

An Exploratory Study of a Confluence Model of Preservice Music Teacher Creativity

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Abstract

This study investigated the viability of adapting the Sternberg and Lubart (1995) confluence model of creativity in the context of preservice instrumental music teaching. The model suggested that one's ability to be creative hinged on six distinct yet interrelated personal resources: intellect, knowledge, thinking style, personality, motivation, and environmental constraint. Two undergraduate music education students teaching in a band outreach program participated in this study. Data sources included (a) the Sternberg and Wagner (1991) Thinking Styles Questionnaire (O'Hara & Sternberg, 2001), (b) the Costa and McCrae (1992) NEO-PI-R, (c) a researcher-adapted Motivation for Teaching Questionnaire, (d) objective measures of teaching effectiveness across seven weeks, (e) an objective measure of student achievement, (f) semi-structured, open-ended interviews, and (g) consensual assessment of music teacher creativity. Independent judges verified the reliability of observational data. Results indicated that the music teacher creativity rankings from the consensual assessment corresponded with the respective teacher profiles resulting from the psychological measures and interviews, which was consistent with Sternberg and Lubart's theory. The teacher ranked most creative also (a) had the highest legislative thinking score on the Thinking Styles Questionnaire, (b) had the highest openness score on the NEO-PI, (c) reported a willingness to take risks, (d) reported the highest level of intrinsic

motivation, and (e) considered the environment to be open to creative possibilities. Although teaching effectiveness ratings improved over time for both participants, the teacher rated more creative was also more effective overall.

Upon entering the music education profession, each new music teacher is confronted with a classroom situation unique unto itself. For example, classroom settings that new teachers encounter may vary widely as a function of any number of elements related to individual-, school-, or community-based characteristics such as individual student abilities, class size, school schedule structure, specific types of equipment available, number of co-workers present, day-to-day fluctuations in teaching demands, demographic characteristics, and community support resources. The tremendous amount of variability possible among teaching settings, whether from school to school, class to class, or day to day, makes preparing preservice teachers a difficult task. This variability dictates that a careful balance between breadth and depth regarding the content of music teacher education curricula must be struck. Of equal importance is the need to prepare preservice teachers to be creative in both thought and action so that they are able to be flexible and adaptable to the specific settings and day-to-day situations in which they find themselves.

Several researchers have identified creativity and flexibility as important prerequisites for effective music teaching. In

reviews of research regarding effective music teaching, Brand (1985) and Grant and Drafall (1991) cited the importance of creative approaches to personal interactions and the use of imagery and metaphor for effective music teaching, respectively. In a study involving 34 experienced music teachers, Pembroke and Frederickson (2000) asked what advice the participants would give to first-year teachers. The most frequent advice given (54% of the sample) was to “be prepared, yet flexible.” Sogin and Wang (2002) found similar results in a study of 51 music teachers that were divided into two groups, expert and non-expert, according to expert teacher ratings and the number of specialized teacher-training courses the participants had completed. In this study, 87% of the teachers in the expert group ranked flexibility as the most important principle for effective teaching compared to only 14% of the teachers in the non-expert group. Furthermore, Robinson (2001) reported that many of the lessons and best practices derived from an innovative methods course revolved around the need to be a creative teacher. Robinson developed a methods course that entailed seminar and practicum experiences being housed entirely in an authentic context—a public school setting. The researcher asserted that teachers needed to be able to (a) adjust instructional plans to student needs, (b) understand the value of flexibility, (c) draw upon many techniques and strategies to respond to unanticipated events, and (d) teach as though teaching is an improvisational art. While each of the studies cited above have produced evidence suggesting that effective music teaching might be related to teacher creativity, investigations into music teacher creativity based on robust theoretical underpinnings of creative abilities and dispositions would help to determine what specific personal characteristics might best predict effective teaching.

