Differentiating for Multiple Intelligences
A Study of Students' Understandings through the Use of Aesthetic Representations

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Introduction

Traditional methods of education rarely take into account the value of teaching concepts in "multiple ways" through a variety of means such as "music, art, mathematics, drama, and language" (Short, Kauffman, & Kahn, 2000, p. 160). More often than not, students are expected to demonstrate their knowledge of academic concepts within the parameters set by the teacher, usually through paper-and-pencil assessments (Eisner, 1997). We can liken these demonstrations of learning to a snapshot taken from only one angle. Multiple snapshots taken from different angles and perspectives provide a more holistic picture of learners' understandings. Gardner's (1983) concept of multiple intelligences supports the notion that individuals best interpret their world using a variety of lenses. To evaluate what learners understand, teachers must develop assessments that honor the multiple angles and perspectives that students bring to the learning environment.

As teacher educators at a large public university, we have our

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preservice teachers create "aesthetic representations" (Cuero, Bonner, Smith, Schwartz, Touchstone, & Vela, 2008; Cuero & Crim, 2008), using multiple forms of representation (Eisner, 1997), particularly in the fine arts, e.g., dance, musical performance, painting, sculpting, to demonstrate their personal connections to specific academic content. In this study, we investigated the extent to which students' aesthetic representations reflect their individual multiple intelligence strength(s) and explored how the use of aesthetic representations supports the philosophy of differentiation in a university setting.

We begin with a review of the relevant literature in regard to differentiation, multiple intelligences, and aesthetic representations. Next, we present the methodology, report our findings, and discuss themes related to our research questions. Finally, we conclude that tapping into students' multiple intelligence strength(s) is an excellent way for students to demonstrate their understanding of content.

Literature Review

As there are multiple ways of knowing, there are also multiple ways for students to demonstrate learning (Tomlinson, 1999). All too often, the two traditional measures of intelligence—linguistic and mathematical—are the pervasive and rigid foci in school settings (Eisner, 1997). As noted by Diaz-Lefabvre (2004), this "rigidity" limits students at the elementary, middle, and high school levels as well as adult learners at the university level. Learners who have musical strengths, for example, may not be able to effectively demonstrate what they have learned through linguistic or mathematical means. If they are given the opportunity to demonstrate learning in a way or ways that showcase their personal strengths, students may be more likely to engage with course content and be successful in academic contexts (Gardner, 1999). Tomlinson (2003) explains that, to produce truly knowledgeable and well-informed students, teachers must not only teach concepts in multiple ways but also allow for students to demonstrate learning in a variety of ways. This study, which pressed our preservice teachers to demonstrate their learning through art, draws from three bodies of literature: differentiation as a way to meet the needs of all learners, Gardner's (1983) theory of multiple intelligences, and aesthetic representations to integrate the arts and complex thinking across the curriculum.

Differentiation

Teachers who acknowledge and actively engage various ways of knowing tend to differentiate their teaching and their classroom envi-

ronments. Tomlinson (1999) refers to differentiation as a mindset, or a teaching philosophy, and identifies three areas in which teachers may differentiate instruction: in the content that they teach, through the processes in which the material is presented, and by the products that students produce that are representative of what they have learned. In the classroom, differentiation may allow students choice in the areas of content (i.e., specific information and related topics), process (i.e., means by which students explore course content), and/or product (i.e., the finished products that students present that demonstrate their understandings of course topics). Differentiation also may occur as teachers make decisions about content, processes, and/or products based on students' interest areas, learning profiles, and/or levels of readiness (Tomlinson, 1999; Tomlinson & Imbeau, 2010), as opposed to making decisions based solely on a timeframe and/or curriculum dictated by school districts or due to a need to engage in particular activities developed during grade-level planning sessions. Other components of a differentiated classroom include academic rigor based in respectful and challenging tasks and opportunities for students to express themselves and their understanding of academic concepts in ways that make sense to them (Tomlinson, 2003).

Tomlinson (2003) identifies the following three cogs of differentiation that should "remain carefully calibrated to work in concert":

> • Human needs where *students* seek challenge, affirmation, contribution, power, and purpose;
>
> • A compass for decision making where *teachers* respond with invitation, investment, persistence, opportunity, and reflection; and
>
> • Effective teaching where *curriculum and instruction* serve to make learning demanding, scaffolded, important, focused, and engaging. (p. 12)

When differentiation is fostered, teachers recognize, accept, and value various ways in which students acquire and understand new information. Through the use of differentiated assignments, activities, and assessments, the curriculum has the capacity to move beyond linear and quantifiable thinking. It is at this point that students can form personal, unique, and academic connections to new content (Eisner, 1997). Further, teachers can gain insight, in a personalized context, into the individual connections of each student. Incorporating student choice also is a hallmark of a differentiated classroom.

