Nurturing Creativity in Music Education: A Conceptual Framework and Practical Applications for Secondary Music Classrooms

by

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Abstract

Creativity has recently been increasing in importance with many organizations around the world recognizing the need for creative individuals. Indeed, many believe that creativity should be taught in educational systems to prepare students to be flexible and adaptable in our rapidly changing world. Despite this, pedagogies, and educational strategies, for nurturing creativity in classrooms remain limited. The goal for my project, then, is to respond to this need by contributing to current efforts into developing a framework for creativity in education. This is done through this project in two parts.

The first section of this project is a synthesis of literature where I distill creativity research in a way that is meaningful for workers in education by emphasizing essential concepts in teaching and learning. The relevant ideas and theories from the literature are categorized into four pillars: establishing a creativity conducive environment, designing tasks for nurturing creativity, developing success criteria for creativity, and assessing creativity in the classroom. The sections are presented sequentially beginning with the most foundational ideas that can be implemented into classroom teaching. The second section is composed of my conceptualizations of classroom activities for secondary music classrooms that target creativity by making use of the ideas described in the synthesis of literature. Each activity targets a different area of music that would typically be learning goals in school curricula: reflecting, analyzing & responding, improvisation, composing/arranging, and performing.

My hope is that this work may guide music teachers, pre-service and in-service, to enhance their ability to foster creativity in their own classroom teaching. While this project is targeted towards secondary music education, I believe that this work will also be a step towards developing pedagogies for creativity in all subject areas and grade levels.

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Introduction

Ever since I was a child, music has been at the heart of everything I do. My musical journey started out as a self-taught church drummer at the young age of six years old. I later discovered school ensembles and quickly seized every opportunity I could to be involved. Whether it was a concert band, jazz band, percussion ensemble, orchestra, or choir, music was what I looked forward to every school day. My closest friends were those I made through ensembles, my fondest school memories are those involving our performances, and my music teachers were among my biggest inspirations. In fact, they led me to discover that my life's vocation would be to follow in their footsteps as a teacher; to pass down the enjoyment of learning, especially music, to future generations as my own teachers have done for me.

I then went to university to complete a Bachelor of Music. There I got to be well acquainted with classical percussion and had my musical life's peak accomplishment of winning my school's biggest music competition, the Concerto/Aria Competition in 2019. My prize for winning was the opportunity to perform a complete marimba concerto with the school's orchestra. So far, this was the biggest musical challenge I ever faced in my life, and I take pride that I was able to take it on.

Not too long after this performance, however, came the COVID-19 pandemic. It was a rather abrupt end to my Bachelor of Music, and harsh transition into a Bachelor of Education which ended up being fully online. Admittedly, completing teacher education from a computer screen was tough. Being so used to making music together with others in person, it seemed impossible to teach a music class online, let alone share in the joy making music together. To my surprise, though, it was very much possible. And, I really enjoyed trying to find every way to make online music learning work such as making recording projects and using online collaborative workspaces.

This ended up sparking an interest to learn more about innovation in teaching music which led to my decision to complete a Master of Education. One noteworthy course I took was one on creativity in research. In this course, I had the opportunity to reflect on my own creative experiences and quickly discovered just how big of a role creativity had in my life. From finding success as an autodidactic drummer, to preparing a competition-winning marimba concerto, then to working around a novel worldwide issue of figuring out how to teach online, I truly believe that my ability to be creative played a crucial role in finding success.

I quickly made the connection between creativity and music education but was surprised to learn how much work there is still left to do. As such, I decided that the culmination of my master's degree would be to give back to music, which helped me get me to where I am in my life, by sharing my own efforts into bringing creativity research into music education. Though this project is just one small contribution towards the vast amount of work needed, my hope is that this can be a step in the right direction towards a greater framework for creativity in education. I also hope that this project is only one of many to implement creativity research into practical applications. In the future, I would like to see someone extend these ideas for incorporating creativity into teaching music even further. Perhaps we will even get to see how the teaching of other subjects, whether it is in the arts, the humanities, STEM, the skilled trades, etc., could make use of creativity.

PART 1: SYNTHESIS OF LITERATURE

Why Creativity Is Important

Creativity is considered as one of the "21st century competencies", which are the abilities that are vital to success in the age of rapidly advancing technology and the ever-changing workforce (Dede, 2010). In the 21st century, one of the major innovations that influenced society at a global scale was the advent of social media with its ability for content creators to reach a massive audience very rapidly. Notably, social media has become essential for businesses (Adhiatma et al., 2023) such as for advertising, and has become a major platform for disseminating information (Hudders et al., 2021) such as news and research.

On the other hand, technological advancements may also cause other industries to quickly become obsolete (Tredinnick, 2017), specifically by replacing workers with automated systems. The current surge of artificial intelligence (AI), for example, has recently become a pressing subject of discussion as developers are still investigating its potential. As AI technology continues to advance, the threat of obsolescence may be increasing for many industries on an unknown timeline.

Consider, then, the role of schools as the world continues to evolve. Education is meant to prepare students for life after school by developing the knowledge and skills they need to be independently functioning members of society. However, with how quickly the world is changing, workers in education simply cannot know for sure what students' futures will look like. Current students may end up working in sectors that do not yet exist, or may be brought up towards a line of work that will no longer exist. Creativity, in addition to the other 21st century competencies, offers students meaningful skills needed to be successful as they move towards an uncertain future. Creative thinking supports adaptability and flexibility in learning and work to face complex challenges more readily (PISA, 2022). While creativity has been a subject of interest in research for a significant amount of time, notably since the work of Guilford (1950), more recently, organizations around the world are recognizing the need to develop innovative and creative individuals to address emergent challenges (e.g., OECD, 2010).

Within education, nurturing creativity in formal learning has also been shown to support the learning process itself. Creative thinking enables students to interpret novel experiences in ways that are personally meaningful (Beghetto & Kauffman, 2007). In doing so, students can discover and develop their own skill set in ways that are personally relevant (Lucas & Spencer, 2007). Furthermore, exercising creativity within the learning process has also been shown to support learner motivation. As creative thinking tends to involve skills surrounding taking risks and persevering through difficulty and uncertainty (Lucas, 2016), it has the potential to enhance students' self-efficacy and ability to persist through challenges in achieving academic success. Overall, the ability to be creative has been observed to make learning new skills, and developing proficiency in them, more enjoyable and motivating (Csikszentmihalyi, 1996).

Engaging in creative thinking can also improve a range of other skills, identified in education systems, that are necessary for academic and career success, including metacognition, interpersonal and intrapersonal skills, and problem-solving skills (PISA, 2022). Indeed, creativity enhances the development of the skills needed for students to be successful in and beyond school regardless of discipline and thereby supports the role of education, to prepare students for success in life and society by developing the competencies needed (PISA, 2022).

Rationale for this Project

Despite the recognized value of creativity, incorporating creativity-nurturing pedagogy in educational programs remains a challenge for educators. Research indicates that educators are generally unprepared to teach creativity in their classrooms (Gralewski & Karwowski, 2013). Indeed, education programs for pre-service teachers and continuing education for in-service teachers do not usually emphasize the teaching of creativity. Furthermore, some creativity scholars claim that current education systems may even stifle rather than nurture creativity (Kim, 2011). This would indicate a disconnect between teachers' understandings of creativity and what research says about creativity-nurturing pedagogy.

Given the lack of preparedness to teach creativity, it unsurprisingly follows that there are inhibitions that cause teachers to shy away from the subject of creativity in their teaching. Many teachers report feeling that creativity is too far from curriculum expectations to be implemented into teaching (Mullet et al., 2016). Even in curricula where creativity is explicitly involved in learning outcomes (e.g., Ontario Ministry of Education, 2010), many teachers also report feeling that creativity is too close to one's personality to be taught and assessed in the same manner as other learning outcomes (Lucas et al., 2013).

These deterrents are not unwarranted as teaching creativity does have the potential to be counter-productive (Kaufman et al., 2019). An uninformed approach to teaching creativity may very well come with adverse consequences. For example, an approach to creativity that promotes mimicking and is driven by test scores may cause students to adopt the educator's perspective of creativity, rather than developing their own, and cause engagement with creativity to be driven by seeking praise or achieving higher grades (Beghetto & Kaufman, 2014).

Overall, these barriers to fostering creativity in classroom teaching indicate that there is a need for teachers to have more support regarding its teaching and learning in an educational context. Though research in creativity has been surging since the 1950's (Plucker et al., 2004), the focus on pedagogies and educational strategies for developing creativity in classrooms is indeed very limited (Davies et al., 2013). Nevertheless, there is research that can inform creativity pedagogy. My project involved examining the existing literature, then determining how to apply the research into classroom practices.

The following sections comprise a synthesis of creativity research with an emphasis on its teaching and learning. The literature is organized into four pillars of support for creativity-nurturing pedagogy, each pertaining to an aspect of classroom teaching practice. These sections are also presented in a sequential order beginning with the most foundational ideas that can be implemented into classroom teaching. Each section is further divided into a number of subsections that describe the key principles of each pillar.

I. A Creativity Conducive Environment

For schools to nurture creativity, the classroom must first be an environment where students feel safe using and developing their own creativity. As creativity is a complex construct, students must first be able to define creativity in a way that is meaningful in a classroom context. Then, the teacher must promote attitudes and behaviors that allow students to feel safe in using their creative skills. Lastly, a creativity-conducive classroom must be established and maintained by the educator using actionable practices that support students throughout their development.

Defining Creativity for Students

To begin fostering creativity, we must first understand precisely what creativity is. Doing so in a way that is meaningful for students will allow them to better understand how to direct their efforts for developing their creativity skills in a school setting. Defining creativity, however, has proven to be quite a complicated and challenging task. As Torrance (1998, p. 43) describes, “much of [creativity] is unseen, nonverbal, and unconscious. Therefore, even if we had a precise conception of creativity, I am certain we would have difficulty putting it into words.”

In research, creativity is generally understood to be the ability to generate ideas that are novel and useful within a social context (e.g., Plucker et al., 2004). In essence, creativity is a skill that enables the production of new, unfamiliar ideas that are somehow valuable to oneself or to others; usually, this means that the result of creative work expands on one's knowledge and/or solves some practical problem. The particular emphasis on ‘novel’ and ‘useful’ as key elements are widely used as the foundation to defining and understanding creativity. These elements are, however, very subjective and primarily a result of an individual’s interactions and perceptions with a social environment, knowledge, and experience. Some scholars, then, theorize that the definition of creativity is dynamic (Walia, 2019). This means that creativity can be different between individuals and that there exists a diversity of valid social contexts where one may be creative.

At a large scale, one’s individual understanding of creativity is influenced by cultural and societal norms. Notably, individualist and collectivist cultures tend to place more value on the uniqueness and usefulness of creative ideas respectively (Rinnie et al., 2013; Shao et al., 2019). Furthermore, as different fields of knowledge require different skills to be creative (PISA, 2022), one’s knowledge and expertise also influence how one understands creativity. Thus, even amongst individuals within a culture, one’s prior knowledge and skill set can affect how one perceives novelty and value in a creative endeavor.

It should follow that creativity is not bound to any particular subject area. Though commonly thought of as directly related to the arts (this is called the “art bias” which is “the misunderstanding of creativity that equates it with artistic talent … only individuals with artistic talent are labeled creative" (Runco, 2007, p. 384)), in fact creativity exists and can be meaningfully utilized across, and between, all types of subject areas. Science and technology, for example, are often thought to be associated with the creativity of invention which is often demonstrated through practical problem solving (Glăveanu, 2018). It is critical, at this point, to recognize that creativity is not exclusive to the arts, but can be exemplified with respect to any field of knowledge.