A good deal of both basic and applied research has been published regarding the products and processes pertaining to the creative activities of children (see Webster, 2006). However, only a very small number of studies have been specifically designed to examine music teacher creativity. Farmilo (1981) investigated relationships between general creativity as measured by scores on the Omnibus Personality Inventory (Heist & Yonge, 1968) and school administrators’ ratings of teaching effectiveness among 53 elementary music teachers. While Farmilo found no significant relationships, different results might occur should researchers explore measures designed more specifically to measure the construct of creativity. For example, the Omnibus Personality Inventory was not intended to be a measure of creative thinking or ability but rather a global personality assessment. Similarly, alternative operational definitions of teacher effectiveness tied more explicitly to behaviors music teachers needed to be successful rather than administrators’ opinions might affect whether a relationship would be found between creativity and teacher effectiveness. In a more recent study, Auh and Walker (2003) examined relationships among music teacher creativity, music education grades, formal and informal musical experience, teaching experience, and gender with a sample of 19 undergraduate music education students. Results indicated that music education course grades were the only significant predictor of music teacher creativity. However, the operational definition of music teacher creativity employed by Auh and Walker included three, 5-point rating scales intended to measure originality (i.e., uniqueness in music teaching), musical skills and knowledge (i.e., singing ability, repertoire choices), and teaching skills (i.e., motivating students, making music fun and

interesting). It is possible that the breadth of this operational definition may capture many elements that are conceptually distinct from attributes or characteristics associated with music teacher creativity. Given the dearth of studies and limitations of existing research, it is clear that more research is necessary to understanding and identifying music teacher creativity as well as its potential correlates.

Research exploring the nature and definition of effective music teaching has revealed it to be a multi-faceted and complex notion (e.g., Brand, 1985; Duke, 2000; Grant & Drafall, 1991; Rohwer & Henry, 2004). Although some universals regarding effective teaching may exist such as a concern for students and a baseline level of content knowledge; variations in setting (e.g., rural, suburban, urban), content-area (e.g., choral, instrumental, general), and student age and experience level are all likely to affect the set of characteristics, skills, and degree of each that must be present for a teacher to be effective. Given similar conditions, it is logical to assume that the concept of music teacher creativity is also complex and multi-faceted. Therefore, researchers investigating music teacher creativity should consider theoretical frameworks that encompass a multi-dimensional approach. One such method for identifying a creative music teacher yet to be employed in music education research is the confluence approach.

Sternberg and Lubart (1996) have proposed a confluence model of creativity that identifies six distinct yet interrelated personal resources that empower an individual to be creative (see also Sternberg, 2006 for a summary). The resources were as follows: (a) intellectual skills, with particular attention to synthetic, analytical, and practical thinking abilities; (b) having enough knowledge to contribute to a field, yet not being entrenched or overly set in previous ideas; (c) a legislative thinking

style indicating one's willingness to think along new lines; (d) a personality showing openness to new experiences, willing to take sensible risks, and willing to tolerate ambiguity; (e) an intrinsic, task-focused motivational orientation or an ability to find intrinsic motivation given a task not immediately interested in; and (f) an environment conducive to creativity by supporting and rewarding creative ideas. Rather than suggesting that each personal resource was summed to indicate an overall potential for creativity, Sternberg and Lubart proposed that the confluence of these resources was likely dependent on threshold levels, compensation, and multiplicative interaction. Certain baseline levels or thresholds of each resource might need to be present for an individual to be creative. For example, a minimal willingness to take risks might be necessary if someone was to introduce and carry out a novel or original creative idea. The researchers also suggested that deficiencies in one resource might be compensated by particularly high levels of other resources. As an example, an individual might not be extremely motivated to pursue a task but might have a very strong desire to think legislatively and therefore might end up being creative despite their motivational orientation. Lastly, Sternberg and Lubart hypothesized that high levels in two or more resources might interact in such a way as to enhance creativity more greatly than any single resource alone.

The purpose of this study was to explore the viability of adapting the Sternberg and Lubart (1996) confluence model of creativity for application in the context of preservice instrumental music teacher creativity. Given the multi-dimensional nature of this model and the nascent condition of this research topic, an exploratory case-study approach was employed. The specific research questions addressed were: (a) Would a particular

profile of personal resources consistent with the Sternberg and Lubart confluence model (i.e., intellect, knowledge, thinking style, personality, motivation, environment) emerge that was related to a consensual assessment of music teacher creativity? (b) Was there a relationship between preservice music teacher creativity and teacher effectiveness? And (c) was there a relationship between preservice music teacher creativity and student performance achievement?

Method

Case study design

The study employed a holistic, multiple-case study design in which the units of analysis were the individual participants (Yin, 2003). I have drawn from Yin's (2003) definitions of case study designs as holistic or embedded, single- or multiple-case, to delineate the design of this study (see Yin, 2003, p. 40, figure 2.4). The unit of analysis in this study was the individual preservice teacher and there were two teachers included in the study. Thus, it was a multiple-case study design. The designation as a holistic case study rather than embedded reflected the fact that there was one unit of analysis per case and no further subsidiary units of analysis.