Multiple Intelligences

Gardner's (1983) theory of multiple intelligences suggests a nontraditional approach to the construct of intelligence and asserts that there

are multiple ways in which people process the world and demonstrate strengths. In other words, there are different ways to be smart. Traditional measures of intelligence are narrowly focused and often equated with a single, quantifiable number or score. This singular way of defining intelligence(s) has permeated our schools and has caused educators to view student potential through a restrictive lens, lauding those who demonstrate high verbal and quantitative thinking skills (as defined by assessments that target these traditional areas of achievement). Gardner introduced a new way of thinking about intelligence and was one of the first to refer to this construct in the plural. In addition to the two traditional measures of intelligence (verbal/linguistic and logical/mathematical), Gardner originally proposed five other intelligences: visual-spatial, musical, body-kinesthetic, interpersonal, and intrapersonal. Later, he added two other areas of intelligence: naturalistic and existential (Gardner, 1999).

The field of education has readily accepted three learning styles (i.e., visual, auditory, and tactile/kinesthetic) as the modalities in which learners acquire and process new information. The theory of multiple intelligences identifies areas through which individuals see the world and express themselves. So while a musician may be a visual learner, preferring to read information and see information expressed in graphic organizers, she may best remember what she read by putting the information to a beat. She also may best express herself through the flow and rhythm of music and song, drawing from her musical multiple intelligence area of strength. This same individual may struggle within a traditional activity that asks her to label the parts of the brain on a worksheet but demonstrate exceptional understanding of the brain when linking the parts, their placement, and function through an original song.

The theory of multiple intelligences offers support for instructional approaches that incorporate a variety of connections for teaching and learning that validate the unique experiences, interests, and cultures of all students. Given that individuals gravitate to the areas in which they have strengths and can incorporate these areas into their learning, the concept of multiple intelligences is uniquely suited to support and enhance a differentiated classroom. In this regard, Eisner (2004) stated:

> There is something intuitively right about recognizing that people differ in the ways in which they function best. There is something socially right about the ideas that children and adolescents should be given an opportunity to shine in classrooms in which their particular strengths can be nurtured and made public. (p. 33)

Tomlinson's (1999) model of differentiation underscores the need to

identify and create space for multiple intelligences to foster individual interest(s) and student learning profiles in the classroom. For the purpose of this study, our analysis centers on the area of learning preferences as operationalized in much of the literature on multiple intelligences (Gardner, 1983, 1999; Tomlinson, 1999) and how these learning preferences align with students' products (e.g., aesthetic representations).

Aesthetic Representations

The revised Bloom's Taxonomy identifies the act of "creating" as the most complex level of thinking (Anderson & Krathwohl, 2001). Aesthetic representations, by their very nature, foster learners' creating. When discussing aesthetic productions, Kemple and Johnson (2002) explain:

> The productive component corresponds to creative expression or the act of putting things (ideas, materials, sounds, etc.) together in a novel way that has personal meaning and personal purpose. . . . The responsive component encompasses appreciation of natural beauty, appreciation of the arts, and forming judgments and preferences concerning aesthetic productions. (p. 211)

It is from this notion that we define the individual process that results in a completed aesthetic representation project. This method of expression also embraces Eisner's (1997) position that integrating the arts into academic settings adds to the academic and cognitive rigor that we desire for our students.

Researchers across academic disciplines have documented the effects of utilizing nontraditional projects and assignments, into university coursework, that integrate aesthetic elements. For example, preservice teachers in one educational psychology course represented their understandings of course content through the use of computer software that allowed them to graphically represent aspects of learning theory (Cunningham & Stewart, 2003). In the field of medicine, Shapiro et al. (2006) documented the use of "creative projects" in a gross anatomy course to engage students in a reflection on their experiences in the course. Through this process of creation and reflection, researchers found that the creative projects assisted students in developing self-awareness and an understanding of "the doctor-patient relationship, empathy, death and dying, and their own spirituality" (p. 23). Such practical examples highlight the classroom uses and cross-curricular connections supported by the use of artistic and creative endeavors.

