

Podcast #8 Learning As Living Network The Music Educator's Crucible

Hello and welcome back to the Music Educator's Crucible. My name is Merlin Thompson and I'm the creator of this podcast series devoted to exploring music and education – in particular topics related to teaching and learning to sing or play a musical instrument. So, if you're a music teacher who teaches private or group lessons - in your own home studio or an institution - you've come to the right place. And I'll also mention that this series has lots to offer schoolteachers, parents, and community leaders as well. So be sure to tune in as often as you like. And before I get any further, I want to thank Musopen.org for making available another performance by Paul Pitman - Schubert's A major Piano Sonata. Much appreciated.

The topic for this podcast is – Learning – a topic that came to my attention in a slightly roundabout way. It's one of those situations – you know – where you figure something out in one area – which leads you to question what you're doing in another area – and before you know it – you've got this light bulb moment going that you never expected!

That's what happened to me – a couple of years ago. When I realized the process of teaching (the topic of podcast 4) had these two major anchors in #1 "teachers leading the way" and #2 "teachers following their students' lead". So I'm thinking – if the teaching process has this #1 lead and #2 follow situation going on, what would happen if we applied a similar strategy to the learning process?

Up until that point, I'd always thought the learning process was this continuous path of learning followed by more learning followed by more learning. In other words, #1 followed by more #1 followed by more #1. And while that depiction is to a certain extent accurate – I could see it didn't really take me very far. Then it dawned on me, the learning process starts with #1 learning – and it's followed by something quite extraordinary. It's followed by #2 forgetting. Yes- you heard me right. Learning is followed by forgetting. I mean – just think of how many times you've learned something one day. And the next day – what's going on? Well... You've forgotten some of it – anywhere from 1% to 100% of what you thought you'd learned.

Acknowledging forgetting as an integral part of the learning process, turned out to be a complete breakthrough - just the beginning of getting a fuller understanding of what the learning process is all about. Because as soon as I recognized that learning and forgetting go together, it opened the door for other themes to become part of the picture.

My plan in this podcast is to go more deeply into the learning process. To work through themes like forgetting, revisiting, confusion, plateau, letting go, refinement, and internalization. That's what this podcast is all about.

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Forgetting

As a theme in learning processes, I think it's safe to say that Forgetting isn't what we'd call a desirable outcome. When someone forgets something – we might even assume it's evidence of faulty character traits. How many times have you said to someone -

“Don't forget to... Da-da-da or Bla-bla-bla.”

And what happened next – the person forgot anyway. Even with your reminder.

Contrary to what you might think - forgetting isn't a sign of laziness, lack of attention, inefficient follow through, or negligence. Forgetting is actually evidence that the brain is working as it should. Of course, it can be annoying when someone forgets where they placed their house keys or what time they were supposed to meet a friend. But, there are a couple of upsides to forgetting we should consider before we dismiss it completely.

One upside to forgetting is concerned with the brain's way of actively filtering our experiences. Making sure that we don't suffer from information overload. If we remembered everything we ever experienced, we would on most occasions be as badly off as if we remembered nothing at all. We engage in active forgetting all the time – like when we need to lock in a new computer password, or start learning a new language. We block out old information and prevent it from resurfacing. Forgetting is what we do to actively keep distracting information at a minimum so that other signals can stand out.

The other upside to forgetting has to do with its muscle-building property – the way we use forgetting as the trigger for strengthening our learning. Like when forgetting means we search our memory for the ingredients in a dish we prepared last month, or struggle to find an Italian word on the tip of your tongue. This kind of internal searching is significant in helping to develop higher levels of performance than were originally present. Exercising things that have been forgotten allows learning to deepen, similar to way physical workout routines with days on and days off will stimulate your muscles and support overall personal health.

With my own students, I like to keep forgetting close by. For example – when my elementary student Peter shows up having forgotten two of his oldest pieces and learned two brand new pieces – I understand what's

happening from a filtering out perspective. While it might seem like I should just tell him about the benefits of playing all his repertoire everyday – I opt to support the practice of forgetting. I encourage Peter to exercise his old pieces only every second or third day. Knowing that some forgetting will take place, this is an opportunity for Peter to strengthen aspects that are already there. In this way, I'm purposeful about incorporating forgetting into my students' learning routines. I make space for forgetting – for their need to filter out distracting information and how by allowing for some breakdown in performance, students may drive their performance strengths to levels higher than they were originally.