Cases

The participants in this study were two female, music education students at a large Southwestern university. One participant, Tina, was pursuing teaching certification after completing a BM and MM in performance. The other participant, Maggie, was pursuing a traditional BME degree. For the purposes of confidentiality, pseudonyms are used for the participants in this report. Both participants were brass players and had completed the exact same music education coursework and practicum hours. The completed music education

courses included introduction to music education, techniques courses (i.e., brass, woodwind, strings, percussion, voice), instrumental conducting, instrumental methods and materials, and general music methods. Although Tina was three years older and had more music performance experience than Maggie, the participants had equal amounts of formal teacher training experience. Participants completed a university-sponsored informed consent protocol to take part in this study.

The participants were serving as instructors in a university-sponsored middle school band outreach program during this study. The researcher was the faculty advisor responsible for the program. The participants were required to submit a formal application including a resume and written statement to be considered as a teacher for the program. The application process occurred prior to the researcher's formulation of the study. The participants were chosen for their roles based on merit and experience. Each participant received a small scholarship for service in the program. Both were responsible for rehearsing separate, grade-two band pieces with an ensemble of 60, 6th through 8th grade students. Due to scheduling issues Maggie was able to rehearse the full band eight times across the length of the program, whereas Tina rehearsed the band six times. The participants taught for approximately 10 to 15 minutes at each rehearsal and were solely responsible for preparing their assigned piece of music with the full band. The participants were not required to submit lesson plans for approval. However, a university instructor was available to meet with the students should they have questions or concerns about a previous or upcoming rehearsal. Neither the preservice teacher participants nor the middle school students were made aware of the purpose of this study while serving in the outreach program.

Furthermore, there was no unusual stress on the importance of teacher creativity provided by the researcher during the program when providing feedback or advice. The band students in the outreach program were from 13 different middle schools in the university's surrounding area and varied widely in skill and experience level (e.g., 1 to 4 years).

Data Sources (also see Appendix)

Teaching effectiveness. Each participant's weekly rehearsal segment as well as their final performance was video recorded with a Panasonic PVGS35 mini-DV camera aimed at the teacher from the back of the rehearsal room or stage as necessary. Due to video camera availability and related logistical issues, Maggie had a total of seven recorded teaching segments and Tina had a total of four. The teaching segments were transferred to Quicktime format and burned to a recordable DVD. The researcher and an independent rater evaluated the teaching videos using a researcher-adaptation of the Hamann and Baker (1996) Survey of Teaching Effectiveness (STE). The independent rater was a graduate music education student with three years of public school instrumental music teaching experience. The researcher-adapted STE included 26 items designed to assess lesson delivery skills (i.e., posture, eye contact, gestures, facial expression, vocal inflection) and lesson planning/presentation skills (i.e., content, organization, subject matter competence, pacing, sequencing, teaching style). Raters responded to each item using a 5-point, Likert-type scale ranging from "poor" to "excellent." Each item had descriptions of poor and excellent criteria to consider. The total score possible on the researcher-adapted STE ranged from 26 to 130. Each rater viewed the teaching segments in a different random order. In the current study,

the relative values (i.e., changes over time and differences between the two participants) were nearly identical between the raters suggesting a high level of reliability. Scores between raters were never more than 16 points apart. Previous studies reported evidence of validity for the STE when correlating scores with experts' rankings (Fant, 1996) as well as good test-retest reliability (Hamann, 1995).

Student achievement. Video recordings of the participants' final performances were rated for student performance achievement by the researcher and the aforementioned independent rater using a researcher-adaptation of the Bergee (2004) Concert Band Performance Assessment Scale. The measure used in the current study included 17 items designed to assess musicianship, expressiveness, tone quality, intonation, rhythm, and articulation. Raters responded to each item on a 5-point, Likert-type scale ranging from "strongly disagree" to "strongly agree." The total score possible on this measure ranged from 17 to 85. The rank order of participants' performances derived from the independent raters' assessments were identical. In addition, Bergee (1994, 2004) has presented evidence of reliability and validity for this measure in multiple band performance contexts.