Studies situated in teacher education found that participating preservice teachers were able to demonstrate their understandings of course content (i.e., elements of literacy learning) through various artis-

tic techniques and media (Cuero et al., 2008; Cuero & Crim, 2008). The study outcomes indicated that preservice teachers engaged in continuous, personal evaluations, as "they had to contemplate, analyze, and justify their connections and those of their peers" (p. 138). As demonstrated in cross-curricular contexts, the use of the aesthetics can support academic rigor and choice in a classroom while also honoring students' individual strengths and experiences. It is our thought that such individual connections will reflect students' areas of multiple intelligence strengths while also supporting the philosophy of differentiation in the classroom.

Methodology

In our literature review, we discussed three areas of study (i.e., differentiation, multiple intelligences, and aesthetic representations) that have not been previously linked in research. This study attempts to address this gap in the literature. As teacher educators, we found that using aesthetic representations as a component of university coursework is a way to add academic and cognitive rigor to course content while differentiating to accommodate students' strongest areas of multiple intelligences. Representing accumulated knowledge aesthetically, as opposed to only in paper-and-pencil-type assessments and activities, allows students to express information in a way that is most meaningful and significant for them (Cuero et al., 2008; Cuero & Crim, 2008). This process of creation pushes students to work through the complexity of thinking that is linked with the experience of "creating." Additionally, sharing aesthetic representations with classmates allows each person to see elements of the course content from the perspective of other learners in the course, thus broadening and deepening his or her own understandings.

The study was guided by two research questions:

1. How do students perceive the alignment between their aesthetic representations and their self-identified strongest area(s) of multiple intelligences?

2. How do aesthetic representations allow for differentiation in the university classroom?

Our research was conducted in a large public university's teacher certification program that serves approximately 3,000 undergraduate students. Our undergraduate courses serve preservice elementary teachers, who represent a broad range of ages and come from a variety of backgrounds, including many first-generation university attendees.

The participants for this study consisted of 122 undergraduate

students who were seeking elementary certification and were enrolled in a total of five sections of a required course, *Principles and Practices of Differentiated Education*. The study spanned various semesters: one section of the class in spring 2008, one section in summer 2008, and three sections in fall 2008. In the development of the course, the first and third author/researchers (professors of this course) were concerned with not only teaching the academic content of the course but also with modeling differentiated instructional practices for preservice teachers. In addition to project menus, flexible grouping, varied text, and other differentiated practices, the two professor-researchers included aesthetic representations in these course sections because they exemplify best practices and honor the unique experiences, interests, and cultures of our diverse student population.

At the end of the semester, we asked students whether they would be willing to participate in a study that entailed their submitting various work products from the course for analysis. Based on IRB requirements, students were not told about the study at the beginning of the semester so that their understanding of the study would not influence their work. Additionally, we did not want students to feel as though their grade would be affected if they chose not to participate in the study. When asked to participate and to provide informed consent, all 122 students who were enrolled in the courses voluntarily agreed to contribute their work for this study.

As part of previewing the semester expectations, on the first day of classes, instructors explained to students that, toward the end of the semester, they would be expected to demonstrate their understanding of an element of differentiation through the creation of an aesthetic representation. Midway through the semester, the aesthetic representation assignment was discussed again, in greater detail. The second author/researcher provided the two professor-researchers with materials to support students' conceptualization of aesthetic representations, such as a PowerPoint presentation with over 50 photographs of past aesthetic representations in literacy, which used a wide range of artistic media, as well as a jigsaw activity that included five reflective essays of former students, who recounted their experiences of creating aesthetic representations. Through a jigsaw format, students discussed with their classmates the aesthetic representation examples, what mediums were used, and how various connections to course content were established. Students were encouraged to begin thinking about their own strengths and how they might represent, aesthetically, their personal understandings about differentiation. There also were opportunities during class for students to share ideas for their own aesthetic representations.

In the two weeks following the detailed description of the assign-

ment, students were asked to articulate their ideas about how they might present their understanding(s) of differentiation. For students who found themselves "stuck" or only scratching the surface of a powerful idea or thought, professors and peers became sounding boards. Although the professor-researchers served as facilitators for some students, they were careful not to lead the students. Rather, the goals of these conversations were for the professor-researchers to ask questions in an effort to help students think about the aesthetic representation in a deeper way and to provide support for students' ideas.

Three-quarters of the way through the semester, students were asked to provide a tentative title, identify their artistic medium, and write a three- to four-sentence description of their initial (metaphorical or symbolic) connections. This information served as a guide for the students as they continued the process of developing their aesthetic representation and as a tool for professors to gain insight into students' thinking at that time. All presentations of aesthetic representations took place in the last three to four weeks of the semester. For the few students (three of 122 students total) who did not identify clear connections, private, follow-up conferences were held in which students were told that they had another opportunity to add depth to their representation.