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Revisiting

Throughout my teaching year, I frequently devote time in my own practice to learning new solo repertoire. When I recently started a new Beethoven sonata, I took it as an opportunity to really pay attention to my learning process. As per my usual progress, on day one I made it through a good section of the sonata's first movement. How much of it was I able to retain on day two? Well... let's just say that certain aspects made it through and I felt confident about them – that other aspects didn't survive in spite of my efforts – and that revisiting would be my next tool of choice.

Revisiting is all about responding to the learning breakdown that occurs from one practice session to the next. I like the word revisiting because it signals that I've been in this place before. It's like I'm revisiting a museum – but my intention isn't just to review my favourite exhibits from last time. No, this time around my purpose is to get a good look at the exhibits I missed on my last visit.

In terms of learning processes – revisiting means I'm back again – but I can't ignore what's already happened. There's a learning history that I need to take into consideration and a recognition that somehow I didn't come away with everything I needed. Which means that a re-application of my approach from the first time around will likely yield the same results. The whole point of revisiting is to broaden the practical and analytic perspectives we use to tackle the learning process.

For example with my students, revisiting has a variety of applications. Most recently - For Nathan, who likes to learn everything by ear –revisiting means getting out the score so he can practically pinpoint the spots where his ear is insufficient. For Jennifer, revisiting is analytic - figuring out which ending needs finger 4 and which needs finger 3, which moves to E flat and which moves to F sharp. For Austin, revisiting means translating a visually complex rhythm into the recognizable pattern of a catchy jingle. In this way,

revisiting is about implementing practical and analytic solutions to the challenges we all encounter in learning processes.

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Confusion

Have you ever felt bewildered or uncertain in your learning? Have you ever been perplexed about what to do next? How about feeling unsure with what's happening, what's intended, or what's required? Then it's most likely you know about confusion.

Let me introduce this section with a couple of stories. The first story from my university days has to do with a friend who owned a car and his habit of changing the route he took to drive to work every day – whereas I didn't own a car and my habit of taking the same bus to work every day. I don't remember why my friend changed his route – only that my reaction at that time was – you've got to be kidding me. It never occurred to me that I would deliberately change my bus route to work. I got to work with the most expediency possible. My friend's idea of using more than one route to drive to work - the idea seemed preposterous.

The second story is about my student Terry and her experience with Mary Had A Little Lamb. Lesson after lesson, it's her star piece. Then one day – almost completely out of the blue – Terry simply gives up in the middle of Mary Had A Little Lamb – exclaiming she cannot continue. It's just too confusing with her other pieces getting in the way. There's nothing she can do to go on.

What's the connection between these two stories? Well... at first glance, it might seem like there isn't any, so let me talk about Confusion for a moment.

As part of the learning process, Confusion may be described as that perplexing state when there just doesn't seem to be any clear option for our learning to go forward. It's as if everywhere we look, there are no solutions. Where does confusion come from? Going back to the brain's function of forgetting as a filter for our learning experiences, confusion surfaces because our forgetting filter blocks relevant details as easily as irrelevant ones for learning.

For an elementary student like Terry who's learning more and more pieces, the more she learns, the greater chance that what she needs to play Mary Had A Little Lamb may be filtered out. What can she do to prevent confusion from turning into a dead end? That's where the brain's complexity and my friend's habit of taking different routes comes into play.

We know for sure that the brain is an incredibly complex and interconnected circuit. And it's this complexity and interconnectedness that allows us to retrieve what we've learned through multiple routes. So when the brain's filter of forgetting results in confusion, the solution is to take advantage of the brain's complex circuitry and deliberately put in place alternate ways of getting from A to Z. In other words, my friend's habit of taking different routes.

My response to confusion in students' learning processes is to help them develop the habit of taking different routes. For elementary students like Terry – we sing the pieces with words. Mix up the order of the lines for singing and playing. Play with eyes closed. For intermediate students – we play by ear and use the score. Play with the beat. Use breath to ensure flow and support dynamics. I keep in mind what's appropriate and manageable for each level of students.