For teaching and learning creativity, recognizing the interdisciplinary nature of creativity is crucial to prevent inhibitions to one's creative potential and self-belief in creativity development (Glăveanu, 2014). Indeed, even the most mundane, everyday tasks can have creative potential within them and can influence one's understanding of creativity. Solving problems in personally unfamiliar situations is often a daily occurrence and, though seemingly insignificant, can play a significant role in developing a conception of creativity. Creativity scholars categorize this as 'little c' creativity (Craft, 2001), with examples including "arranging photos in an unusual way, combining leftovers to make a tasty meal, or finding a solution to a complex scheduling problem at work" according to The Programme of International Student Assessment (2022, p. 10). Creativity on such a scale can be demonstrated by all people, can be developed meaningfully in an educational setting, and is therefore an ideal target for nurturing creativity in school settings (Kaufman & Beghetto, 2009).

Overall, to establish a classroom environment for creativity nurturing, students must begin by understanding that creativity is not a singular, definitive construct, but a result of their personal experiences; naturally, this should create differences in how they understand creativity, specifically with how they find value in novel experiences. With the diverse backgrounds of students should come diverse interpretations of creativity; what is new to one student may not be new to another, and what is valuable to one student may not be valuable to another. Differences in interpreting creativity may very well exist between the students and the educator. It is also worth noting that these personal definitions of creativity can change over time, as do one's values. For students, this could mean that accurately describing their personal definition of creativity may take a long time and may benefit from being revisited periodically.

Attitudes Towards Creativity

After students can articulate some semblance of their own conception of creativity, students must then shape certain attitudes about creativity to be ready to engage their creativity skills through classroom activities. Namely, students must first believe they are capable of demonstrating creativity and that it is a trainable skill. Then, students must also be willing to engage in these activities and exercise their own creativity in the classroom.

The belief in being capable of successfully producing creative work, called creative self-efficacy, is critical in maintaining motivation during progress towards creative goals (Beghetto & Karwowski, 2017). Indeed, all are capable of demonstrating creativity, particularly at the 'little c' level (Kaufman & Beghetto, 2009), and keeping students focused at this level is of the utmost importance. With the added idea that creativity is personal, students should also aim to exemplify creativity in a way that feels new and valuable to themselves personally, and must not feel pressured to demonstrate the greater 'pro c' or 'big c' creativities which aim to be creative to larger groups of people, or to society at large (Kaufman & Beghetto, 2009).

The willingness to purposefully engage in creative endeavors is thought to be driven by 'openness/intellect', particularly with 'openness to experience', described as "the receptivity to engage in novel ideas, imagination, fantasy aesthetics and emotions" and 'openness to intellect', which is "receptivity to engage with abstract and complex information" (PISA, 2022, p. 14).

Openness, however, is thought to be an innate part of personality; specifically, openness to experience is thought to be preferable to creative achievement in the arts and openness to intellect for the sciences (Kaufman et al., 2016). As they are potential predictors to creative success, it is worth exploring the possibility of employing strategies to encourage curiosity and exploration as a means to promote openness in a classroom.

Once students are already participating in creativity activities, a classroom environment must continue to invite creativity by promoting behaviors that support creative expression. Lucas' (2016) five-dimensional model of creativity describes the ways of thinking and acting, or 'creative habits of mind', that can result in creativity:

1. Inquisitive: wondering and questioning, exploring and investigating, challenging assumptions.
2. Imaginative: playing with possibilities, making connections, using intuition.
3. Persistent: sticking with difficulty, daring to be different, tolerating uncertainty
4. Collaborative: sharing the product, giving and receiving feedback, cooperating appropriately.
5. Disciplined: developing techniques, reflecting critically, crafting and improving.

Notably, many of the creative habits of mind counteract common creativity-stifling attitudes and behaviors that arise from educational approaches that tend to discourage creativity. Contrary to what they are commonly led to believe in other classes, in a creativity-nurturing classroom students must be willing to take risks, openly make mistakes, and be able to use them as part of the learning process. As this can be a source of frustration, students must also be encouraged, and feel like they have support available to them, to confront challenges and face them with uncertainty. Even after students find solutions to problems, they can continue to further extend their creativity skills with the ideas that solutions can be improved, problems can have multiple valid solutions, and that a particular solution might not be the best in all situations.

The Role of the Educator

The educator plays a significant role in helping students understand what creativity means to them personally and to shape the attitudes needed to develop creativity, as with the learning of any other construct. Indeed, teachers are the key persons to perpetuate a classroom that is conducive to creativity as their own attitudes towards creativity have the ability to boost or inhibit students' creative self-efficacy (Beghetto, 2006). It is important, therefore, for a creativity educator to not only employ practices that promote creativity, but also actively avoid ones that may stifle it.

In addition to promoting the aforementioned attitudes that are conducive to creativity, Nickerson (2010) proposes the following as particular teacher attitudes to be avoided to prevent teacher intervention from being a hindrance to student creativity:

- Promoting a fear of authority, strict adherence to prescribed steps, and a singular view on creativity;
- discouraging deviation from one correct method to solving problems, alternative perspectives from that of the teacher, curiosity and inquisitiveness, and finding enjoyment in creative learning/problem solving/expression;
- imposing the beliefs that creativity is rare and only demonstrated by some, and is unchangeable in a person.

In making active efforts to promote favorable attitudes and prevent adverse ones, teachers can be leaders by example, and be critical sources for actionable feedback, and a facilitator for creativity in students.

It is worth noting that this notion of teaching and learning supports a constructivist learning paradigm which modern education in general is leaning towards (Koptseva, 2020). This perspective on education views learning as a "mental construction . . . where students learn by fitting new information together with what they already know" (Bada, 2019, p. 66) and teaching takes learners' prior experiences into account during the learning process, viewing the role of the educator as a facilitator of learning rather than viewing learning as a transfer of knowledge from teacher to pupil. This is reminiscent of the discussion that individual experiences shape one's definition of creativity and, therefore, allows creativity to be in line with the constructivism learning paradigm.

II. Creativity Nurturing Tasks

Once students develop an understanding of their own definitions and attitudes towards creativity, students may be introduced to activities that engage and develop their creativity skills. For tasks to be suitable for classroom use, they must utilize knowledge and skills within a specific domain. To engage creativity, these tasks can enable students to use these domain specific skills to advance their knowledge through tasks involving creative problem solving. To preserve productivity and engagement, and optimize creativity development, the objectives of these tasks must be flexible; it is necessary that challenges can be adjusted in proportion to abilities.

Domain Specificity

Although personal definitions of creativity are interdisciplinary in nature, the same cannot be said for the manifestation of creativity. Given the previously mentioned varying definitions of creativity between disciplines, the skills required to demonstrate creativity are also thought to be domain specific (Baer, 2016). In fact, some research indicates that creativity skills within a particular domain are not transferable to creativity in others (Fasko, 2001). This suggests that tasks for creativity must be domain specific, and equally, domain general tasks may be inadequate for developing the creativity skills that students may need in the real world. Some scholars even argue that creativity nurturing should be task-specific, and target creativity within subdomains to be meaningful in a school setting (e.g., Barbot et al., 2011; Pretz & McCollum, 2014).

Incidentally, the necessity of domain-specific tasks addresses a common barrier to creativity implementation in teaching. One main cause of hesitation to incorporate creativity in classroom teaching is that it is often perceived to be too unrelated to curriculum expectations to be a valuable use of class time (Craft, 2003). The need for domain specificity would then imply that creativity nurturing must utilize the knowledge and skills described by curricular expectations to be meaningful and relevant to students. It is, however, important to consider the lack of transferability of creativity between domains; this would suggest that research must be done with respect to a particular domain to fully understand how creativity can be nurtured in that area. The domains of creativity, and thereby its transferability, are still in need of further research to be fully understood, however (PISA, 2022). Though this literature review and the sections following are designed with one particular domain in mind (i.e., music), further work to examine creativity education in other disciplines, and future research on the transferability of creativity nurtured through education, may be an area of great interest to creativity scholars.

Knowledge Advancement

With domain specificity in mind, how can creativity be targeted directly? Indeed, with the increasingly apparent exigency of creative individuals in all sorts of workplaces (e.g., OECD, 2010), it may be of interest to educators to target creativity directly rather than treating it as an incidental outcome of regular instruction. With many viewing creativity and curriculum as mutually exclusive, we must consider how creativity manifests within a particular discipline to understand how to activate learning in both. Knowledge advancement, referring to “the purposeful act of building up and iterating on ideas” (PISA, 2022, p. 17) is thought to be a key indicator of creative success and can be used as the central goal for creativity tasks in schools. Tasks that make use of curricular knowledge and skills to solve problems in various unfamiliar contexts may have the potential to be effective tasks that also nurture creativity.

One noteworthy form of knowledge advancement is ‘creative problem solving’ (CPS). This type of problem solving is distinct from regular problem solving with three distinct characteristics: the process first requires identification of the problem and understanding the challenges, then has problem-solvers generate and iterate multiple ideas towards potential solutions, and finally requires appraisal of solutions to determine the overall effectiveness of solutions; these phases can be treated as a cycle to improve on initial solutions (Treffinger, 2007). In a curricular context, a CPS task would involve students identifying the necessary knowledge and skills then using them to address a complex problem with no clear solution. Particularly by making sense of the problem and evaluating a variety of potential solutions, students would be able to expand on their understanding of specified curriculum content and improve their skills in that subject area alongside creativity in a meaningful way.

CPS tasks are ideal for creativity nurturing as they have the potential to stimulate two essential cognitive skills that are used in creative work: divergent and convergent thinking. Early research to identify creative persons often used divergent thinking, the mental process of generating a wide breadth of ideas in response to a given problem, as an indicator and measurement of creativity; convergent thinking is often thought to be antithetical, being the mental process of generating a single optimal solution (Guilford, 1957). More recent research, however, recognizes that both can be utilized in generating creative solutions to problems in different domains (Glăveanu, 2018). For CPS, divergent thinking is primarily activated through idea generation and iteration, and convergent thinking mainly takes place in appraising the overall effectiveness and appropriateness of solutions.

Additionally, tasks of CPS are initiated by problem finding which is recognized as an indicator for emerging creativity (Runco & Nemiro, 1994) and a catalyst for creative work (Starko, 2018). The ability to identify and understand problems activates both divergent and convergent thinking as users need to generate a variety of possible issues while considering which ones are meaningful to address. Within an educational context, problem finding also has the capacity to engage the higher-order skills of Bloom's revised taxonomy (Anderson et al., 2001) of *analyzing*, *evaluating*, and *creating*.

Flow: Maintaining Engagement in Creative Work

Once creativity nurturing tasks can be assigned to students a foreseeable issue in implementation is in maintaining students' ability to stay engaged in the given task. As mentioned previously, frustration is to be expected when exercising creativity, especially given that creativity tasks are unlike those traditionally given in school settings. This is important to address as 'persistence' is a creative habit of mind (Lucas, 2016). Interestingly, the ability of creative people to stay motivated throughout creative challenges has been studied in research, particularly in relation to the theory of flow.

The seminal work of Csikszentmihalyi (1990) examined the psychology behind ‘optimal experience’ and resulted in flow theory. In essence, flow is a mental state of being where one is absorbed in an activity and loses track of time; the sheer enjoyment of the activity is enough to persist through the challenges that arise. He found that flow can be seen in people who engage in creative work of various types including the arts, athletics, and even academia. Particularly, he noticed that flow was deeply connected to maintaining intrinsic motivation during tasks by balancing one’s abilities with challenges. When challenges surpass abilities, frustration arises and when abilities exceed challenges, boredom ensues.