Self-report measures. Participants were administered three psychological self-report measures following the completion of the outreach program: (a) the Sternberg and Wagner (1991) Thinking Styles Questionnaire (O'Hara & Sternberg, 2001), (b) the Costa and McCrae (1992) NEO-PI-R, and (c) a researcher-adapted Motivation for Teaching Questionnaire. These measures were included to collect data for three of the personal resources highlighted in the Sternberg and Lubart model (1996):

thinking style, personality, and motivation, respectively. The participants completed all self-report measures in one, 30-minute session. The Sternberg and Wagner questionnaire consisted of three sub-scales designed to measure legislative (e.g., I use my own ideas and strategies to solve problems), judicial (e.g., I like to compare and rate different ways of doing things), and executive (e.g., I like to follow definite rules or directions) thinking styles. Participants responded to how well each of the 24 items described them on a Likert-type scale ranging from 1 “not at all well” to 7 “extremely well.” The range of scores for the legislative, judicial, and executive sub-scales was 9 to 63, 8 to 56, and 7 to 49 respectively. Previous studies have demonstrated validity for the measure through factor analyses and have reported reliability coefficients for college age participants ranging from .72 to .81 (O’Hara & Sternberg, 2001). The NEO-PI-R consisted of 240 items designed to measure five global personality facets: neuroticism (e.g., emotional stability vs. maladjustment), extraversion (e.g., sociability, assertive, active, talkative), openness (e.g., imaginative, aesthetic sensitivity, preference for variety, independent judgment), agreeableness (e.g., altruistic, sympathetic vs. egotistic, skeptical), and conscientiousness (e.g., purposeful, strong-willed vs. prone to impulses and temptation). Although each of the five facets was comprised of six, more specific scales, only the five facet scores were reported given that the constructs derived at the five-facet-level were the most relevant to the Sternberg and Lubart (1996) confluence model (i.e., openness and extraversion). Participants responded to statements regarding personality traits using a 5-point, Likert-type scale ranging from “strongly disagree” to “strongly agree.” Each facet has a total possible score range from 0 to 192.

Extensive validity and reliability information as well as a description of the development of the assessment tool were provided in the manual (see Costa & McCrae, 1992). The researcher-adapted Motivation for Teaching Questionnaire consisted of 10 items designed to measure intrinsic (e.g., I am more interested in satisfying my love for teaching than other potential rewards) and mastery (e.g., I prepare for teaching lessons because I want to be the best teacher I can be) motivation orientations toward engaging and persisting in teaching. Participants responded to each statement using a Likert-type scale ranging from 1 “not at all true of me” to 7 “very true of me,” which resulted in a total possible score range from 10 to 70. Items for this scale were adapted from previous measures designed by Schmidt (2005) and Miksza (2008), who each found excellent reliability results in the context of music education.

Participant interviews. The researcher conducted private semi-structured, open-ended interviews with each of the participants immediately following the completion of the self-report measures. Interviews were recorded using a Sony MZ-R700 minidisc recorder and Sony ECM-MS907 microphone. The interviews were transcribed by the researcher verbatim. In order to reduce bias, the interview questions were identical across participants and only generic probes were used when asking for clarification or elaboration of responses (e.g., can you tell me more about that, anything else) (Fowler & Mangione, 1990). The interviews were designed to gather information on elements of the Sternberg and Lubart (1996) confluence theory not associated with any of the self-report measures as well as to probe more deeply for information regarding the elements of the confluence theory assessed in other ways (e.g., thinking style, personality,

motivation). The specific personal resources that were examined exclusively by means of the interview questions were knowledge and environment. Questions were also included to examine the participants' thoughts regarding the nature of creativity and its relation to teaching music. The interview questions are presented in Figure 3. The preservice teacher participants were debriefed as to the purpose of the study following each interview. Participants were also sent the transcripts and summaries of their interview responses to confirm the meaning and accuracy of the researcher's interpretations.

Preservice music teacher creativity.

The participants were assessed for music teacher creativity using a consensual assessment technique (e.g., Amabile, 1996; Hickey, 2001). Four independent judges viewed all teaching videos in a unique random order and ranked the participants. Each independent judge was a graduate music education student with several years of instrumental music teaching experience. The judges were told to rank the participants relative to each other rather than consider an idealized standard. In addition, the judges were guided to consider criteria commonly associated with notions of creative thought and action (e.g., novel or original ideas for the lesson, adapting to the moment, being flexible in approach and/or trying out many different ideas, and evidence of divergent thinking). Lastly, the judges ranked the participants on separate criteria (e.g., conducting effectiveness) in order to check for discriminant validity. Creativity rankings across the four independent judges were unanimous.