What I appreciate is how confusion functions as a reminder – that relying exclusively on one route to a destination may not be all that practical in the long run. Like my habit of taking the same bus route to work – no matter how efficient or successful – it pales in comparison to my friend's habit of taking different routes.

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Plateau

Let me tell you about my student James – Sometime close to his fifteenth birthday, James revealed how he was questioning his own musical development. Was he making any progress? Was he getting any where with his efforts at the piano? I could see he wasn't entirely sure how to evaluate what was going on. His self-diagnosis of being on a learning plateau was disconcerting for James because progress seemed to elude him.

What could I do to help James? From my perspective, it seemed that James was doing everything he could within his busy timeframe of school, friends, and family. He was motivated. He put in time when it was available. Was something missing?

Here's what happened during a lesson.

"James", I said. "How can you turn ice into water?"

James responded, "Put it in a pot on the stove and turn on the heat."

I said, "Right. If you want to turn ice into water you need to raise its temperature. Now let's suppose, you've got a chunk of ice at a temperature of minus 30 degrees Celsius and you put it on the stove. And you raise the temperature by one degree Celsius every day. How long will it take before the ice melts?"

James responded, "30 days."

I continued, "Right again. It'll take 30 days. And during that time, not once will you see any change in the condition of the ice. It'll be just as frozen on Day one as on Day 29 – even though every day you've raised the temperature. My impression is that what you're trying to accomplish is on the same level as this problem. You're trying to improve your piano skills with small improvements - one degree at a time – which means it may take some time before your efforts add up to results you'll be able to identify. The challenge you're facing is the matter of time. And you'll notice I'm not saying your challenge is to work harder or set better goals. I'm saying you can improve your piano skills by sticking with small changes until - over time - they become habits you can depend on."

James' situation really got me thinking about plateaus in various contexts. How for example – a plateau in learning processes is identified as a period of little or no progress that if at all possible, should be avoided and quickly gotten rid of. Whereas in Mother Nature's great outdoors, I find that a plateau isn't a place to avoid or hurry away from. It's a place with immense destination appeal where I actually want to spend some time: all because a plateau most likely has an amazing view – a view that shifts my perspective. On a plateau, I'm face-to-face with the largeness of it all – where change occurs different from my usual daily life. On a plateau, things seem to move more slowly – through seasonal cycles – through the passage from one year to the next. It takes time to enjoy the view. There's no rushing here.

For James' concern regarding making progress, it seems worthwhile to consider a plateau view of learning: to slow things down long enough to appreciate that James' learning takes place in the large and small cycles of his personality, his emotions, the questions he asks and the answers he finds - the relationships that make up his community – the connections that bring meaning to his interests. What strikes me is there's a lot to consider in the view from the plateau. So it makes sense to stay long enough to take it in.

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Letting Go

Many times in working with students, I've turned to letting go as the strategy of choice for learning. I remember my student Seth who collapsed in the middle of a piece, exclaiming that he couldn't possibly continue because he was completely overwhelmed by the number of things he was trying to keep track of – the beat, the tone, the phrasing – you get the picture. The solution? My suggestion was to let go of it all and just be in the piece without trying to control every precise moment.

As a strategy in learning processes, letting go may feel counter-productive because it seems like it's going against what we're accustomed to doing. Like we're giving up various aspects that previously guaranteed successful learning.

I like to think of letting go as lightening the load. Not getting rid of the load entirely. Just lightening some of the weight that comes from our attempts at controlling what's going on. Letting go means we're still in touch with what's happening in our body, mind, emotions, and world in a way that differs from controlling these things. It's about being aware of what's going on without fixating on every detail.

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Refinement

Developing basic fluency, higher level mastery, and fine-tuning – these are all aspects of learning that characterize refinement. When we incorporate refinement in learning processes, we're attentive to a couple of complimentary areas. Namely: the establishing of basic skills and knowledge and the transforming of the same fundamentals into something that has higher levels of ease, practicality, and execution. In other words – refinement is about setting things up well and making recognizable and helpful improvements.