This begs the question of the potential for flow to be used in a classroom setting to sustain motivation in creative work. Interestingly, the theory of flow has already been applied to classroom teaching, notably in Liljedahl’s (2020) ‘Building Thinking Classrooms’ framework, used to promote thinking skills in a mathematics classroom. This work utilizes the theory of flow as the basis of one of 14 major teaching practices which include using hints to ease the challenge when students experience frustration and extensions to advance students’ abilities as they progress through tasks.

With flow already having a practical application in teaching outside of a creativity context, there exists the possibility for the theory of flow to be of value to teaching practices that are creativity focused, specifically with the notion of balancing comfort and challenges to maintain engagement and motivation. Flexible, refinable success criteria are identified as a key component for students to actualize creative work (Bolden et al., 2023), discussed further in the following section. In terms of tasks for creativity, the nature of the CPS stage of identifying the problem and understanding challenges can involve intentionally taking measures to ensure an appropriate balance of challenge and ability, and the stage of assessing solutions may be where opportunities arise to increase the challenge appropriately. This should enable tasks to be designed in such a way that challenges have room for adjustment to suit individual ability, thereby allowing flexible success criteria.

III. Success Criteria for Creativity

As students practice their creative skills through creativity-nurturing tasks, and develop their understanding of their own creativity, they must identify the elements involved in achieving their creative goals. In doing so, students will be able to define the success criteria involved in using their creativity to accomplish creativity tasks. To support students' individual understanding of their own creativity, students must be involved in the development of creative success criteria and have the ability to reflect and refine their success criteria as they work towards their creative goals. Furthermore, success criteria should be oriented around the *processes* involved, rather than the end product, with a particular emphasis on the actions taken towards overcoming challenges.

Student-Constructed Criteria

Success criteria refer to the qualities of successful work that indicate achievement of a learning goal (Glasson, 2009). Establishing learning outcomes, through success criteria, can indicate growth and progress throughout the learning which, in turn, supports students in self-regulation and learner autonomy (Andrade & Brookhart, 2016). For the teaching of any subject, clear and meaningful success criteria are critical in developing quality assessments of student learning (Crichton & McDaid, 2015). Though greatly related to assessment, the focus of this section is on the development of success criteria in isolation; further investigation of assessment practices in creativity are discussed in a later section.

Of note, some educational researchers advocate the involvement of learners in negotiation and discussion of success criteria to clarify learning intentions (e.g., Hattie, 2009; Stobart 2008). Developing success criteria without any student input causes the learning process to be procedural or ritualistic in a way that inhibits teachers' ability to facilitate the development of students' understanding towards the achievement of learning goals (Swaffield, 2009). Success criteria that are solely developed by teachers have the potential for learning intentions to be viewed as a result of what the educator teaches rather than what the students have learned (Dean, 2004; Dymoke & Harrison, 2009).

In teaching for creativity, indeed, students must have clear success criteria for creativity to achieve creativity goals and approach its development in a collaborative manner; Burnard & Faultley (2014) are proponents of using a clear and shared understanding of the creativity students are striving for in regard to success criteria. Recalling that creativity is defined by one's perception of the value and novelty of creative work, and that we are aiming to have students achieve little-c creativity, success criteria towards creativity in particular must be made from the perspective of the individual and use co-construction as a means to inform how novelty/originally can be achieved while maintaining value within a given task (Beghetto et al., 2015).

As students continue to develop their understanding of their own creative thinking, it is important for teachers and students to recognize that success criteria are not fixed and can be revisited and refined. When followed too strictly, criteria have the potential to limit student agency (Andrade & Brown, 2016). With creativity in particular, Davies et al. (2013) found a non-prescriptive approach to planning classroom activities to be conducive to creativity. Bolden and colleagues (2023) state that "flexibility is the key to students actualizing their own conceptions of novel and valuable [products]" (p. 21) in that it ensures that the students' success criteria remain relevant and meaningful to them, opens the possibility for criteria refinement, and allows students to accommodate any changes in perspective as they progress in developing creative work.

Process-Oriented Success Criteria

As students develop their creativity, it is important to recognize that creativity emerges from engaging in various processes rather than the end result in itself (Kim, 2018). Regarding teaching and learning, defining assessment criteria in a process-oriented manner, rather than being product-oriented, directs student learning in a way that focuses on constant improvement (Zhao, 2022) which enables learners to understand how to apply their knowledge and skills beyond the classroom (Boud & Soler, 2016). A process-oriented approach is also ideal for developing student-constructed success criteria as it more actively involves learners' experiences in the construction, use, and revision of their own success criteria (Evan, 2016). Though creativity is an interaction between an individual, audiences, processes, and products (Glaveanu, 2013), examinations of the creative process have been of particular interest to creativity scholars. In educational research, examining the creative process in particular has great potential to be useful for the teaching and learning of creativity (Starko, 2018).

The creative process is often described as some iteration of Wallas' (1926) four-stage model of the creative process. The first stage is *preparation*, where the creative person gathers and evaluates the knowledge and skills required in completing a creative endeavor. In the second stage of *incubation*, the creative person encounters problems and takes a step back to go about other activities while the mind continues to consider the problem at a subconscious level. Once the creative person is finally able to fit their ideas together towards a solution, they are in the third stage of *illumination.* Lastly, the fourth stage of *verification* is where the creative person checks their creative product and evaluates its effectiveness and appropriateness.

Additionally, while the creative process is often presented in a linear fashion, creativity in action is often actualized in an erratic, unpredictable manner (Bolden et al., 2023). The Ontario Ministry of Education (2010), for example, considers 'teacher, peer, and self feedback' as a stage in the creative process itself and intersperses the feedback stage between the other stages of the creative process. Another noteworthy property of the Ministry of Education Ontario's creative model is that it does not include 'incubation' as one of the stages of the creative process.

The stage of incubation in the creative process is of particular interest in creativity research (Starko, 2011). The inclusion of the incubation stage implies that creativity necessarily involves taking some purposeful time away from a problem to find a solution. Indeed, some scholars found that taking a break facilitated creative problem solving and attempted to identify incubation strategies for creative work (e.g., Sio & Ormerod, 2009; Baird et al., 2012). One could imagine, however, that incubation would be difficult to support in an educational setting, i.e., requiring students to shift their thinking away from a given task as a part of its completion. Being the bridge between preparation and illumination, perhaps a more useful approach in an educational context would be to describe what the process of overcoming the barriers between these two stages are.

Using Lucas' (2016) five-dimensional model of creativity once again, we can see that many of the creative habits of mind describe actions taken to overcome challenges, e.g., playing with possibilities, making connections, using intuition, giving and receiving feedback, reflecting critically, etc. The five dimensional model of creativity is a tool that is designed to be used for assessment; users can use this model to assist in describing how their, or others', creativity is exemplified in their work. Indeed, the creative habits of mind can be taken as potential process-oriented success criteria of exemplifying creativity. Using this model as a starting point, students may be able to meaningfully describe the processes involved in their creative breakthroughs, and deepen their understanding of what their own creativity looks like. By identifying the creative habits of mind that were at play, students can then identify the habits that are most important in their own work overall and use them as success criteria for future creative endeavors in and out of the classroom. As students continue to engage in recognizing their creative success, they can work towards developing their own context-appropriate and learner-appropriate idea of process-oriented success criteria.

IV. Assessing Creativity

Finally, to complete the learning process, creativity tasks must have assessments with regard to identified success criteria. As assessment is used to improve student learning, a formative approach, instead of summative, must be central to utilizing assessment in a way that supports creative growth and prevents assessment from being a creative barrier. Specifically, various ‘assessment for learning’, and ‘assessment as learning’ strategies can be used to support students’ understanding of creativity, where they are, and where they are going with respect to the development of their own creativity.

Formative Assessment

Broadly speaking, assessment in education refers to the process of gathering information that reflects student achievement towards classroom learning goals (Black & William, 2018). Through assessment, students are able to receive feedback on if, and to what extent, they have achieved learning goals; thus, the assessment process is not only a measurement of student learning, but also fulfills a role of improving student learning (Shepard, 2001). Educational assessments are thought to fulfill this goal with either a formative or summative purpose; the former describes the use of results to adapt instruction to better meet student needs, and the latter pertains to the use of assessment results at the end of the learning process to inform grading and reporting (Black & Wiliam, 2018). Educational research indicates that formative assessment plays a more significant role in student development compared to summative assessment, and is critical for student success (Moss & Brookhart, 2019). However, summative assessments inherently have higher stakes as results are used for reporting and decision making, such as post-secondary admissions; this causes students to view summative assessment as a more crucial aspect to their success and confidence (Moss, 2013). Consequently, educators tend to place a greater emphasis on summative assessment, and tend to undermine the significance of formative assessment (Volante & Fazio, 2007).

In creativity research, assessment often appears in the form of psychometric tests, for example, Torrance's (1974) Test of Creative Thinking, Amabile's (1982) Consensual Assessment Technique, and Basadur and colleagues' (1985) Preference for Divergence Scale. Many of these assessments, however, are centered around examining participants' ability to engage divergent thinking; given that creativity is now understood to utilize other cognitive skills, including convergent thinking, these traditional tests have come under much scrutiny (Plucker et al., 2019). In addition to the potential lack of validity, using these psychometric tests as classroom assessments also has great potential to be detrimental to students' creative success. Given the score-based and evaluative nature of these tests, using such assessments with students may inhibit motivation, self-efficacy, and capacity for creativity (Hennessey, 2010). Many educators also report that they believe creativity is too subjective to assess, and fear that creativity assessments may discourage student self-expression (Lucas et al., 2013). One could imagine how implementing such assessments in classrooms could cause students to feel pressured to perform well, be discouraged by scoring low, or initiate tension between them by having their creativity compared to others.

In developing students' creativity, a formative approach to assessment is paramount, and has been shown to be particularly effective over summative assessment. Bolden and colleagues (2023) explicitly state that, as a strategy for optimizing the classroom context for creativity, educators should "not respond to [students'] creative work with grades or forms of evaluative or summative assessment that positions the work on an achievement continuum" (p. 23). By assessing creativity in a *formative* manner, the creativity-conducive environment is supported by maintaining intrinsic motivation, encouraging risk-taking, and focusing on feedback rather than scoring (Bolden & DeLuca, 2021).

Assessment *for* Learning: Supplementing Growth with Feedback

Black & William (1998) also expanded on the concept of formative assessment using the term 'assessment *for* learning' (AfL) to denote formative assessment that integrates assessment and instruction to promote meaningful learning by offering continuous descriptive feedback, and establishing student-friendly expectations and assessment criteria. In recognizing the importance of engaging student self-assessment as part of learning, Earl (2003) uses the term 'assessment *as* learning' (AaL) to denote a subset of assessment for learning that utilizes student metacognition. Black & William (1998) framed summative assessment with the same naming convention with the term 'assessment *of* learning' (AoL). In addition to formative assessment in general being ideal for creativity assessments, AfL and AaL also have their own respective places in nurturing creativity in classroom activities.

A central component to AfL is that it generates actionable feedback. By being given information on where they currently stand in their learning, and what they can do to further improve their understanding, feedback is a major component of assessment that drives student learning forward (Hattie, 2009). In particular, teachers are a salient source for feedback on student work and have a significant role in coaching and modeling to support students' actions in processing feedback into actions (Carless & Boud, 2018). Indeed, the teacher's ability to provide quality feedback is essential in promoting student learning (Carless & Winstone, 2020), and is therefore a requirement for effective implementation of AfL.

