South Bank, Qld.

Chen, W 2001. 'Description of an expert teacher's constructivist-oriented teaching: engaging students' critical thinking in learning creative dance', *Research Quarterly for Exercise and Sport*, vol. 72, no. 4, pp. 366-75.

Dahl, TI, Bals, M & Turi, AL 2005, 'Are students' beliefs about knowledge and learning associated with their reported use of learning strategies?', *British Journal of Educational Psychology*, vol. 75, no. 2, pp. 257-273.

Dul, J, Pieters, JM & Dijkstra, S 1987, 'Instructional feedback in motor skill learning', *Innovations in Education & Training International*, vol. 24, no. 1, pp. 71-76.

Dweck, CS 2000, *Self-theories: their role in motivation, personality, and development*. Taylor & Francis Group, New York.

Dweck, C 2007, *Mindset: the new psychology of success*. Robinson, London.

Green, B & Gallwey, T 1986, *The inner game of music*, Doubleday, New York.

Kitsantas, A, Reiser, RA & Doster, J 2004, 'Developing self-regulated learners: goal setting, self-evaluation, and organizational signals during acquisition of procedural skills', *The Journal of Experimental Education*, vol. 72, no. 4, pp. 269-287.

Knowles, M, Holton, EF & Swanson, RA 2005, *The adult learner: the definitive classic in adult education and human resource development*, 6th edn, Elsevier, Burlington, MA.

Lehmann, AC, Sloboda, JA & Woody, RH 2007, *Psychology for musicians: understanding and acquiring the skills*. Oxford University Press, Oxford Scholarship Online.

Liao, C-M & Masters, RSW 2001, 'Analogy learning: a means to implicit motor learning', *Journal of Sports Sciences*, vol. 19, no. 5, pp. 307-319.

Maclellan, E & Soden, R 2012, 'Psychological knowledge for teaching critical thinking: the agency of epistemic activity, metacognitive regulative behaviour and (student-centred) learning', *Instructional Science*, vol. 40, no. 3, pp. 445-460.

Mangels, JA, Butterfield, B, Lamb, J, Good, C & Dweck, CS 2006, 'Why do beliefs about



intelligence influence learning success? A social cognitive neuroscience model. *Social Cognitive and Affective Neuroscience*, vol. 1, no. 2, pp. 75-86.□

Maris, BE 2000, *Making music at the piano: learning strategies for adult students*. Oxford University Press, Oxford

McAllister, LS 2008, 'Evaluating teaching effectiveness in music', *The American Music Teacher*, vol. 58, no. 3, pp. 14-17.

Mitchell, C & Coltrinari, H 2001, 'Journal writing for teachers and students', in T Barer-Stein & M Kompf (eds), *The craft of teaching adults*, Irwin Publishing Ltd, Toronto.

Orlofsky, DD & Smith, R 1997, 'Strategies for adult keyboard learners', *Music Educators Journal*, vol. 83, no. 4, pp. 22-26.

Perreault, ME 2009, 'Singer's five-step approach: does every bit count?', Masters thesis, Florida State University, Florida.□

Schmidt, P 2005, 'Music education as transformative practice: creating new frameworks for learning through a Freirian perspective', *Visions of Research in Music Education*, no. 6.

Schutz-Bosbach, S & Prinz, W 2007, 'Perceptual resonance: action-induced modulation of perception', *Trends in cognitive sciences*, vol. 11, no. 8, pp. 349-355.

Self-theories: Growth mindset and fixed mindset n.d., viewed March 25, 2013, <<http://www.learning-knowledge.com/self-theories.html>>.

Singer, RN, Flora, LA & Abourezk, TL 1989, 'The effect of a five-step cognitive learning strategy on the acquisition of a complex motor task', *Journal of Applied Sport Psychology*, vol. 1, no. 2, pp. 98-108.

Singer, R, Lidor, R & Cauraugh, JH 1993, 'To be aware or not aware? What to think about while learning and performing a motor skill', *The Sport Psychologist*, vol. 7, no. 1, pp. 19-30.

Snyder, LG & Snyder, MJ 2008. 'Teaching Critical Thinking and Problem Solving Skills', *Delta Pi Epsilon Journal*, vol. 50, no. 2, pp. 90-99.□

Sterner, TM 2012, *The practicing mind: developing focus and discipline in your life*, New World Library, California.

Taylor, EW 2008, 'Transformative learning theory', *New Directions for Adult and Continuing Education*, vol. 2008, no. 119, pp. 5-15.

Taylor, A & Hallam, S 2008, 'Understanding what it means for older students to learn basic musical skills on a keyboard instrument', *Music Education Research*, vol. 10, no. 2, pp. 285-306.

Thompson, T & Musket, S 2005, 'Does priming for mastery goals improve the performance of students with an entity view of ability?', *British Journal of Educational Psychology*, vol. 75, pp. 391-409.

Uszler, M, Gordon, S & McBride Smith, S 2000, *The well-tempered keyboard teacher*, 2nd edn, Schirmer, New York.□

Westney, W 2003, *The perfect wrong note: learning to trust your musical self*, Amadeus Press, New Jersey.

Willink, KG & Jacobs, JM 2011, Teaching for change: articulating, profiling, and assessing transformative learning through communicative capabilities', *Journal of Transformative Education*, vol. 9, no. 3, pp. 143-164.□

Wristen, B 2006, 'Demographics and motivation of adult group piano students', *Music Education Research*, vol. 8, no. 3, pp. 387-406.

Wulf, G, Höß, M & Prinz, W 1998, 'Instructions for motor learning: differential effects of internal versus external focus of attention', *Journal of Motor Behavior*, vol. 30, no. 2, pp. 169-179.

Wulf, G & Lewthwaite, R 2009, 'Conceptions of ability affect motor learning', *Journal of Motor Behavior*, vol. 41, no. 5, pp. 461-7.

Wulf, G & Weigelt, C 1997, 'Instructions about physical principles in learning a complex motor skill: to tell or not to tell', *Research Quarterly for Exercise and Sport*, vol. 68, no. 4, pp. 362-367.

Zimmerman, BJ 1995, 'Self-regulation involves more than metacognition: A social cognitive perspective', *Educational Psychologist*, vol. 30, no. 4, pp. 217-221.

### **About the Author:**

**Leah Coutts** has been teaching piano for 11 years and has found a special interest in teaching adults. Her passion for understanding how people learn and how this translates into teaching methods has shaped her research pursuits.

Leah obtained a Bachelor of Music Studies with First Class Honours in 2009 from the Queensland Conservatorium of Music. Her studies focussed on how piano teachers may cater to different learning styles and personalities, as well as brain-based learning. Leah has since returned to the Conservatorium to complete her PhD, specifically exploring the area of adult learners at the piano.