Data Sources and Analysis

A survey approach was used to gather a majority of data. The primary data sources included results from a self-reported multiple intelligence questionnaire, students' written reflections at the end of the semester, and the aesthetic representations themselves (along with photographs and researcher observation/reflection logs). The multiple intelligence questionnaire utilized was adapted by McKenzie (1999) and based on Gardner's (1999) nine areas of multiple intelligence. Students independently completed the questionnaire at the beginning of the semester in the context of increasing their awareness and understanding of the theory of multiple intelligences and to self-identify their area(s) of strength. The questionnaire data were self-reported, and this was not a formal assessment; however, it indicated to which areas of multiple intelligence students gravitated.

At the conclusion of the semester, after students had presented their aesthetic representations, they were asked to respond to the question, "Did your aesthetic representation align to your own personal areas of multiple intelligence strengths? Explain." It is from these data that the quotes presented were drawn.

The first and third authors independently read through the students' responses to this question and reviewed students' multiple intelligence

questionnaire outcomes. Although we initially sought to create a forced dichotomy of whether the students' aesthetic representations aligned with their strongest areas of multiple intelligence (coded as "alignment") or not (coded as "non-alignment"), a third category (coded as "non-response") became necessary for certain cases in which the end-of-semester alignment question was not answered or addressed a different topic altogether.

In some cases, students reported that their aesthetic representation did not align with their strongest area(s) of multiple intelligence. However, based on our analysis of the chosen medium and elements represented within their aesthetic representation, we felt that there actually was alignment. Despite this discrepancy, based on the context of a self-report survey, we honored all students' responses and coded them as "non-alignment." All students who noted agreement provided reasoning, and researchers did not disagree with any of these responses. To ensure inter-rater reliability, the first and third authors completed this coding process independently. Upon completion of this procedure, the professor-researchers compared results and determined that the data were coded with 100% agreement.

A frequency count was used to record how many students fell into each of the three categories. When conducting the qualitative analysis for both research questions, we used an open-coding method (Emerson, Fretz, & Shaw, 1995). All three researchers debriefed the open-ended responses and developed preliminary themes. Through continuous discussion, the preliminary overarching themes were combined with new, emerging themes, or collapsed with other themes. The process of collapsing and combining themes continued until all three researchers agreed upon the final themes. Through this process, three overarching final themes emerged—the importance of: (1) meaningful choice, (2) critical thinking, and (3) personal affirmation.

Results

Students' Perceptions of the Alignment between their Aesthetic Representations and Strongest Area(s) of Multiple Intelligence

The frequency of the three categories (i.e., alignment, non-alignment, and non-response) indicated that a majority (85%) of students reported that their aesthetic representations (process and/or product) aligned to their strongest area(s) of multiple intelligences, while only 11% did not. The remaining 4% either did not respond to the question or issued a response that did not address the question (e.g., "My aesthetic representation was hard for me") and were coded as a non-response. The results clearly indicate that, when given the opportunity, students

tend to gravitate toward artistic processes and products that align with their strongest area(s) of multiple intelligences.

Students in the alignment group easily identified the link between their aesthetic representation and their multiple intelligence strength(s). For example, one student, who built a tree sculpture that housed three owlets at different stages of development, explained how the mother owl needs to meet the range of needs of her owlets and commented, "I was able to use my internal thoughts and feelings to present a project that reflected what I knew about myself. I also was able to incorporate nature from my naturalist MI area" (Student 30, Spring 2008). Another student, who completed a pencil sketch, "Will You Notice Me?" reported:

> The aesthetic representation did align with my strongest areas of MI [Kinesthetic and Intrapersonal] in that I looked deep within myself to reflect how I personally connected with the course and how I would carry that connection over to influence me and the type of future teacher I will become. (Student 57, Fall 2008)

As noted, the majority of students were clear that the creation of the aesthetic representation provided them with the opportunity to include their strongest areas of multiple intelligence(s) in their understandings of course content.

Five of the 122 participants struggled to determine whether there was alignment and appeared to interpret the question as "all or nothing." Several of these students indicated that their aesthetic representation aligned to some of their strongest areas of multiple intelligences but not all. For example, one student reported,

> Well, perhaps not exactly. However, I am also logical/mathematical, so a structure helped me to align my thoughts to a logical discussion. And, of course, I don't mind public speaking, so that was good. (Student 62, Fall 2008)

In instances for which students struggled to determine whether there was alignment, and they mentioned specific areas of multiple intelligence strengths, researchers were able to cross-check their responses and code their responses as either alignment or non-alignment.