Bolden and colleagues (2023) identify a number of sub-strategies for using feedback to nurture creativity through AfL. They recommend relating feedback to a creative process framework and the students' identified success criteria, and using feedback to recognize efforts of inventiveness and risk-taking in students' creative work. Additionally, they also advise supplementing feedback with questioning that prompts students to reflect on and refine the creative aspects of their work that are indicative of creativity. These types of questions should allow students to identify if their creative choices support their own visions, and assess the overall effectiveness of their creative choices. By tailoring feedback in this manner, students can enhance their understanding of the processes involved in generating their own creative work and refine their ability to identify the balance between novelty/originality and value/appropriateness in carrying out their creative efforts.

Assessment *as* Learning: Scaffolding learning autonomy

AaL is sometimes thought of as a subset of AfL and they are similar in that both use feedback to improve student learning. AaL is distinct, however, in that the generated feedback is specifically driven by the students themselves (Earl, 2003). While teacher feedback is an integral part of student learning, the inclusion of student feedback is necessary for the overall feedback processes to be effective (Nash & Winstone, 2017). Feedback that is generated by peers offers students a more diverse range of perspectives that they can use to inform improvements on their work (Topping et al., 2000). Additionally, compared to teacher feedback, peer feedback is often more immediate and individualized, and allows the feedback process to feel more collaborative instead of authoritative (Topping, 2009). The shared responsibility of generating feedback indicates, then, that students must also have a clear understanding of how to give effective feedback (Carless & Winstone, 2020).

The primary driver of AaL, however, is student self-assessment. To maximize the potential to learn, students must develop the capacity to generate their own feedback (Andrade, 2010). As students become more familiar with how to give effective feedback and to process received feedback meaningfully, students can progress to a stage where they can be their own assessors and develop overall learner autonomy (Andrade & Du, 2007). The ability for students to be proficient in self-assessment has been shown to improve academic achievement (Graham et al., 2015) and has the capacity to empower students with skills needed to succeed beyond school in future unpredictable environments such as post-secondary education and professional workplaces (Boud et al., 2018).

To support creativity through AaL, Bolden and colleagues (2023) recommend the same strategies used for teacher-feedback with peer-feedback: directing feedback with reference to a creative process framework and success criteria, recognizing efforts of exploration and risk-taking, and using questions to prompt reflection and refining of creative efforts. For self-assessment, students can also transition into asking themselves questions of how their creative thinking accomplishes their own creative success criteria, and how they themselves see how novelty and value are addressed in their efforts. Furthermore, they advise dedicating some time for students to engage in reflections on the emotions and motivations towards their creative work, for example, by examining "what they value in their products and processes, and [identifying] affective barriers to originality" (p. 23).

PART 2: RESEARCH TO PRACTICE

CLASSROOM ACTIVITIES FOR NURTURING CREATIVITY

Following the synthesis of creativity literature, the next step towards developing creativity nurturing pedagogy is to implement what is known from the research into classroom activities. To contribute towards this pursuit, I have shared my own efforts in putting the research into practice by designing creativity-nurturing activities in the context of a secondary music class. Music is particularly known for its potential to foster creativity. Although creativity is more commonly thought to be best exemplified through composition and improvisation (Burnard & Power, 2013), creativity can be present throughout a wide range of musical skills such as performance, listening and analysis (Elliot, 1995), and in more contemporary music skills (Burnard, 2012), such as recording and live sound mixing. The described activities in this work are centered around the main skills that are usually expected to appear in school curricula: analyzing and responding, performance, improvisation, and composition.

While these lessons make use of the previously described principles of creativity, further research would be needed to truly assess the overall effectiveness of these programs. Although it is a logical and important next step, such an investigation is beyond the scope of this work. Additionally, while creativity is known to be interdisciplinary, the skills involved in developing one's creativity are known to be domain specific. This would suggest that more work, in the same nature as this project, is needed in other subject areas to truly develop an overall creativity framework for education overall. Perhaps once research of teaching creativity is done sufficiently in multiple domains, creativity scholars would be able to investigate the intersections of various creativities and discover the potential for transferability of creativity between subject areas.

I. Listening & Responding: Examining Creative Products

This classroom experience is a conceptualization of using student discussions to set the foundation for understanding creativity. Students will listen to music, then reflect, analyze, and respond to their listening to begin thinking about creativity in a music setting. It is designed to be an introduction to creativity in the music class for students with no previous experience of creativity in the classroom. As such, the activities can be done with students at any secondary grade level and do not have any particular prerequisite skills for student success. Students will first discuss creativity in a general sense, then examine creativity more specifically in the context of music through composition, performance, and improvisation. After establishing a preliminary definition of creativity, students will then try to connect their own understanding of creativity to their own musicianship by setting creativity goals and success criteria.

Though centered on creativity, this activity has the potential to be aligned with a range of music curriculum expectations. Students' listening responses may involve assessing skills surrounding the elements of music (e.g., describing melody, harmony, rhythm in a piece of music), critical analysis to music (e.g., commenting on music aesthetics and purpose), and reflecting on growth in musicianship (e.g., identifying goals and progressions as musicians). It is important, however, to ensure that creativity is not assessed summatively and only approached formatively through the discussion and reflection components of the activity.

As this activity is an introduction to creativity, it is important that it is done before students engage with other classroom experiences of developing creativity. Ideally, this classroom experience should take place at the beginning of a course to allow students as much time as possible over the course to develop their understanding of creativity as they develop other musical skills (e.g., improvising, composing, performing).

Connections to Research

This activity mainly utilizes strategies for setting the classroom environment to be conducive for creativity. First, students need to be introduced to creativity with the understanding that it pertains to novelty and value (Plucker et al., 2004). As those elements can be understood differently from person to person (Walia, 2019), students are tasked to come up with personal definitions of creativity instead of being presented with a singular definition. As creativity is interdisciplinary (Glăveanu, 2014) but manifests in specific domains differently (Baer, 2016), students will come up with general definitions for creativity, then apply their definitions to specific areas in music. By analyzing creative work in music, students are also primed to develop creativity by establishing a basis for knowledge advancement (PISA, 2022) which enables creativity development to be context-specific.

Students also verify their understanding of creativity through classroom discussions and self-reflection which establish collaboration and metacognition (i.e., assessment as learning) as major driving forces in informing creative growth and achievement (Bolden et al., 2023). Using their own experiences and shared perspectives, students then begin developing their own success criteria for creativity. Using Wallas' (1926) model of the creative process and Lucas' creative habits of mind for reference, success criteria are student-constructed (Burnard & Faultley, 2014) and process-oriented (Evan, 2016). Additionally, these models of creativity are also used to initiate thinking about how attitudes can be used to promote, and prevent inhibitions to, creativity in the classroom. Throughout these discussions, it is important that the educator monitors discussions to model creativity-enabling attitudes, encourage creative thinking, and promote the notion that all students have the capability of demonstrating creativity (Nickerson, 2010).

1. **Opening the Discussion of Creativity**

Students will begin the discussion of creativity by coming up with examples of creativity and explanations of why those examples involve creativity. They begin with specific examples of creativity then slowly work their way to broader examples using the questions below in the indicated order. Any classroom discussion strategy (e.g., full-class open discussion, think-pair-share, gallery walks) can be used at the discretion of the educator. Example responses are included with each question.

- What are examples of creativity in music?

Performing has great potential for creativity in music. When a musician performs a solo, for example, they might try to make their performance sound original by interpreting the music in a way that other people would not, while also still making sure that the music is recognizable and captures the same essence.

- What are examples of creativity in other arts?

Cooking could also have great potential for creativity. For example, a chef may need to prepare a meal with limited ingredients. In that case, the chef could use their creativity to invent a dish or find a way to work around missing ingredients using only what is available.

- What are examples of creativity in other subject areas?

When making a classroom presentation, such as a slideshow or a poster, one could be creative when figuring out how to present and organize information. For example, to make sure the information is complete but not overloaded with text, the presenter can be creative with word choice to keep the information concise.

- What are examples of creativity in everyday life?

One could be creative when planning an outing with family or friends. If, for example, people are restricted to a budget or schedule, you could be creative in planning what activities would be efficient in cost and time, but also exciting and enjoyable for the people attending.

After coming up with specific examples of creativity, have students independently try to come up with, and write down, an initial definition of what creativity is to them. Encourage students to create a broad definition that can be applied to any subject area. Have them refer back to their definitions and examples of creativity as they progress through the next part of the activity.

I think creativity is the skill of coming up with new ways to solve problems that do not have clear solutions. For something to be creative, it needs to involve having an idea to solve a problem in a way that other people would not normally think to do.

2. **Examining Creativity in Music**

Next, students will examine the creativity of various types of musical competencies. Examples are given for examining creativity in compositions, performances, and improvisations. These can be done as stations where students work in smaller groups and self-direct their discussion before debriefing with the whole class, or can be done as stand-alone activities with the full class on separate days. The different competencies are not designed to be done in any particular order and can be modified to better suit the needs and interests of the students.

For each type of musical work, students will listen to, and compare, a number of recordings. As they listen, students will also write down their thoughts and observations pertaining to the creativity and overall effectiveness of the work. After having some time to think, students will discuss their thoughts through the following questions: *What are specific examples of creativity in each composition/performance/improvised solo? What about it made it feel creative to you?* Responses should reference students' initial definitions of creativity.

Creativity in Composition

Have students listen to, and compare, the following solo piano pieces. Each are contrasting stylistically and come from a different time period of western art music history. As they listen, students will identify examples of creativity in each composition, referring to their initial definition of creativity.

1. Les Sylvains, Op. 60, Cécile Chaminade (link)
2. Toccata, Op. 11, Sergei Prokofiev (link)
3. Sonatas and Interludes: Sonata No. 5, John Cage (link)
4. Alice in Wonderland, Nahre Sol (link)

What are specific examples of creativity in each composition? What about it made it feel creative to you?

I think the fourth piece is creative in that it solves the "problem" of getting new, unusual sounds out of a piano, and how to expand on the capabilities of a piano player. Putting physical objects in between the strings of a piano is something I've never thought of before and I wouldn't expect to see often in most classical piano pieces.

The last piece is also creative in figuring out a way to work around getting new sounds from a piano and expanding on the capabilities of a piano player. The composer accomplished this by having the piano player play on an electric keyboard at the same time, which I've seen people do in performances but never in a solo piano composition.

Creativity in Performance

Have students listen to, and compare, two performances of the same piece, e.g., *Land* by Takatsugu Muramatsu with different musical interpretations. As they listen, students will identify examples of creativity in each performance, referring to their initial definition of creativity.

Land, performed by Jisu Jung versus *Land*, performed by Lorenzo Capasso.

What are specific examples of creativity in each performance? What about it made it feel creative to you?

I think the first performance was creative in that the interpretation of the music seemed to focus on showcasing technical ability in ways that the average musician would not be able to do. It solves the "problem" of the limitations to expression in performance by expanding on the capabilities of a performer.

I think the second performance was creative in that the interpretation worked around the "problem" of technical limitations by taking a more lyrical approach to the performance. Overall, I think the choice to focus more on musicality made the music convey more of a story and enhanced the music from a listener's perspective.

Creativity in Improvisation

Have students listen to, and compare, the improvised solos from a recording of a jazz performance. Students may also listen to the main melody to set the tone for the improvised sections. As they listen, students will identify examples of creativity in each composition, referring to their initial definition of creativity.