Here's a scenario from my teaching – a workshop master class. Teenage Jessica steps forward, hands me her music, and asks, "Do I have to play it my teacher's way?"

I reply, "No I think we can start somewhere else. Why don't you show me what you've got?" After she's finished playing the piece, I say, "Thanks for that. Let's see what happens if we change things up a bit. I'm curious to see what it would sound like if you played a *blue* version of this piece." Jessica looks doubtful, so I add, "There's no right or wrong way. Let's see what your imagination has to offer." After she finishes playing the *blue* version, I say, "Thanks so much. How about a *red* version?"

And so I continue for several more interpretations, watching with great interest as – on that day - Jessica excelled at versions appropriate to pop stars Michael Jackson and Taylor Swift before I finally ask her to play it her *teacher's* way. My point was to help Jessica make refinements to her playing by starting with her own vitality, gradually progressing through her own imaginative resources, so that she might experience for herself how she has more than enough creativity and proficiency to accommodate her teacher's way.

My impression is that refinement in learning processes has – for several centuries – been dominated by the well-intentioned goals of learning

efficiency. The idea that - learning is more efficient when students develop fluency and mastery through carefully structured refinement processes. While I have no problem with efficiency, I'm also aware that teachers have choices to make in terms of how they'll guide students' refinement processes. On the one hand, teachers may incorporate structured step-by-step refinement processes for students to follow. The advantage is that students get equipped with proven shortcuts to refinement. There's no guesswork as everything is laid out. The disadvantage - students may become impatient or even resentful of teachers' constant assistance and dissatisfied with their own passive participation.

In contrast, teachers may shift students from passive follow through to active participation through what I call - a multiple ownership approach - such as the one I just explored with Jessica. Right from the first lesson, teachers may foster multiple ownership by exploring students' resonant and harsh tone, students' own stiff and flexible body posture, students' own high and low energy. As students progress, teachers may assist students' refinement by introducing increasingly sophisticated musical concepts that meet and go beyond the repertoire's needs - even on occasion playing with Michael Jackson or Taylor Swift in mind.

The advantage of a multiple ownership approach is that it empowers students as genuine participants in their own refinement processes. And gets away from the idea that teachers' perspective is the only one that matters. It's an opportunity for teachers to promote learning as an interweaving of teacher-led and student-led explorations. In this process, students develop the practical awareness of how what they do impacts what they achieve.

The disadvantage - well... for me there aren't any. However I readily acknowledge that some teachers may be fearful of a multiple ownership approach. They may worry that multiple ownership means students have free rein and teachers are mere bystanders. That's why I emphasize the interweaving of teacher-led and student-led interactions. Teachers may also be uncomfortable with validating something like harsh tone or a Michael Jackson interpretation - worried that such explorations may derail students' refinement process. Yet, in my own experience, I've observed that students' refinement of musical elements may survive and even flourish despite the arrival of radical interpretations and student idiosyncrasies.

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Internalization

I like to think of internalization in learning processes as that confidence-boosting state when our learning settles into a place of permanence. The feeling of assurance when we can honestly say - that what we've learned

won't disappear. Internalization may be the result of unconscious and conscious efforts: Unconscious internalization being skills and knowledge that take shape without our awareness – like learning to speak our mother tongue; - whereas conscious internalization involves the investment of time and effort – like learning to ride a bike.

What seems remarkable is our intuitive push to internalize learning. We know from our own experiences that without strengthening and solidifying our learning, the next time we want to tap into it – it may or may not be there. So we repeatedly test our skills and knowledge in order to make sure our learning doesn't disappear. Each of the learning aspects explored thus far in this podcast may contribute to internalization – forgetting, revisiting, confusion, letting go, plateau, and refinement. To round out this list, I've got one more aspect – challenges – the infinite number of ways in which we deliberately put our learning to the test.