Results

Participant Profile Comparisons

Data representing each of the personal resources of the Sternberg and

Lubart (1996) confluence model were collected for each participant. Archival data revealed that both participants had music-course specific and cumulative GPAs greater than 3.3 on a 4-point scale. Given that the coursework in which they participated required the exercise of synthetic, analytic, and practical-application intellectual skills, it could be assumed that the participants possessed at least what Sternberg and Lubart might consider the minimum threshold of intellect conducive to creativity. Profile plots of results for the Thinking Styles Questionnaire, NEO-PI-R, and Motivation for Teaching Questionnaire are presented in Figure 1. Results of the Thinking Styles Questionnaire indicated that Tina exceeded Maggie's scores on the executive and judicial sub-scales, whereas Maggie had a higher score on the legislative sub-scale. The largest discrepancies between the participants were found between the executive and legislative sub-scale scores. The NEO-PI-R scores indicated that Tina scored higher on the neuroticism and conscientiousness facets, whereas Maggie scored higher on the extraversion, openness, and agreeableness facets. However, both participants' openness facet scores were considerably higher than the norm for college-age women (Costa & McCrae, 1992). In addition, Maggie's score on the extraversion facet was considerably higher than the norm, whereas Tina's score on the agreeableness facet was considerable lower than the norm. Results of the Motivation for Teaching questionnaire indicated that both participants had strong intrinsic/mastery motivation orientations towards teaching.

Teacher effectiveness ratings and student performance achievement ratings are presented in Figure 2. Results of the teacher effectiveness ratings revealed that both participants' teaching improved over time. However, the improvement made by Maggie was more pronounced. In addition, Maggie's

effectiveness ratings were consistently higher than Tina's at each comparable point in time. The student achievement scores

indicated a similar trend in that Maggie's final performance was rated somewhat higher than Tina's.

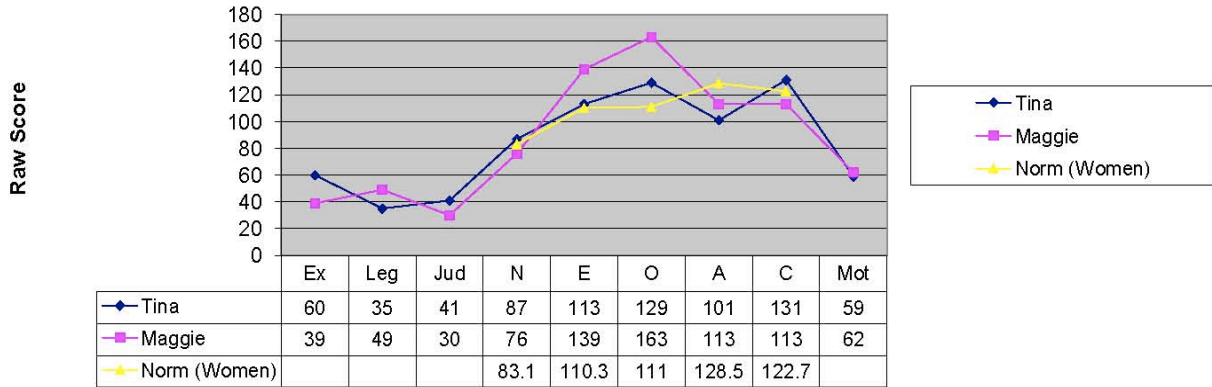


Figure 1. Profile plots of Thinking Style, Personality, and Motivation sub-scales. Note. Ex=executive thinking style, Leg=legislative thinking style, Jud=judicial thinking style, N=neuroticism, E=extraversion, O=openness, A=agreeableness, C=conscientiousness, Mot=motivation for teaching, and Norm=NEO-PI-R norms from manual.