Starmaker, The Roy Hargrove Quintet *(Link)*

Featured soloists:

- Roy Hargrove (Flugelhorn, 2:40);
- Justin Robinson (Saxophone, 3:46);
- Gerald Clayton (Piano. 4:55)

What are specific examples of creativity in each improvised solo? What about it made it feel creative to you?

I think the saxophone solo was particularly creative with how different of an approach the musician had towards improvisation. The tune overall sounds very calm and ballad-like, and the flugelhorn and piano players sounded like they were trying to match that energy. The saxophonist, however, seemed to want to be more wild and adventurous using fast rhythms, extended harmonies, and a more aggressive timbre. I think the intention is to solve the "problem" of preventing the music from sounding too dull by playing in a way that is stylistically the opposite from the other solos, which I don't think most other musicians would think of.

Debrief

After examining creativity in depth within musical examples, students will then revisit their definitions of creativity. This time, the educator will facilitate the discussion instead of having students write independently. The discussion should direct conversation towards the two main aspects of creativity: novelty and usefulness, particularly by thinking about what makes an idea "new" and "useful" to them, both with the musical examples and within the other examples of creativity they had discussed previously. Students should also consider how concepts of "new" and "useful" vary from person to person, including from within the classroom. Finally, students will use any new insights from the discussion to update their individually made definitions of creativity. Encourage students to also include what changes in perspective were made in their updated version, and what brought about their new point of view.

I think creativity is the ability to come up with new, meaningful ideas to solve problems in a way that one would not normally think to do. My perspective changed from creativity being something that is new to others to something that someone finds to be new to themselves. I realized that a lot of the things I found to be creative and new to me may not be all that new to someone else and vice versa so I adjusted my definition of creativity to reflect personal experience and perspective.

3. Connecting Creativity to the Classroom

Finally, students will consider how they can connect their understanding of creativity to their own musicianship. Students will be asked to think about an area of music where they would like to develop their own creativity (e.g., performance, composition, improvisation) then examine some theoretical models of creativity: Wallas' (1926) model of the creative process and Lucas' (2016) creative habits of mind. Students will be asked to make connections between their examples of creativity, the creativity models, and their own creative pursuits. Finally, students will be asked to write an initial success criterium for their own creative endeavors in music. An example response is provided with each section of this stage of the activity.

The Creative Process

Using their specified area of music, students will think of an example within that area where they personally experienced being creative. If a student struggles to think of an example, the educator can share one of their own personal examples or a hypothetical example. Then, students will be shown the creative process (Wallas, 1926).

1. Preparation: the creative person gathers and evaluates the knowledge and skills required. in completing a creative endeavor.
2. Incubation: the creative person encounters problems and takes a step back to go about other activities while the mind continues to consider the problem at a subconscious level.
3. Illumination: the creative person is finally able to fit their ideas together towards a solution.
4. Verification: the creative person checks their creative product and evaluates its effectiveness and appropriateness.

Using their example of creativity, students will try to describe what each stage of the creative process looked like. Have students think especially deeply about the second stage of incubation by considering what specific things were done outside of solving a creative problem that lead to arriving at a solution towards it. Below is an example response:

One instance of creativity I had in performance was in preparing an important solo in a xylophone part I had for a band piece. Instead of playing it as written, I came up with a new technique to make it easier to play while still having the intended musical effect I wanted.

Preparation: There was a really fast run that I really struggled with and wasn't getting down during practice. I tried using standard practice strategies to figure it out: playing slowly with a metronome then gradually increasing the tempo, and working each hand individually.

Incubation: During a break from practicing, I tried listening to a recording of the piece. There, I noticed the xylophone player's performance of that run sounded more like a glissando (sliding the mallet across the bars) instead of playing each note individually.

Illumination: I realized I could use that approach in my own playing. The notes wouldn't match what was written exactly but would still give off the same musical effect. So during the next practice, I played one part of the run by playing the individual notes, but used a glissando instead of the part of the run I was having the most trouble with.

Verification: At the next rehearsal, I used my newly discovered technique and noticed that the band director seemed content with how my part was played. I kept playing it that way.

The Creative Habits of Mind

Introduce students to Lucas' (2016) creative habits of mind. Have students think of which habits they believe would best help them be creative and provide a potential example of how they can demonstrate that habit when being creative in their chosen area of music. Additionally, have students discuss potential attitudes and behaviors that may inhibit creative expression in the classroom and consider how the creative habits of mind can prevent those barriers to creativity.

- Inquisitive: wondering and questioning, exploring and investigating, challenging assumptions.
- Imaginative: playing with possibilities, making connections, using intuition.
- Persistent: sticking with difficulty, daring to be different, tolerating uncertainty.
- Collaborative: sharing the product, giving and receiving feedback, cooperating appropriately.
- Disciplined: developing techniques, reflecting critically, crafting and improving.

Below is an example response:

I personally think that creativity for me would most likely appear through being imaginative, specifically through making connections and playing with possibilities. I think my own creativity often happens as a result of taking what I already know and using it in ways that I have never thought of before to solve new problems.

With that, I think the mindset of there being only one way to do something would be one barrier to creativity in the classroom. Without allowing some amount of flexibility, we may not be able to come up with new ideas and only be stuck trying to imitate what other people do.

Success Criteria

Finally, students will be tasked to come up with initial success criteria for creativity in their specified area of music. Students' responses should consider how the creative process is involved and how the creative habits of mind lead to a creative breakthrough. Instead of using a class discussion, students will respond to the following questions in the form of a written assignment to allow responses to be personal and to give time for students to consider the ideas brought up during in-class discussions deeply: *What is your success criteria for creativity? How will you know if you have been creative when it happens?* An example response is below.

My success criteria for creativity in performance is that I can make an aspect of my own playing sound better by using techniques and concepts that I already know and apply them in a new way that enhances the sound of my playing. I will know that I have been successful if my performance using the new ideas still sounds good and appropriate to my audience.

II. Improvisation: The Blues

This classroom experience involves a series of hands-on activities which are intended to be used for a unit on improvisation. It is designed for students with no background in improvisation at all but assumes that students already have experience with playing instruments, and are familiar with rudimental theory such as constructing major triads, naming notes of major scales, and naming intervals. These activities present improvisation in the style of the blues and are intended to prime students for improvising in a jazz ensemble. The improvisation is limited to soloing, however, and does not include improvised ‘comping’ (e.g., playing over chord figures, walking bass lines, drum embellishments).

Students will experiment with notes on instruments and use ideas from music theory to inform their improvisation. They will then prepare a performance where they will improvise a solo, transcribe and analyze their solos, then comment on their growth as improvisers. As such, meeting curriculum expectations surrounding performance (e.g., instrument technique, manipulating the elements of music), music theory (e.g., naming notes in triads and scales, identifying intervals), and reflecting on musicianship (e.g., transcribing and analyzing their performance) can be targeted and assessed separately from creativity.

The activities are also presented with the assumption that students have already experienced creativity in the music classroom. They should already have their own personal definitions of creativity and understand that their definitions are personal and vary depending on perceptions of novelty and value. They should also have constructed success criteria for creativity that are student-constructed and process-oriented. The final task will involve having students reflect on their definitions and success criteria and connect their engagement with improvisation to their understanding of creativity.

Connections to Research

In this experience, students will develop their improvisation skills in the form of knowledge advancement (PISA, 2022). First, students will be taught to use the major pentatonic scale with the 'blues' notes as a basis for improvising. Then, students build upon that foundation through a task of creative problem solving (Treffinger, 2007): they must come up with ways to use notes outside of the blues scale in a way that is still suitable for the blues style. Students use creativity by working with non-standard notes (novelty) in a way that is appropriate to the musical context (value) (Plucker et al., 2004). As they work through this task, students also work towards a recording of a 'jam session' as the culmination of their work.

In this manner, students engage in each step of the creative process (Wallas, 1926): first students develop foundational skills (preparation), are given a problem to solve on their own over an extended period of time (incubation & illumination), then apply their potential solutions to the given problem in an authentic context (verification). Students will then unpack how creativity was involved through a reflection, which allows students to meaningfully, and safely, assess their creativity through assessment as learning (Bolden et al., 2023). The guiding questions for reflection are chosen to focus student reflection on the process of creativity, rather than the final product (Kim, 2018), connecting to their student-constructed creative success criteria (Bolden et al., 2023).

The educator may also participate in the activity alongside students to model creativity in improvisation in action. This is an environmental consideration to encourage student creativity (Beghetto, 2006). Additionally, students may collaborate on ideas and give peer feedback, provided the educator facilitates the sharing of ideas to ensure creative expression is not inhibited (Nickerson, 2010). Furthermore, the expectations of the tasks can be adjusted to suit the specific needs of individual students (e.g., sticking to just the pentatonic scale or one non-chord tone instead of the pentatonic scale and the blues notes) to adjust the challenge to individual ability to maintain engagement and flow (Liljedahl, 2020).

1. Developing the Skills

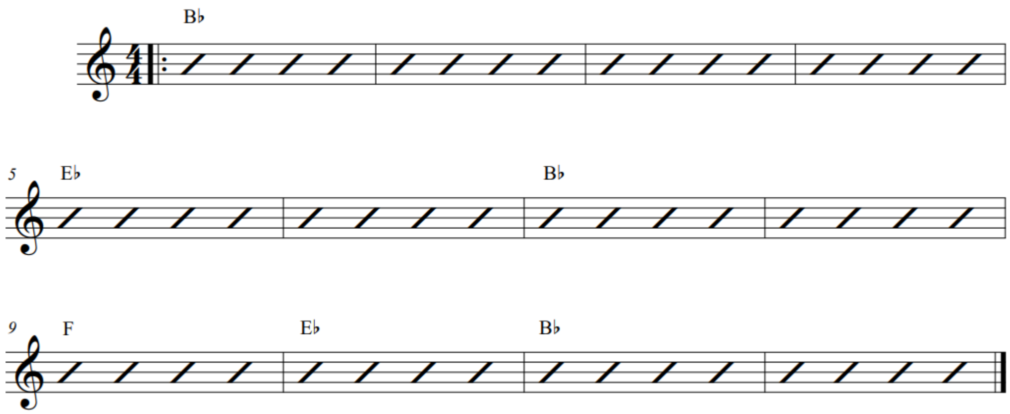
Students will first be presented with an initial strategy for improvisation (using the major pentatonic and blues scale). After developing the base skills, students will engage in creative problem solving by developing their own improvisation strategies. They will be tasked to come up with their own ways to use tones outside the blues scale in their solos while still sounding suitable for the blues style. The following sections are intended to be done in three separate classes.

Major Pentatonic Scale

Students are first presented with a chord sheet of a 12-bar blues in concert Bb using the Bb, Eb, and F major triads (not 7th chords which are commonly used in the blues). Below is a lead sheet for concert pitched, B-flat, and E-flat instruments. These are the usual transpositions used for jazz band instruments.