Although 11% reported that their aesthetic representations did not align with their strongest areas of multiple intelligences, we found that some of these students' non-alignment was a conscious and deliberate shift away from their areas of strengths. One student stated that her representation did not align:

> Not at all. I'm not a visual or kinesthetic person, nor am I very creative, but I thought, to truly describe my understanding of differentiation, I should try something outside of my comfort zone. (Student 82, Fall 2008)

Another student responded,

> Actually, no. My representation was using bodily kinesthetic intelligence, and that is my weakness. However, I picked that [process] because I know I wanted to try something that I know scares me a little. (Student 99, Fall 2008)

These two responses illustrate not only an awareness of their strongest areas of multiple intelligences but also a deliberate decision to force themselves outside of their comfort zone.

For the 11% of responses that identified non-alignment, we reviewed individual students' reported strongest areas of multiple intelligences. In a couple of cases, students' self-reported non-alignment responses were, in our opinion, not accurate. For example, one student who created a visual piece with whole, cracked, and broken pieces of mirrors reported that there was no alignment, stating,

> No. The aesthetic representation was a very intrapersonal experience. It allowed me to express my innermost thoughts. (Student 16, Fall 2008)

Interestingly, when researchers referenced this student's strongest areas of multiple intelligences (based on the self-report questionnaire earlier in the semester), she reported her strongest area to be intrapersonal. As this example demonstrates, there were occasional discrepancies between what the students reported and how researchers would have categorized alignment. However, considering that two of the primary data sources were self-reported (i.e., multiple intelligence questionnaire and the open-ended question on alignment), we honored the students' perceptions and conclusions, for the purposes of our analysis, and did not change any categorical placements. Clearly, the alignment to multiple intelligence strengths was evident.

Some students also realized that their aesthetic representation allowed them to show their personal learning preferences through their connections with course content. As a student who wrote a poem stated,

> My aesthetic representation also aligned with my Multiple Intelligences since I chose to do a poem! I knew that my command of language would ultimately save me!!! (Student 98, Fall 2008)

Another student, who created a mixed-media college of events/images that relate to different learning styles, stated, "I tried to show in my representation how each learning style related to my life" (Student 13, Spring 2008). While this student focused on the connection to learning styles, another noted the link to multiple intelligence strengths. "My aesthetic representation used both [Multiple Intelligence areas–Visual and Musical], with pictures and my music, both of which are of the utmost

importance to me" (Student 37, Summer 2008). Another student, who developed three versions of string art to illustrate the role of the teacher in different classroom contexts, touched on her logical/mathematical and visual/spatial connections (see Figure 1):

> My art work was very logically done–21 nails–21 strings wrapped around 10 nails each. . . . It was important that all 3 art pieces could tell you what I was thinking with little explanation. (Student 49, Summer 2008)

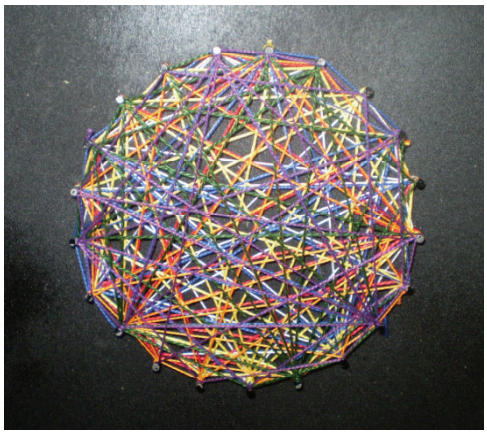
Students noted that their multiple intelligences and learning styles played a large part in the creation of their aesthetic representation. Through the use of aesthetic representations, learning preferences are honored on multiple levels. Further, students recognized and appreciated that their learning strengths were being supported and honored.

How Aesthetic Representations Allow for Differentiation in the University Classroom

The aesthetic representations allowed students to gravitate toward areas of strength, which is the cornerstone of a differentiated classroom. As a result of the open-ended nature of the assignment, we saw a wide range of processes and products utilized by students to represent various understandings. While some students chose to use somewhat traditional processes (e.g., writing) as they developed their aesthetic representation, they nevertheless produced innovative products, ranging from a comic book (see Figure 2) to a painting on canvas (seeFigure 3).

Figure 1

A student's mathematics-inspired string art to demonstrate an understanding of differentiation.