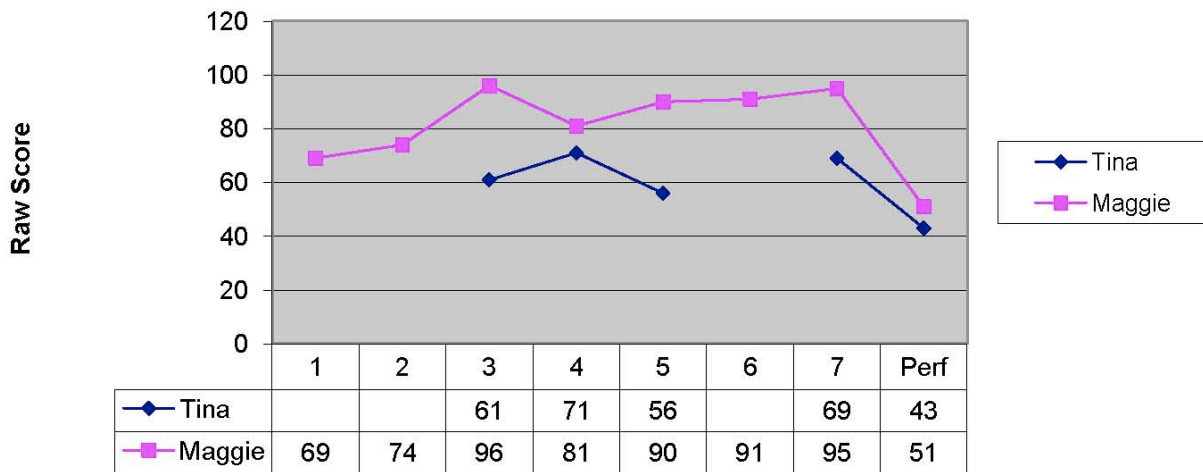


Figure 2. Profile plots of teacher effectiveness ratings across seven weeks and student performance achievement at the final concert.

Summaries of the participants' responses to the interview questions are presented in Figure 3. Interview questions 3 and 7 were designed to gather information regarding thresholds of knowledge and whether the outreach program environment was conducive to creative possibilities, respectively. For example, both participants said "yes" when responding to the question "Did you feel like the program allowed you to try out and experiment with new ideas?" Maggie felt that she was equipped with enough knowledge to be successful in the program, whereas Tina did not. In addition, both suggested that they could benefit from more teaching experience to apply the knowledge they had. Responses to question 8 suggested that both participants believed the environment to be supportive of creative teaching. However, Tina acknowledged that she did not take advantage of those possibilities.

Interview questions 2, 4, 5, and 6 were included to gather more detailed and context-specific information about the personal resources assessed through the self-report measures. Responses to question 2 confirmed the results of the Motivation for Teaching Questionnaire in that both participants indicated an intrinsic/mastery motivation orientation. The responses to questions 4 and 5 somewhat reinforced the results of the legislative and executive thinking style sub-scales. Maggie indicated that she was likely to experiment with new ideas (e.g., relatively legislative), whereas Tina was less confident and wanted to implement only those ideas that she was confident would keep her from failing (e.g., relatively executive). Responses to question 6 were in accordance with the results of the

openness facet scores of the NEO-PI-R. Maggie's willingness to take risks was congruent with her higher openness score.

The remaining questions on the interview addressed self-perceptions of teacher effectiveness (question 1), personal impressions of teacher creativity (question 8), and self-perceptions of whether they felt they exhibited creative teaching (questions 9 and 10). Maggie believed that her teaching was effective and that she improved as time went on. She also indicated that she was able to be more refined and flexible in her lesson planning. In contrast, Tina highlighted her need for improvement and felt that she was minimally effective as evidenced by how she perceived student progress over time. Maggie highlighted several specific, personal characteristics that she felt were part of being a creative teacher (e.g., open-minded, flexible, confident, and humorous), whereas Tina more generally defined a creative teacher as someone who can engage and inspire students to learn and solve problems. Maggie believed that she was able to be creative when teaching and only cited limited student technique when mentioning restraints. For example, she found it more difficult to come up with creative approaches to teaching basic fundamentals (e.g., notes and rhythms) as opposed to more abstract musical concepts (e.g., phrasing and style). Tina did not believe that she was able to be creative and cited personal nervousness and self-imposed pressures to succeed as her primary restraints. Although for somewhat different reasons, both participants believed that creativity was an important element of effective teaching.