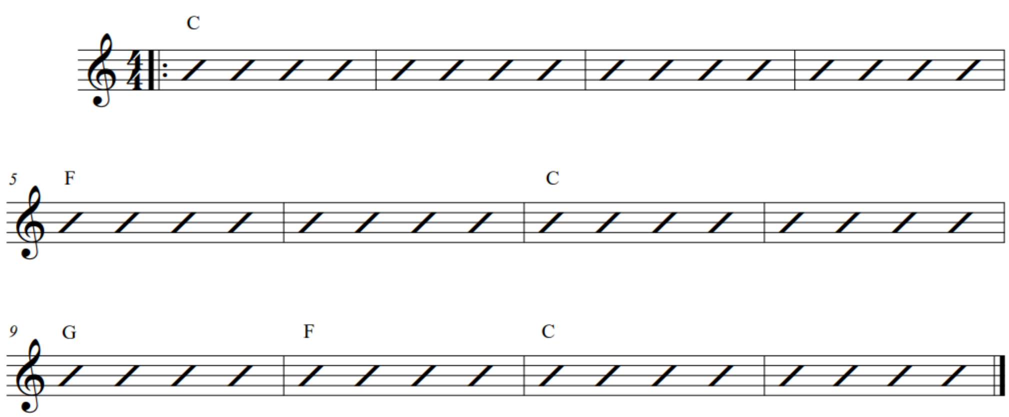
Concert pitched instruments (rhythm section and trombone):

12 Bar Blues



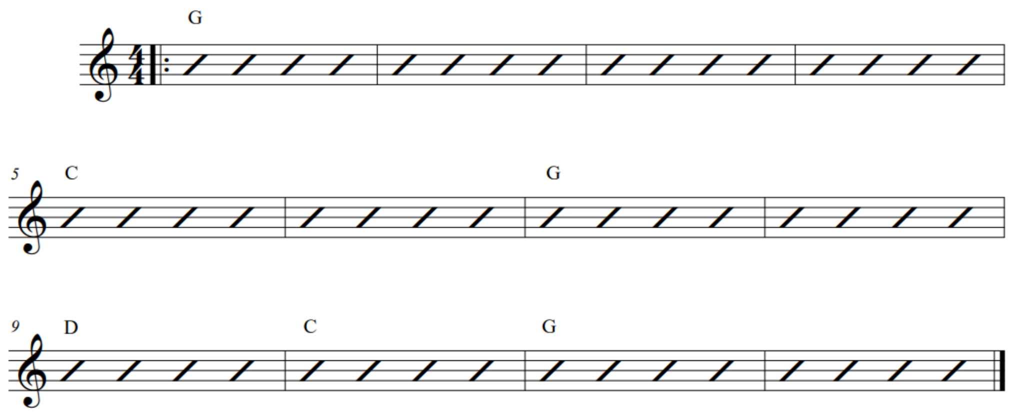
B-flat instruments (trumpet and tenor saxophone):

12 Bar Blues



E-flat instruments (alto saxophone and baritone saxophone):

12 Bar Blues



Students will begin by identifying the notes of the triads in the respective keys of their instrument. E.g., for concert pitch instruments: Bb-D-F for a Bb major triad, Eb-G-Bb for an Eb major triad, and F-A-C for an F major triad. They will then find those notes on their instrument in any octave or octaves that are within a comfortable register for their instrument.

Students will then be asked to improvise over a chord loop of the provided sheet music. They will be instructed to only use the chord tones of the respective chord being played and experiment only with rhythm and articulation. Once they are comfortable with the chord tones, students will be tasked to identify the major 6th and major 2nd of each chord.

Instrument Pitch	Root	Major 2nd	Major 6th
C (Rhythm, Trombone)	Bb	C	G
	Eb	F	C
	F	G	D
Bb (Trumpet, Tenor Sax)	C	D	A

	F	G	D
	G	A	E
Eb (Alto & Bari Sax)	G	A	E
	C	D	A
	D	E	B

They will then resume playing over the chord loop, but now they are allowed to use the 2nds and 6ths of the respective chords in addition to the chord tones. Once students are comfortable enough with experimenting with those notes, they will be told that the collections of notes comprise the “major pentatonic scale” and are an ideal starting point for improvising over any major chord.

The “Blue” Notes

When students are comfortable and fluent with the pentatonic scales, they can progress to identifying and experimenting with the minor 7th and the minor 3rd of each chord in their improvisation. It may require several days of practice with the pentatonic scale before students are ready to move onto this step.

Instrument Pitch	Root	Minor 3rd (b3)	Minor 7th (b7)
C (Rhythm, Trombone)	Bb	Db	Ab
	Eb	Gb	Db
	F	Ab	Eb

Bb (Trumpet, Tenor Sax)	C	Eb	Bb
	F	Ab	Eb
	G	Bb	F
Eb (Alto & Bari Sax)	G	Bb	F♮
	C	Eb	Bb
	D	F♮	C

In the same manner as with the chord tones and major pentatonic scales, students will continue to improvise over the same chord loop but with the addition of these non-chord tones to the pentatonic scale. Once students are comfortable enough with experimenting with those notes, they will be told that the collections of notes comprise the “blues scale”. Specifically, the minor 3rd and minor 7th are commonly referred to as ‘blue’ notes which are attributed to giving the scale the ‘blues’ sound.

More Non-Chord Tones

Once students are comfortable improvising using the blues scales, students can then explore the use of other non-chord tones. Students will pick one non-chord tone then identify the corresponding note for each chord.

E.g., My Non-Chord Tone - Perfect 4th

Root Note (Concert Pitch)	New Note
Bb	Eb

Eb	Ab
F	Bb

Students will be given the task to find ways they can incorporate their non-chord tone into their improvisation in a way they believe sounds appropriate for the blues. To emphasize creativity, students should understand that using non-chord tones would present *novelty* to their solos. However, overusing using them or using them without purpose may compromise the *value* of their improvisation as it may sound inappropriate in the given musical context. As they experiment with their non-chord tone, they will be asked to describe musical ideas they believe work well and which ones do not. Below are example responses.

To me, it sounded like the 4th wants to 'approach' the 3th of the chord from above, but it did not always sound as good when approaching the 5th of the chord from below. Since the 4th of Eb is the same as the b7 (a 'blue' note) in Bb, I noticed that in a bar of Eb major, I could delay the resolution from Ab down to G in the bar after it has a Bb major chord. Even though G is not a note in a Bb major triad, holding the note has a jazzy effect that I like the sound of.

Students will repeat this process with other non-chord tones. After spending time experimenting, ideally over several classes, students break down their understanding of non-chord tones by writing down a collection of what they believe are their best ideas. Below is an example response.

In addition to using the #4 and b6 to approach the 5th of the chords, I found out that I could 'enclose' the 5th to end a phrase, either playing a #4-b6-5 or b6-#4-5 patterns. Sometimes using two chromatic non-chord tones back to back can sound too discordant, especially if used too often, so an alternative could be to play ♮6-#4-5 or #4-♮6-5. Another alternative could b6-♮4-5 or ♮4-b6-5, however the perfect 4th of the root note sometimes sounds more like it wants to resolve down to the 3rd instead of up to 5th so it may not be as versatile.

2. Putting the Skills to Practice

Once students have developed their own understanding of improvising by mixing chord tones and non-chord tones thoughtfully, and are comfortable improvising on their instruments with them, students will work towards improvising over the 12 bar blues in a live recorded setting. In preparation for this recording, students are encouraged to try to move away from sheet music and follow the chord structure by ear. Additionally, as the task is to improvise, they should not write down a solo ahead of time.

Practicing, Performing, & Recording

Students will be work in small groups (up to 3) and take turns improvising in a combo setting (with live piano/guitar, bass & drums accompaniment) or with the chord loop used for practice. They will take turns improvising over the 12-bar blues, each over the space of one 12-bar chorus. Students may also opt to, or additionally, 'trade 4s' where each soloist will only improvise a solo for four bars before moving onto the next soloist.

Students will have a number of classes to practice playing and improvising together, then record their jam session on a predetermined date. In addition to practicing improvisation, students are encouraged to practice continuing to solo even if what they play does not turn out how they were envisioning it. Particularly, students should think back to their experimentations with non-chord tones and use the ideas they came up with as strategies to make 'wrong' notes sound correct with the notes they think to play after.

Listening & Transcribing

After students have completed their recording, students will be tasked to then listen back to their recording and transcribe their own solos on manuscript paper or with music notation software. They will analyze their own solos and identify where they believe they demonstrated their best improvised ideas, and extract their best 'licks' that they could use in future improvisation. For each one they identify, students will be asked to connect it back to the ideas they came up with during the experimentation phases. Below is an example response.

As I was practicing with my group, I tried experimenting a lot with the chromatic enclosures. I found that there was a good balance of chord tones and non-chord tones when I played an arpeggio of the major triad, but used the chromatic enclosure around one of the three notes. This lick, which was played over a Bb major chord, is one of the best examples of this from my solo:

I think the b3-4-♮3 enclosure works best in this style because the b3 is a note in the blues scale and the perfect 4th has tendency to resolve down to the 3rd. This means that none of the notes sound out of place but still have the sounds that are characteristic in a blues.

3. Reflecting on Creativity

To directly connect the process of engaging with improvisation to creativity, students will answer the questions below, verbally or in writing, to reflect on their engagement with creativity. *What were the biggest moments of creativity you had throughout the process of learning how to improvise? What were the biggest creative challenges you faced throughout the process of learning how to improvise? How did you overcome those challenges? Use your creative success criteria and the creative habits of mind to support your answer.* Below is an example response.

I think I was creative when I was experimenting with the non-chord tones and trying to come up with ways to make them work with the chord. It was surprising to me to find out that it is possible *to make any and all notes in the chromatic scale work over any chord with thoughtful planning with what to play after. Being able to figure that out by ear was a very new skill that I think could be useful to me in becoming a better improviser. While I think it's possible to make any note work in any chord, I found it difficult to balance the amount of non-chord tones I used in an actual solo. If I stuck too closely to the pentatonic scale my solos tended to sound too repetitive. But, if I experimented too much with notes outside the scale, my solos sounded too much like I was making mistakes. I think I was able to overcome that challenge by 'playing with possibilities' and 'making connections'. I listened to other improvised solos from professional recordings and tried to figure out what other musicians would do with the same non-chord tones. Using the musical ideas that I liked, I played around with it further to make it more original. This expanded what I was able to do and improvise in a more expressive but not overdone way. I think this indicates that I have successfully been creative since part of my success criteria is "using techniques and concepts that I already know and applying them in a new way that enhances the sound of my playing".*

Though this reflection is intended to be used as a formative assessment (assessment as learning) focused on creativity, there are also opportunities for this task to overlap with curriculum expectations, such as reflecting on musicianship and growth. In this case, it is imperative that it is clear to students that their creativity is not graded, and any grade given is separate from their ability to be creative.

III. Composing/Arranging: Theme & Variations

This classroom experience is an activity in two parts meant to introduce students to composition/arranging with a particular emphasis on arranging. It is designed for students with no background on composition at all but assumes students are familiar with notation conventions (e.g., pitches, rhythms, articulations, road mapping, etc.). The first part of the activity has students listen to, and compare, original compositions to arrangements of those compositions. In the second part, students are tasked to manipulate a basic instrument/piano accompaniment theme in various ways and eventually create their own "theme & variations" on the original theme. The assignment concludes with students reflecting on their engagement with creativity throughout the composition process.

This activity may also target many curriculum expectations. This activity may be preceded with lessons on using computer notation software (e.g., Finale, Sibelius, MuseScore, Noteflight) and include assessments on technical skills surrounding composition. Additionally, students may be assessed on their understanding of the elements of music through the listening and responding components of the activity, and through students describing the manipulation of the elements of music in their variations. For more advanced students, there is also room for students to be assessed on knowledge of music theory by analysing their variations. In any case, it is important that any assessments of curricular learning goals are clearly separate from creativity. Students should not feel like they must exhibit creativity to demonstrate understanding of curriculum expectations.