Other aesthetic representations challenged traditional constructs (verbal and/or mathematical bases) and pushed the boundaries to include unique products, e.g., three-dimensional mixed media that combined text and visual patterns into a logically based puzzle configuration (see Figure 4); sand art that used colors and geometric

Figure 2
A student's use of writing and drawing in a comic book format to demonstrate understanding of different types of instruction.

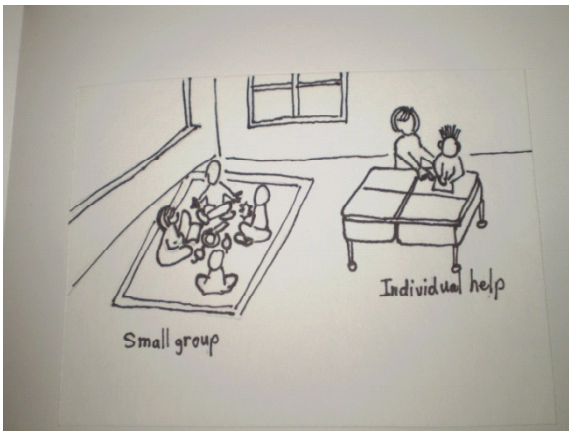


Figure 3.
A student's use of writing combined with paint on canvas.

patterns to represent stories (see Figure 5); wind chimes made from family silverware, which symbolized language, community, and oral cultural traditions (see Figure 6); and mixed media that combined text, visual images, and patterns into a complete puzzle that linked areas of multiple intelligences (see Figure 7).

Additionally, the assignment supported a differentiated classroom by motivating students through the provision of choice while appealing to their unique interests, readiness levels, and learning styles. Students in this study reported that the aesthetic representation assignment embodied many of these personal aspects. From the analysis of students' responses to this project, three major themes emerged that further support the link

Figure 4.

A student's aesthetic representation that combines 3-dimensional mixed media with text.

Figure 5.

A student's various sand art designs used for her aesthetic representation.

between aesthetic representations and differentiation: the importance of *meaningful choice*, *critical thinking*, and *personal affirmation*.

Meaningful choice. Choice is an essential element in a differentiated classroom, as it allows students the power to gravitate toward areas of strength and interest. Often, the opportunity to pursue options that are of personal interest to students can serve as a motivator. The students in this study acknowledged the provision of choice in the development of their aesthetic representation.

> Yes, I really enjoyed doing this. I actually for first time was allowed to use a strength that I chose to do a project. That doesn't happen much in college. (Student 89, Fall 2009)

The opportunity for choice in their learning resulted in feelings of success and achievement.

Affirmation of personal success and achievement emerged throughout

Figure 6.
A student's use of specific elements related to family interactions to create components of a wind chime.

student responses. One student, who expressed understanding through a comic book (see Figure 8), reported,

> I have always doodled and drawn things. I also have always loved cartoons. Thank you for the chance to succeed at something. I really appreciate it. This class was a confidence booster as well as informative to me. (Student 64, Fall 2008)

Another student, who created a video that focused on music and technology, reported,

> It was nice to be able to relate this class to band and share with everyone in a technology-related way . . . I was really proud of it and I felt confident in what I did. (Student 102, Fall 2008)

Another student noted positive feelings about her representation when she stated,

> It did feel nice when people were giving positive feedback. I guess it worked out really well. (Student 117, Fall 2008)

The appreciation of personal success was an unexpected and powerful

Figure 7.
A student's use of mixed-media collage for her aesthetic representation.

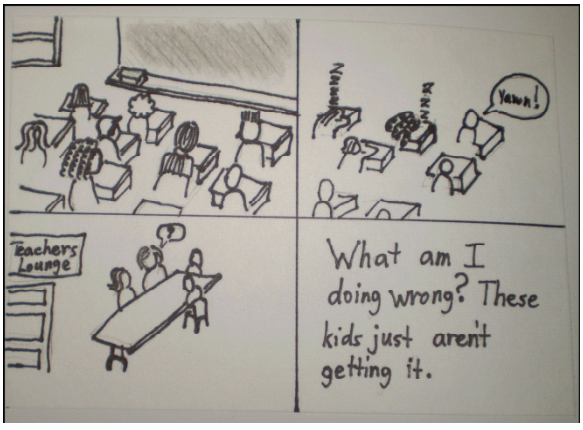
benefit that the addition of the aesthetic representation assignment provided our students.