Here's a story from my studio - Ethan had arrived at an important destination in his piano studies just weeks before his first graduation concert. Soon, in front of family and friends, Ethan would perform a total of 20 pieces from memory. What could he possibly do to get ready for this major undertaking? It seemed like he'd already done it all. Then it dawned on him. There was something he could do that he was certain no student had ever done before. So, for his final days of practice, Ethan tested himself in a way that indeed no other student ever had. Piece by piece, carefully at first and then with greater confidence, Ethan played each piece while standing on one leg with the other crossed. By all available standards, it was an incredible human accomplishment!

Meaningful challenges are in great abundance and come in all sizes and shapes. They address tone colour, emotion, musicianship, breath, beat, no thinking, tempo, visual aspects, by ear, with the score, imagination. Challenges may be teacher-introduced and student-led. They're most valuable when a variety of challenges is used to support internalization.

For challenges to be effective, they must be personally compelling, appropriate for the student's age, and suitable to the student's level of study. This means that Ethan's challenge of standing on one leg is great for an eight-year-old, but runs out relevance for him as a teenager. Challenges cannot be so easy that students will think they're useless or of no value. They cannot be so hard that students will have no chance of successful completion. It also makes sense that challenges should strengthen applicable skills or knowledge – for example, reciting the alphabet while performing repertoire may strengthen learning, but does that learning have a real-life musical application? Furthermore, what's challenging one week may not be challenging the next.

What seems remarkable is how challenges elevate the role of repetition in the process of internalization. A steady variety of challenges stimulates and supports internalization without getting stuck on repetition as isolated drills that reinforce the same perspective week after week. That's not to devalue isolated repetition because, of course, everyone needs a certain amount of specific repetition to become familiar with any new skill or material. However, internalization involves more than deciding how many times students should repeat an activity – whether it's a matter of two, five, ten, or fifty repetitions.

I like the way challenges – and I emphasize a complete spectrum of challenges – bring spontaneity and immediacy to the process of internalization. This means that internalization isn't a destination off in the distance to be achieved at some indeterminate date. Internalization is taking place right now as a result of students' desire to invest time and energy in challenges that matter.

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This podcast has focused on exploring the various themes found in learning processes: forgetting, revisiting, confusion, plateau, letting go, refinement, and internalization. Having more or less worked out what these themes look like, it seems appropriate for me to consider how they relate to each other – mostly because in presenting the themes in a linear order, you might assume that I'm thinking of learning as followed by forgetting as followed by revisiting as followed by confusion and so on.

So let me say for sure – learning as going step-by-step up the ladder is not what I've got in mind.

Staying with a visual metaphor for a moment, I envision the various themes in learning processes in the form of a living network. And I'm particular about the words living and network. I use the descriptor "living" to underscore how cycles of growth and rest – emergence and regression – affect learning processes over time. Learning processes have an ongoing evolving quality that adapts to past resources and gaps – present needs and inspirations – as well as our wishes for the future. For the network side – I envision learning as this immensely complex interconnected circuit where themes run simultaneously in multiple directions and with endless unexpected connections. We find themes in clusters and on their own. In network simplicity – learners go smoothly from start to finish with direct accomplishments. In network complexity – learners experience unbelievably circuitous and time-consuming routes – often complete with dead ends, U-turns, false starts, and incomplete endings. Everywhere there is the possibility for unpredictability, flexibility, hidden solutions, planning, and random discovery.

What draws us throughout the entirety of our lives to this living network of learning processes?

I like the way UNESCO – the United Nations Educational, Scientific and Cultural Organization – offers four pillars to answer this question.

We learn to know, to do, to live together, and to be.

Learning is what we do to acquire knowledge and skills, to develop understanding of the world and participate in it. Learning is the means by which we come to understand ourselves and experience the fullness life has to offer.

Learning – as living network of forgetting, revisiting, confusion, plateau, letting go, refinement, and internalization - is a cornerstone of the thriving, secure, and flourishing individual. Learning brings momentum and direction to our journey – possibly involving adventure and risk. It conjures up images of living the good life with autonomy, mastery, wellbeing of heart and mind, our emotions, body and soul, even our imagination.

With living the good life as a final point, I'll wrap things up for now. Thanks so much for sharing your time with me today as I explore another topic related to music and education. It means a lot to me.

Until the next podcast – this is The Music Educator's Crucible – and I'm Merlin Thompson. Cheers!