These activities are also presented with the assumption that students have already experienced creativity in the music classroom. As this project takes place over an extended period of time, students should already be well acquainted with creativity. They should already have their own personal definitions of creativity and understand that their definitions are personal and vary depending on perceptions of novelty and value. They should also already have their own success criteria for creativity that are student-constructed and process-oriented.

Connections to Research

In this experience, students develop their composition skills in the form of knowledge advancement (PISA, 2022). Students are introduced to arrangements as a form of making improvements or repurposing existing compositions. They develop a knowledge basis by comparing existing compositions and corresponding arrangements, then apply their understanding to a problem finding task of their own (Starko, 2018); students take a basic arrangement, describe what could be improved, how to accomplish those improvements, and set their ideas to their arrangements. Additionally, as students are making multiple variations on a theme, they are tasked to do this in multiple, distinct ways while still having some semblance of the original.

In this manner, students engage in each step of the creative process (Wallas, 1926): first students develop foundational skills (preparation), are given a problem to solve on their own over an extended period of time (incubation & illumination), then apply their potential solutions to the given problem in an authentic context (verification). Students will then unpack how creativity was involved through a reflection, which allows students to meaningfully, and safely, assess their creativity through assessment as learning (Bolden et al., 2023). The guiding questions for reflection are chosen to focus student reflection on the process of creativity, rather than the final product (Kim, 2018), connecting to their student-constructed creative success criteria (Bolden et al., 2023).

Students are also presented with options to adjust the challenge to individual ability to maintain engagement and flow (Liljedahl, 2020) throughout the composition task. Students are given an existing theme on which to base their variations to make the task accessible for students at all levels, however more advanced students can opt to construct their own main themes and write more variations. The educator may also participate in the activity alongside students to model creativity in arranging in action. This is an environmental consideration to encourage student creativity (Beghetto, 2006). Additionally, students may collaborate on ideas and give peer feedback, provided the educator facilitates the sharing of ideas to ensure creative expression is not inhibited (Nickerson, 2010).

1. **Examining Compositions vs Arrangements**

Students will first listen and compare examples of compositions versus arrangements. Below are possible examples of original compositions and arrangements of them.

- The Hut on Hen's Legs (Baba Yaga) from Pictures at an Exhibition: original piano composition by Modest Mussorgsky vs orchestral arrangement by Maurice Ravel.
- Soul Intro/The Chicken: original by Pee Wee Ellis/Jaco Pastorious vs jazz band Arrangement by Mike Story
- October, Eric Whitacre (for concert band) vs Alleluia, Eric Whitacre (for choir)
- I've Got Rhythm - original by George Gershwin vs improvisation by Hiromi

For each comparison, students will respond to the following questions: What differences are there in the elements of music between the original works versus their corresponding arrangements? What is kept the same? How would a listener still be able to recognize the essence of the original within the arrangement? These responses can be done in the form of a classroom discussion, or individually in written form. An example response is given below.

The Chicken:
The arrangement of The Chicken seems to be a simplification of the original. The soul intro is shorter and has simpler harmonies, and the main melody has simplified rhythms with less syncopation. It is much slower in tempo, but written in a double-time rock style instead of a half-time funk style. It is also in a different key (F major instead of B-flat major).

To keep the original intact and easily recognizable, the chords are still kept the same (relative to the key) and pitches of the main melody are still the same. While the rock style is different from the funk style, the bass line is kept the same and the rock drum beat is similar to the funk drum beat (strong beats on beats 1 and 3, off-beats on beats 2 and 4).

Students will then use their comparisons to support their answers to the following questions regarding their perception of creativity in each work: What are the most significant novel ideas to you in the arrangements compared to their originals? What made those ideas valuable? (E.g., was there a problem that it solved? Did it make listening to it more enjoyable somehow?) An example response is given below.

The Chicken

I think the purpose of simplifying the original is to make the piece accessible to beginner jazz bands. So, the novel ideas that are also valuable are the stylistic choices to make the music more approachable to musicians with limited experience while still maintaining the levels of excitement from the original. The different key makes the ranges on the instruments more reasonable to play, the harmony is easier for tuning, and the reduced syncopations and slower tempo make the rhythms simpler to coordinate. However, the energy is maintained with how the parts for the rhythm section are written out. The bass line is iconic so it can't really be changed, but the slower tempo makes it easier for a beginner bass player. To prevent the slower tempo from sounding sluggish, the drum beat plays in a double-time feel to sound faster without actually making the horn sections play faster.

2. Theme & Variation Assignment

Students will be given a basic transcription of “Twinkle Twinkle Little Star” with piano accompaniment in block chords as a basis for their theme and variations. The melody should be written in the key and clef of the students' main instrument. For demonstration, the exemplar below is written for the xylophone (i.e., concert pitch in treble clef). Students with more experience with composition and music theory may be allowed to transcribe their own melody to take place as the main theme and harmonize it with piano chord accompaniment.

Twinkle Twinkle Little Star - Melody with Block Chords (link to audio)

Students will then be asked to identify some areas for improvement and ways they may be able to improve on the main theme by manipulating the elements of music while still keeping the main melody recognizable. Students will use a table below to organize their thoughts.

Areas for Improvement:	Possible Alterations:
The melody is repetitive and boring.	• I could make the rhythm more interesting by adding syncopations. I would keep the pitches the same to make sure the melody is still intact. • Since it is played on a xylophone, the melody could also be played in double stops to add variety to the melody without actually changing the pitch.
The piano accompaniment is choppy and clashes with the melody.	• I could add rhythm to the chord accompaniment; I could add rhythmic patterns to the bass line and a contrasting pattern to the chords. • I could experiment with different chord extensions. As long as the base triad stays the same, I think the chord progressions should still function in the same way as the original.

Students will then be given multiple classes to arrange variations on the theme (around 3-4 variations in total). They should aim to incorporate the ideas they identified in the table. Once they complete each variation, students will write down how their improvements are connected to the variations. They will do this by adding a new column to their table. An example is given below.

Variation: Bossa Nova style (Link to Audio)

Areas for Improvement:	Possible Alterations:	In my variation:
The melody is repetitive and boring.	• Add syncopation, but keep the pitch the same. • Write the melody in double stops.	• I changed the quarter, quarter, half note rhythms to be eighth, quarter, tied eighth and half notes. I kept the order of pitches the same and kept the bars of just quarter notes the same.

		• I wrote the melody in parallel 6ths. There were some instances where it didn't sound quite right so I used some 5ths as well. • I ended every phrase with rolls. Long tones on the xylophone are limited to its natural decay so adding rolls enables the effect of a long tone which adds variety in articulation and tone.
The piano accompaniment is choppy and clashes with the melody.	• Add rhythm to the bass line and chords. • Use chord extensions but keep the base triad the same.	• I added rhythmic variety to both the bass line and chords using the bossa nova rhythmic ostinato patterns. I found the rhythm by researching online. • I added 6th and 9ths to the triads to make the chords more exciting. I found in my research that those extensions are common in bossa novas.

Optionally, students may perform their final theme & variations. They may also share their compositions by exporting an audio file instead if the assignment was done on notation software. To ensure that a creativity conducive environment is maintained, any assessment on the compositions or performances should only pertain to curriculum expectations and not to creativity. It is also imperative that students have a clear understanding that creativity is not assessed summatively and is separate from assessment on curriculum expectations.

3. Examining the Creative Process

To directly connect the process of engaging with improvisation to creativity, students will answer the questions below, verbally or in writing, to reflect on their engagement with creativity. *What were instances of creativity you had throughout the process of arranging? What led to your creative breakthroughs? Use your creative success criteria and the creative habits of mind to support your answer.* Recalling that creativity pertains to what they perceive to be novel and valuable, students should pay particular attention to ideas they found to be new to them that were also somehow useful. Below is an example response.

I think one of the most significant moments of creativity I had was when I wrote my bossa nova variation. When I looked at the criteria of areas of improvement I noticed that all of my potential alterations could be addressed by applying the elements of the bossa nova style to the original theme. So, I listened to bossa nova music and researched what the key aspects of a bossa nova are. From my findings, I was able to apply the rhythmic ostinato patterns and 6/9 chord extensions. There isn't really any bossa nova music for xylophone specifically so I used my own intuition to figure out what changes to make in the xylophone part and kept the ideas I thought sounded good. Overall, I think this corresponds to the creative habits of 'making connections' and 'using intuition'. I was able to connect my potential alterations to a single genre of music I already knew of and apply it to my own writing. To write the melody part, which I had no basis for, I used a 'play it by ear' to figure out what I thought sounded good which I think is indicative of using intuition to come to a creative idea. I think these are connected to my success criteria which involves "using known ideas and expanding on them to solve other problems in different contexts".

Though it is intended to be used as a formative assessment (assessment as learning), there are opportunities for this task to overlap with curriculum expectations, such as reflecting on musicianship and growth. In this case, it is imperative that it is clear to students that their creativity is not graded, and any grade given is separate from their ability to be creative.

IV. Performance: Preparing an Audition

This school experience is a large-scale task designed for grade 12 music to develop skills in performance and reflecting on musicianship. Students will be given the entire duration of the course to prepare a solo performance as if they were preparing for an audition for a post-secondary music program. At the end of the course, students will perform for each other then reflect on their progress and engagement with creativity. In preparation for the performance, students will first research what pieces they will play, keep a practice journal and make regular reflections as they practice, and participate in peer-feedback sessions. Students should have in-class time to practice but should also be expected to practice on their own outside of class.

This activity is designed to also have the potential to target curriculum expectations. Students may have the opportunity to be assessed on performance skills (e.g., instrument technique, interpreting sheet music, manipulating the elements of music) and musicianship (e.g., identifying goals and progressions on growth as musicians). It is important, however, that any assessments of curricular learning goals are clearly separate from creativity. Students should not feel like they must exhibit creativity to demonstrate understanding of curriculum expectations.

The activities are also presented with the assumption that students have already experienced creativity in the music classroom. As this project takes place over an extended period of time, ideally students should already be well acquainted with creativity from a previous course. They should already have their own personal definitions of creativity and understand that their definitions are personal and vary depending on perceptions of novelty and value. They should also already have their own success criteria for creativity that are student-constructed and process-oriented.

Connections to Research

In selecting repertoire in the context of preparing for a university audition, students set a foundation for knowledge advancement (PISA, 2022) in the preparation stage of the creative process (Wallas, 1926) where they assess their knowledge base in performance skills, identify goals and constraints, and identify problems that they can solve using their creativity. In keeping a practice journal, students have the opportunity to write out any instances of problem-finding (Starko, 2018) and what, during the incubation stage of the creative process (Wallas, 1926), lead to their creative breakthroughs. In reflecting, both self-reflection and giving peer-feedback, students are able to use assessment as learning to assess their creativity in a meaningful and safe environment (Bolden et al., 2023). In the final reflection in particular, the questions are chosen to focus their reflection on connecting the process of creativity, rather than the final product, (Kim, 2018) to their student-constructed creative success criteria (Bolden et al., 2023).

The activities are also designed with environmental considerations to ensure the classroom is maintained as a safe space for creative expression. As students reflect on their practice, they are able to reconsider their goals, constraints, and success criteria to ensure they can adjust the challenges of the project to their individual needs (Liljedahl, 2020). Additionally, the educator is intended to model creative thinking by being the first to accept peer-feedback and demonstrate taking feedback to support their creative intentions (Beghetto, 2006). It is also made imperative for the educator to monitor students' peer-feedback sessions to ensure that comments promote creativity development (Nickerson, 2010). Assuming students are already familiar with creativity in the music classroom, they should already be aware of the creative habits of mind (Lucas, 2016) and be conscious of how delivering feedback may enhance or hinder the ability to exemplify those traits.