While choice often is viewed as positive, we found that some students struggled with the expectation of choice. For instance, one student stated, "I really had a hard time trying to figure out what to do because I've never been given so much freedom in my assignments" (Student 120, Fall 2009). The implication is that, when students habitually are not given the opportunity for choice throughout their educational careers, they are at a loss when this becomes an expectation. Many of our students were hesitant, even fearful, to embrace choice and did not know how to approach the task of making meaningful choices. The students in our study indicated that the invitation for choice in a meaningful context empowered them.

Critical thinking. It is crucial for educators to create learning experiences that have students engaged in critical thinking. Another important theme was the feeling among students that completing the aesthetic representation challenged them to think critically. Frequently, the arts are not seen as challenging as are some other disciplines; however, participants in this study held different views. One student, whose piece was titled "See Through," reported,

> My aesthetic representation was actually hard for me. It was extremely hard for me to come up with an idea for the project. (Student 23, Spring 2008)

Figure 8.
A student's use of writing within the context of a comic book to demonstrate her understanding of differentiation.



Another, with a piece titled "Unthinkable," reported, "It was so hard for me" (Student 24, Spring 2008). Yet another student stated,

> Even though it was hard work and took me about 20 hours total to make (not counting taking the pictures and writing the script), I was really proud of it and I felt confident in what I did. (Student 102, Fall 2008)

These comments support the notion that students viewed this assignment as challenging and difficult. This finding supports Eisner's (1997) notion that integrating the arts into an academic context adds academic and cognitive rigor to our educational settings. Further, by expressing their personal understanding of content through the creation of their aesthetic representation, they are able to engage the highest levels of complex thinking, according to the revised Bloom's Taxonomy (i.e., "create" is the highest form of learning; Anderson & Krathwohl, 2001).

Personal affirmation. One of the most salient themes that emerged was that of personal affirmation. We had expected that this assignment would give students an opportunity to connect to course content in ways that showcased their personal interests and strengths. We were surprised, however, not only by how readily some students recognized this but also by their comments that this assignment was particularly affirming to them on a personal level.

Students reported that the aesthetic representations allowed them a unique opportunity for self-expression. In this regard, students articulated how their feelings and thoughts were brought forth through their aesthetic representations. As one student commented about her piano arrangements,

> I am mostly auditory. Playing the piano allows me to listen and make sense of what I am playing. I don't think I am very good with words, but I can show my feelings through music. (Student 7, Spring 2008)

After performing an original song with guitar accompaniment that honored a special teacher who recognized and nurtured her musical talents, another student reported:

> My aesthetic representation completely aligns with both my strongest areas of MI: linguistic and musical. Songwriting comes [more] easily and naturally for me than any other artistic forms of expression. I enjoyed the project, though not necessarily presenting it, but it gave me a way to express what I've learned. (Student 95, Fall 2008)

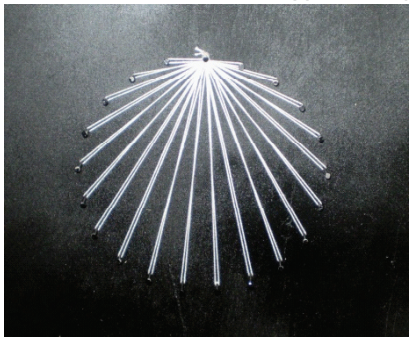
Another student explained, "I was able to connect my feeling to the subject area and show my thoughts through a visual medium" (Student 13, Spring 2008). The student who used string art to illustrate how the role of the teacher shaped her own traditional classroom experience, her son's

traumatic classroom experience, and the projection of her differentiated classroom experience (see Figure 9), stated, "My aesthetic representation revealed my inner thoughts and feelings about how school affected my life" (Student 49, Summer 2008).

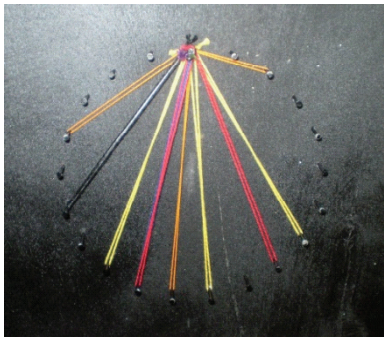
For some students, feelings and emotions were brought to the surface as they engaged in the completion and sharing of their aesthetic representations, which created empowerment and ownership of their

Figure 9.

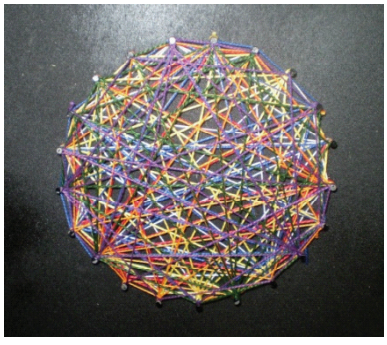
A student's use of art to illustrate three types of experiences.