<i>Interview Question</i>	<i>Tina</i>	<i>Maggie</i>
<i>1. How effective do you feel you were as a teacher over the course of this project?</i>	Not as could have been, room for improvement, kids played pretty well though	Good results, developed to better meet student's musical needs, more refined and flexible planning
<i>2. What do you see as the primary potential reward of teaching in this program?</i>	A learning experience for me, different than traditional practicum	Personal satisfaction, benefits for community, kids
<i>3. Did you ever feel that you either: (a) needed more knowledge about teaching, (b) were stuck in your old knowledge about teaching, or (c) had just enough knowledge to be successful?</i>	Need more - but also experience to learn how to apply knowledge, want more of everything (e.g., classroom management)	Enough knowledge but need more experience
<i>4. Did you notice that you were thinking in "new ways" about teaching during this project?</i>	No, in survival mode, not able to reflect	More of student perspective and how to reach them
<i>5. How has your thinking about teaching changed as a result of this project?</i>	But do feel more confident now, will allow me to think more in future	More experimental and flexible in approach
<i>6. Did you take any "sensible risks" in your teaching in this program?</i>	No, self-conscious of not making errors, go in and get out	Yes
<i>7. Did you feel like the program design allowed you to try out and experiment with new ideas?</i>	Yes, didn't take advantage, help and support available, the one place it was safe to fail and try again, would have been positive if did take risks	Yes, controlled environment, but time crunch so needed to related to music
<i>8. What do you think it means to be a creative teacher?</i>	One who can engage students, the ability to inspire, have students problem-solve	Open-minded, not set style, not the same as being a creative person but related, helps to not be stuck in ways, rapport with kids, flexible, humor, confidence, imagery
<i>9. Did you feel you were able to be creative when teaching?</i>	No, too nervous	Yes, especially as students developed technique
<i>10. What elements do you think may have impacted whether or not you were able to be creative when teaching?</i>	Too nervous, self-imposed pressure to impact students	Limited technique of students, confidence, experience
<i>11. Do you think that creativity is important for effective teaching?</i>	Yes, so learning is not boring or monotonous, keep involved in learning process	Yes, keeps students engaged, promotes higher learning, more inspiring for students, easier to grasp aesthetic values and broader musical concepts

Figure 3. Summaries of interview responses for each participant.

Relationships among Consensual Assessment of Preservice Music Teacher Creativity, Personal Resources Highlighted by Sternberg and Lubart, Teacher Effectiveness, and Student Performance Achievement

Rankings of music teacher creativity gathered from four independent judges using a consensual assessment technique resulted in a unanimous decision of Maggie exhibiting more creative teaching than Tina. This result reflected the patterned differences between the participants' profiles that emerged from the data sources. In comparison to Tina, Maggie's profile indicated more confidence in knowledge level, a more legislative thinking style, a more experimental and flexible approach to thinking about teaching, and greater degrees of extraversion, openness, and willingness to take risks. Maggie also reported that she was able to be creative during the outreach program and provided a somewhat more detailed description of what she believed to be a creative teacher. Each of these contrasts was in accordance with the profile of personal resources highlighted in Sternberg and Lubart's (1996) confluence model of creativity. Rankings of music teacher creativity also appeared to be positively related to teacher effectiveness and student performance achievement. Maggie's teacher effectiveness scores and the student achievement score from her final performance were higher than Tina's.

Discussion

This primary purpose of this exploratory case study was to examine the viability of adapting the Sternberg and Lubart (1996) confluence model of creativity to the context of instrumental music education. Measures were administered consistent with the thinking style, personality, motivation, knowledge, and environment resources highlighted by

Sternberg and Lubart (1996). A distinct profile of personal resources emerged for the participant ranked as the more creative teacher. The profile that emerged was congruent with Sternberg and Lubart's theory. The teacher ranked as relatively more creative reported a more comfortable level of knowledge about music teaching, a greater preference for legislative thinking, and a greater degree of the personality traits (e.g., openness and risk taking) consistent with the theorists' notions of which resources might indicate a potentially creative individual. Although only preliminary in nature, these findings suggested that the Sternberg and Lubart confluence model of creativity might be a valid means for identifying creative instrumental music teachers. While compelling, it was also important that the results of this study be considered with respect to the small number of cases observed. Replications and studies incorporating larger samples would be useful to determine the generalizability of the findings.

An examination of the relationships among music teacher creativity, teacher effectiveness, and student performance achievement also revealed an interesting pattern. The participant ranked more creative also had higher scores for both teacher effectiveness ratings and student achievement. Furthermore, although both participants' effectiveness ratings improved somewhat over time, the participant ranked more creative improved in larger intervals. These findings indicate that not only might a more creative teacher be more likely to be more effective, but that a creative teacher may also be more efficient in learning and quicker to improve their teaching over time. In addition, it may be that a teacher who is more creative will also be better equipped to influence change in student achievement. It is logical to assume that a teacher who is

more willing to experiment with new ideas, be flexible, and take sensible risks is also more likely to discover new and useful methods for reaching children.