1. **Selecting Repertoire**

Students are assigned the task of preparing a performance as if they were going to audition for an undergraduate program in music. They will research general university audition requirements to guide their repertoire selection. Students will then select pieces within those limitations while considering potential challenges and their own performance goals.

Identifying Constraints

Students will research the audition requirements on their instrument for various undergraduate programs at multiple institutions. They are looking for specific information on the types of pieces (e.g., styles, time period, level of difficulty) that are commonly asked for across different audition requirement lists. Using their findings, students will identify what is non-negotiable for their performance. An example is provided below.

For my undergraduate percussion audition, the audition requirements state I must have the following: a rudimental snare etude, an orchestral snare drum etude, a timpani etude, a two mallet solo, and a four mallet solo. The requirements also provide a list of example repertoire, and the combined time for all the pieces should be no more than 20 minutes.

Identifying Challenges & Goals

Before picking specific pieces, students will be asked to state what they believe are qualities of a successful performance for an audition. They will then identify the potential personal challenges that may arise due to the constraints laid out by the audition requirements, then come up with their own goals in overcoming those challenges in preparation for the final performance. An example response is provided below.

Based on the provided list of example repertoire, I think auditioners are looking for solid stick technique across a range of different percussion instruments while also demonstrating a high level of musicality. A big challenge for me would be playing a four mallet piece. I'm very comfortable playing with two, but I'm relatively new to playing with four and some of the listed pieces may be too difficult for me at the moment. My goal for this project, then, is to be able to improve my four mallet technique enough to be able to play one of the listed four mallet pieces while still demonstrating musicality without feeling restricted by technical limitations.

Selecting Repertoire

Students will then research some potential pieces by looking through sheet music (e.g., through a music library or by researching online) and listening to recordings. They will then identify which pieces they will select for their project. Students will write a short justification on their choices by explaining how their level of ability is suited for the challenges, and how the pieces may achieve their identified goals. Below is an example response.

A Fragment from Trilogy, T. Huesgen - This four-mallet vibraphone solo is very lyrical and technically very simple. It seems like there is a very high level of musicality needed in this piece through balancing chord voicings, dynamics, and pedaling and dampening. Performing this piece should demonstrate musical maturity, and technical proficiency with pedal and dampening rather than four mallet sticking. It is also a very short piece, only about 2 minutes in length, which would allow me more flexibility in playing the pieces I selected for the other percussion instruments which I feel much more confident playing already.

2. Planning & Practicing

After students have decided on pieces to perform, they are expected to practice their pieces regularly over the course of the full term. Students will also keep a journal with a short entry for every individual practice session. They will also be asked to reflect regularly on their approach to practicing and consider if they need to make adjustments to their planning. The journal entries and reflection will be used to support student responses for a final reflection after their final performance at the end of the course.

Practice Journal

As students practice, they will regularly write in a practice journal. Each entry will contain the following: a small problem they would like to fix during the individual practice session, a list of what was actually done during each session, and a short reflection of the overall effectiveness of the practice session. In the reflection, students will indicate if they have fully resolved, or meaningfully progressed towards solving their identified problem.

A Fragment from Trilogy, T. Huesgen.

Goal: Play through the 8 bar introduction without stopping and performing proper balance between the chord voices; the lowest and highest notes are the loudest and the other notes are audible, but not overpowering the main notes.

Reflection: I was able to play through the entire passage without stopping and the balance of the chord voicings were good overall. However, in bars 1, 3, and 7, the first note in the left hand did not always come out clearly. I tried experimenting with wrist rotation to make sure the mallets hit on the sweet spots of the bar and it worked, but I'm not yet able to do it consistently every time. I will try experimenting with it some more the next time I practice this section.

Reflections on Approach to Practicing

At regular time intervals (e.g., every three weeks), students will reflect on the progress made over the course of the indicated period of time. They will be asked to state where they are, at that point in time, in terms of accomplishing their overall goal and identify the strategies that are currently working for them, and any adjustments they may need to make in their approach to practice, or in the constraints or goals they had set for themselves previously.

A Fragment from Trilogy, T. Huesgen.

At this point in time, I believe I am well on my way to meeting my performance goals. Paying particular attention to musicality has allowed me to identify and focus only on the techniques that I need to know for this piece and not be too fixated on ones that aren't as important. I am progressing very quickly and am expecting to have this movement performance-ready soon so I may expand the repertoire to include one of the other two movements as well.

Identifying Creativity

In addition to reflecting on practice, students will also identify instances of creativity during their practice sessions. Students will write down the most significant ideas they were able to generate and specify how it was new to them (e.g., it was something they have never tried before, or it was a new perspective on something they already knew) and how it was useful to them (e.g., it solved a problem they were having, or it can be applied in other areas of their playing). Students may use the table below to organize their thoughts before writing their reflection.

What significant ideas did I generate during my practice sessions?	**Novelty:** How might these ideas be *new?* E.g., was it something I've never tried before? Was it a new perspective on something I already knew?	**Usefulness:** How were these ideas *useful*? E.g., did it help solve a problem I was having? Is this something I can use again in the future?
• Moving my hand placement (along the horizontal plane) to adjust where I am striking the vibraphone bars.	• I usually aim to strike the bars just off-centre, but a new thing I tried was sometimes aiming for the edge of the bar instead.	• This made it more comfortable to play awkward intervals in one-hand without sacrificing tone or balance.

One creative idea I came up with in my own practice was in developing a technique for making chords with awkward stick placements easier and more comfortable to play. Usually, the bars of the vibraphone resonate best when struck just off center. However I noticed that the bars are almost as resonant when struck at the very edge. So when playing two notes in one hand where one note is an accidental note and the other is a natural note, for example Bb and F in my piece, instead of stretching out my hand further apart to hit off-centre on both keys, I could get the same effect without as big a stretch I aimed to strike one of the sticks at the edge instead.

3. Gathering Feedback

At some point in time, students should be ready to share a preliminary performance where they share the current state of the music they are working towards performing. They will have the opportunity to share ideas on each others' progress then reflect on the comments they receive and how they can meaningfully implement their peers' insights into their own practice. This can be done any number of times throughout the course, however the first session should be introduced with the educator demonstrating the peer-feedback process.

Teacher Demonstration of Feedback

Before students' first peer feedback session, the teacher will lead a feedback session with the classroom first as a demonstration. The teacher will share one of their own performances with students and ask students to give feedback. Feel free to use this recording if a teacher demonstration is not possible. As they watch and listen, students should think about the following questions as a basis for their feedback:

- *What parts of the performance stood out to you the most?*
- *What did you really appreciate? What were you still left craving?*
- *What instances of creativity did you notice? (What musical ideas were new to you? How did it enhance your experience as a listener?)*

Students will be given time to write down their thoughts after the performance. As they think about their comments, students will use the following checklist to ensure they promote musical growth:

- *Feedback is based on your experience of the performance, and not based on inferences.*
- *Feedback is directed at the performance, not the performer.*
- *Feedback is actionable; the recipient would know exactly what to do next time they practice.*
- *Feedback supports a safe creative environment.*

The teacher will review students' paragraphs individually to ensure the checklist criteria are met. After receiving and reviewing all students' feedback, the teacher will demonstrate a response to feedback. Selected students' responses (anonymously and on a volunteer basis) will be shown to the class. The teacher will then demonstrate the use of the table below to reflect on the comment while ensuring the demonstration does not compromise the students' creative learning environment.

Student-generated feedback: "I really appreciated the way you balanced the melody and accompaniment. The melody was really clear and phrased lyrically without the fast scale runs interfering with the mood of the music or drowning out the melody. It almost made it seem like I could sing along so what I think I was craving was phrasing that is more singer-like instead of a percussionist. I think it would enhance the lyrical quality of the music and bring out the melody even more."

Main idea from given feedback:	**Novelty:** How might these ideas be *new?* E.g., was it something I've never tried before? Was it a new perspective on something I already knew?	**Usefulness:** How were these ideas *useful*? E.g., did it help solve a problem I was having? Is this something I can use again in the future?
• *Phrasing the melody in a more singer-like way.*	• *I've ever tried approaching my instrument as if it were a different instrument. I agree with the feedback and think this would bring out the lyrical quality and melody even more.*	• *I think taking this approach would make my performance more accessible to a general audience. The jazzy harmonies and ornate passages may not be for everyone, but a familiar may be something more people can latch on to.* • *I think this approach in general would also be a good way to think about how to bring out the melody in any solo marimba piece I play.*

The teacher will respond to the given feedback with a short response to the following questions: Which pieces of feedback were the most valuable and why? How will you incorporate the feedback you got the next time you practice?

I think the comment about bringing out the melody in a more song-like manner is a very valuable idea. One of my goals for this piece is to demonstrate the lyrical capabilities of the instrument and thinking about singing could enhance that quality of that playing. This comment gave me the idea to try to sing the song while I'm playing the next time I practice.

Peer-Feedback

After the teacher demonstration, students can begin engaging in their own self-directed feedback sessions following the same format with written comments. The educator should still supervise this activity to ensure students are following the given guidelines and promoting a creative environment. Students will first perform for each other and listen with consideration to the guiding questions. Then, they will write each other feedback following the feedback checklist. As they review the feedback given to them, they will write down personal responses using the reflection questions. The next time they use their practice journal, students should use their response to the question "How will you incorporate the feedback you got the next time you practice?" as their goal for that practice session.

4. Performance & Final Reflection

At the end of the course, students will finally perform selections from the repertoire they have been preparing for their class. They may perform it live while being recorded, or have their performance pre-recorded then shared with the class. After the performance, students will listen back to the recording of their final performance while following their sheet music, then reflect on their goals and engagement with creativity throughout the process of preparing their final performance.

Reflecting on Creativity

Lastly, students will reflect on their engagement with creativity throughout the entire process of preparing for their final performance. Using their journal entries, reflections, and peer-feedback, students will answer the questions below verbally in an interview, or in writing as an additional reflection piece: *What were the biggest moments of creativity you had in preparing your performance? What were the biggest creative challenges you faced? How did you overcome those challenges? Use your creative success criteria and the creative habits of mind to support* *your answer.* Recalling that creativity pertains to what they perceive to be novel and valuable, students should pay particular attention to ideas they found to be new to them that were also somehow useful.

One of the more significant creative moments I had was in figuring out how to work around difficult passages in my music by modifying my instrument technique. My usual strategy was just to repeat the same passage repeatedly, starting at a slow tempo then progressively work towards the intended performance tempo. While this worked sometimes, there were certain trouble sections that this strategy didn't seem to work with. Instead of being fixated on having "perfect" technique and aimlessly repeating the same section until it was right, thinking about ways to work around it by finding the source of the technical problem then playing around with technique to make it easier without negatively impacting the sound resulted in me developing new techniques that solve those problems, but could also be applied to other pieces in the future. Some examples of this was when I made conscious decisions on when I could hit the edge of the vibraphone bar, rather than off-centre, to make balancing, phrasing, and stick placement easier, and when I used "half-pedaling" to prevent multiple sustained notes clash with each other instead of manually muting each note individually. I think the process of coming up with these ideas correspond to the creative habits of "wondering & questioning", "playing with possibilities" and "developing techniques". By taking the technical skills I did know, experimenting with how it could be altered to fit different situations, then honing in on the alterations that worked, I was successfully able to be creative since my success criteria involves "using techniques and concepts that I already know and apply them in a new way that enhances the sound of my playing".

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