Student's own experience



Student's son's experience



Student's future classroom

experiences. When engaging in traditional assignments, students may not demonstrate such positive self-expression.

Personal affirmation was a theme that emerged in several contexts. Students reported that the processes of creating and sharing the aesthetic representation served to affirm the efforts of their work and, subsequently, caused them to take pride in it. They also articulated the alignment with learning styles as well as multiple intelligence strengths. Finally, students noted that the use of aesthetic representations allowed them to share emotions and feelings in a way that they could not in a traditional assessment, which affirmed their personal connections to course content. Through the inclusion of choice, a necessary element of critical thinking, and personal affirmation of effort, learning, and feelings, this assignment allowed us to model differentiation in a realistic and meaningful way.

Implications

This study pulls from several well-established research areas (i.e., multiple intelligences, differentiated instruction, and aesthetic representation) and, using a new lens, creates a powerful intersection of these areas. Aesthetic representations provided the professors in this study with the opportunity to support differentiation, maintain high levels of critical thinking, and acknowledge the various ways that students acquire and understand new information. The results of this study clearly indicate that the use of aesthetic representations is an effective means to differentiate in the university classroom. There is alignment with Tomlinson's (2003) notion of the cogs of differentiation that work in concert: choice empowers students, critical thinking supports desired challenge, and affirmation is evident. Students demonstrated personal connections to academic content through the creation of an aesthetic representation, which drew upon their strongest areas of multiple intelligences and/or their desire to hone others. This finding supports the literature that prioritizes connections between aesthetics and academic content (Cuero & Crim, 2008; Eisner, 1997). Notably, we found a distinct alignment of students' aesthetic representations and their strongest area(s) of multiple intelligence. While the high percentage of perceived alignment with multiple intelligences appeared to be an expected finding, it nevertheless adds to the literature and, most importantly, includes the voice of the learners. This alignment strongly supports using aesthetic representations as a way to touch a variety of multiple intelligence strengths as a means to cultivate a differentiated classroom.

The personal affirmation that students repeatedly cited not only

support differentiation but also create the essence of community, which is a non-negotiable aspect of a differentiated classroom (Tomlinson, 1999). Students repeatedly voiced how creating aesthetic representations challenged them to succeed, drew upon their individual learning preferences, and provided an opportunity for self-expression. Going beyond the academic and cognitive realms of learning, the results indicated that students' affect also was nurtured from the inception of the project to the sharing of the final product with peers. By honoring a range of affective engagements, students became part of a community of learners within our university classrooms.

The findings from this study suggest that the use of aesthetic representations in a university setting can be a way to honor student choice and the many different ways in which students can demonstrate their learning. Most of the preservice teachers in this study gravitated to their own areas of multiple intelligence strengths and articulated the belief that engaging in the creation of an aesthetic representation can differentiate both the process and product of course content (components one would expect to find in a classroom that supports differentiated instruction). Thus, not only did preservice teachers deepen their understandings of course content by engaging in the process of creating aesthetic representations, but, as well, many of them experienced firsthand how differentiation can authenticate individual learning styles, increase student success, and honor modes of self-expression. The ultimate goal of a teacher preparation program is for preservice teachers to transfer their learning from the university setting into their own classrooms to foster the learner and learning. It is our hope that, by modeling authentic practices for and with our preservice teachers, including the practices of differentiation, we can have an impact on the interactions that they have with their future students. As Oreck (2006) suggested, the integration of the arts into the curriculum can assist "students to truly explore and make discoveries, find and pursue problems, arrive at unique solutions, and communicate in multiple modalities" (p. 4).

In creating an aesthetic representation, students take their learning beyond a traditional, linear recitation of information. Overwhelmingly, students in this study felt that their open-ended aesthetic representations aligned with their strongest areas of multiple intelligences. Additionally, the opportunity to engage in *meaningful choice*, to promote *critical thinking*, and to foster *personal affirmation* supports the philosophy of a differentiated classroom.

Future Research

By exploring the intersection of multiple intelligences, differentiated instruction, and aesthetic representations, we have identified additional lines for future research. In particular, we are interested in exploring the role of aesthetic representations in the development of curriculum and assessment as well as how culture and background affect how students approach their aesthetic representations. In particular, evaluating how well aesthetic representations allow students to represent specific content learning is worthy of further study. We also believe that the interactions between the content of the course and participants' experiences in teacher education coursework warrant further investigation.

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