The findings of this study have many useful practical implications for the training of future music teachers. The relationships found between music teacher creativity and teacher effectiveness suggest that preservice teachers may benefit from curricular projects or assessments that stress a legislative thinking style. Implementing course projects that require students to develop original ideas and evaluate competing theories may be more likely to help students develop a legislative thinking style than assigning projects that consist exclusively of convergent thinking tasks. Assignments and practicum experiences could also be designed in such a way that the students are encouraged to take reasonable risks and experiment with new ideas. However, the assessment procedures for situations such as this must provide the student with a way of feeling safe to fail to some degree. Teacher educators could also add attributes or characteristics of what they consider to be creative teaching to practicum and peer-teaching evaluation forms. Doing so would stress the importance of considering creative approaches when learning. Furthermore, teacher educators should model the attributes and characteristics of creative music teaching such as openness to new ideas for their students.

The exploratory nature of this study leaves many avenues open for future researchers to pursue. Given the small number of participants, it is important that researchers replicate the findings from this study with larger and more diverse samples of teachers. Replication across content areas such as in the contexts of choral teaching, general music teaching, and music teacher education may reveal interesting

comparisons to the current study. Researchers should also explore more refined operational definitions when assessing intellectual ability and knowledge as personal resources. For example, while the assumption that a threshold of intellectual abilities may have been reached by each participant as evidenced through their coursework is reasonable, more clear measures of practical, analytical, and synthetic intellectual abilities congruent with Sternberg and Lubart's (1996) theoretical stance are important for future research. The relative contribution of these personal resources to the profile of a creative teacher may differ drastically should more precise measurement approaches be used. Observational analyses of teachers identified as having a profile conducive to creativity may also be beneficial. Determining which specific behaviors might predict assessments of music teacher creativity is important for validating the theoretical model in the context of music education. Lastly, music teacher creativity could also be compared with criteria other than ratings of teacher effectiveness and student achievement. For example, it may be beneficial to investigate whether more creative teachers also tend to be more confident and satisfied with their choice of profession. Results from such studies would have important implications for music teacher retention.

Music teacher educators must continue to explore ways of preparing future teachers for the myriad number of possibilities that await them at their first job. The findings of this study represent preliminary evidence that the Sternberg and Lubart confluence model can be applied towards understanding music teacher creativity in a valid way. Although the results are encouraging, more research is clearly needed which replicates the findings and extends the scope of the current study. Identifying a well-reasoned theoretical

framework for understanding music teacher creativity is only an initial step. The theoretical approach must be grounded in evidence and critically examined through research. A clear understanding of music teacher creativity and its relationship to

effective teaching can serve as a resource that will help music teacher educators prepare future teachers to be flexible, adaptable, and successful as they face the inevitable uncertainties of entering a new profession.

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CHINESE ABSTRACT

中文摘要

職前音樂教師創造性匯合模式的探索性研究

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本研究調查在職前器樂教學背景下運用 *Sternberg and Lubart (1995)* 創造性匯合模式的可行性。這一模式提出一個人的創造能力取決於六大截然不同而互相關聯的個體資源，即智力、知識、思維風格、個性、動機和環境限制。兩位在樂隊拓展課程中任教的本科音樂教育學生參與了本研究。數據來源包括 (a) *Sternberg and Wagner (1991)* 的思維風格問卷 (*O'Hara & Sternberg, 2001*)，

(b) *Costa and McCrae (1992)* 的 *NEO-PI-R* 人格問卷，(c) 經研究者調適的教學動機問卷，(d) 七周教學有效性的客觀測量，(e) 學生成績的客觀測量，(f) 半結構、開放式訪談，以及(g) 音樂教師創造性的評估。所觀察數據的信度經獨立鑑定人檢驗。研究結果說明，音樂教師的創造性評級源自教師創造力的評估，此評估與由心理測量和訪談而得的教師剖面相符合。而這正與 *Sternberg* 和 *Lubart's* 的理論一致。最具創造性的教師(a) 在思維風格問卷中立法思考水平分最高，(b) 在 *NEO-PI-R* 人格問卷中開放水平分最高，(c) 表示願意承受風險，(d) 表現出最高水平的內在動機，並且(e) 認為周圍環境對各種創造可能性是開放的。儘管兩位參與者的教學有效性水平與日俱增，但從整體上看較具創造性的教師的教學則更為有效。