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Journal

Journal for Learning through the Arts, 10(1)

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Publication Date

2014

DOI

10.21977/D910119142

Supplemental Material

<https://escholarship.org/uc/item/0nf7326g#supplemental>

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Found in Translation: Interdisciplinary Arts Integration in Project AIM

Debra Ingram, Lara Pruitt, and Cynthia Weiss¹

*When you translate something, you make it your own.
-Michelle, 5th grade student, Project AIM*

Abstract

This paper will share the arts-integration methodology used in Project AIM and address the question; “How is translation evident in interdisciplinary arts instruction, and how does it affect students?”

Methods

The staff and researchers from Project AIM, (an arts-integration program of the Center for Community Arts Partnerships at Columbia College Chicago), have collected data through student surveys and interviews and teacher and teaching artist interviews to research arts integration as a process of translation. The evaluation team observed planning sessions and classroom instruction, reviewed unit plans, assessment rubrics, instructional handouts and artifacts of student work. Data collection was focused on six of the thirty-two residencies that took place in Project AIM during the 2010-2011 and 2011-2012 school years. Residencies were selected to ensure variability in terms of art and academic disciplines included in the residency, grade level and school.

The process of translation--making meaning across languages of learning and mediums of expression--has informed our data collection and analysis. We have borrowed the terms *source language* and *target language* from the field of second language instruction. Just as a translator searches for words/phrases in a target language to express words/phrases in a source language, Project AIM students search for words/images/gestures/sounds in a target discipline to express what they know in a source discipline. These translations across mediums of expression serve to deepen understanding across content areas.

Key Findings

Our research has found:

- Teachers and teaching artists’ development of three specific translation approaches: *scaffolded*, *multi-representational* and *interwoven*, with each methodology serving different identified needs of instruction.
- A statistically significant increase in student learning across four variables measuring higher order thinking skills.
 - When I am going to create something, I can make a plan.
 - I can invent a new way of doing a project.
 - I can create something that represents my ideas.
 - I can understand many different points of view about the same subject.

Introduction

A World Requiring Translations

The concept of literacy development in the United States is often limited to a discussion about the spoken and written word. However, students living in the media-rich and global environment of the 21st century need to engage a complex maze of languages. Students need to be fluent in the languages of image and media and to navigate through multiple points of view in a pluralistic world. They must learn to understand how different modes of expression can impact communication and how to translate the ideas of others into a language of their own. This world of multiple literacies provides an opportunity for educators to access a much wider range of teaching strategies in their classrooms. The arts, with rich and nuanced modes of expression, are an ideal vehicle to help students translate across sign systems and make meaning and communicate within an expansive range of literacy expression.

Project AIM at the Center for Community Arts Partnerships at Columbia College Chicago

This paper will share the work developed in Project AIM. Teams of teachers and artists have spent four years exploring the metaphor of *translation* as a lens to understand the impact of interdisciplinary teaching on student learning. Project AIM is funded, in part, by a grant from the US Department of Education's Arts in Education Model Development and Dissemination (AEMDD) Program.

Project AIM is an interdisciplinary arts integration program of the Center for Community Arts Partnerships at Columbia College Chicago. Teachers and teaching artists in the program collaborate in an interdisciplinary instructional model that invites students to learn in, and through, the arts. Project AIM residencies support students as they translate across the languages of art forms and academic content, moving back and forth across various modes of representation. Project AIM residencies take place in fourth through eighth grade classrooms in five urban elementary and middle schools in the Midwest. These residencies are composed of approximately 15-20 hours of interdisciplinary instruction co-taught by a professional teaching artist and partner classroom teacher. These teacher and artist teams spend substantive time outside the classroom planning the units of study and identifying learning goals for academic, art, and social/emotional learning. The teams co-plan, co-teach, and assess student learning in an interdisciplinary instructional unit.

Relevant Research

The languages needed to make meaning are radically changing in three realms of our existence: our working lives, our public lives (citizenship), and our private lives (lifeworld) (New London Group, 1996, p. 65).

In 1996, the New London Group described a new literacy pedagogy they called "Multiliteracies." A key feature of this pedagogy is that literacy instruction needs to be multimodal in order to address the multiple ways that students will need to make meaning in the contemporary world. Rather than focus solely on text as words, they advocated for inclusion of visual, audio, spatial, and gestural modes of meaning in

literacy pedagogy (New London Group, 1996).

One of the challenges of multimodal instruction is that the modes, say, for example, written language and the visual image, “are governed by distinct logics: written text is governed by the logic of time or temporal sequence, whereas visual image is governed by the logic of spatiality, organized arrangements and simultaneity” (Kress, 2003 in Serafini, 2012, p. 153). In order to work within and across modes of meaning, students need opportunities to learn deeply within each modality as well as opportunities to develop connections across modes.

New research from cognitive neuroscience also underscores the need for instruction that includes the visual as well as verbal language-based texts. In a summary of this research and the implications for education, Groff (2013) describes three interacting processing systems found in the mind-brain. One of them is a verbal language-based processing system, and the other two nonverbal: the visual-object pathway and the visual-spatial pathway. Groff explains the purpose of these nonverbal pathways as follows:

The *visual-object* pathway processes information about the visual pictorial appearances of detailed images of individual objects and scenes in terms of their shape, color, texture, and so on. The *visual-spatial* pathway has to do with spatial relations and transformations and how individuals deal with materials presented in space—cognitive tasks associated with physics, mechanical, and engineering problems (Groff, 2013, p. 20).

The research has also revealed that “There is a significant portion of the population whose dominant cognitive processing system is *not* language based and therefore is in need of alternate instructional and assessment opportunities—such as those that arts learning experiences provide—in order to reach their full cognitive potential” (Groff, 2013, p. 21). Further, she explains that, because “our interaction with digital and visual media has exponentially increased within the last generation, we must consider the very real and probable likelihood that we are developing a generation of visually dominant cognitive processors but immersing them and assessing them in a verbally dominant environment” (p. 23). The research has direct implications for the visual arts, but Groff notes, “There is enough early evidence to suggest that all three processing systems show up and cross over in various disciplines” (p. 26) including other areas in the arts such as dance, theater, and music.

Multimodal instruction has also been shown as effective for students who often struggle with literacy. “When curricular changes include multimodality, those youth who experience substantial success are the very ones who’ve been labeled ‘struggling reader’ or ‘learning disabled’ or whose semiotic toolkits consist of resources and sociocultural practices other than those defined as standard in school literacy” (Siegel, 2006, p.73).

Interdisciplinary instruction that includes disciplines based in different modes of meaning is one way to broaden the curriculum beyond language-based modes of meaning. An important characteristic of interdisciplinary instruction is the “integration or synthesis of knowledge,” which Spelt et al. (2009) contrast with multidisciplinary, “which is additive” (p. 366). The goal of interdisciplinary instruction is “interdisciplinary understanding,” defined by Mansilla (2004) as

the capacity to integrate knowledge and modes of thinking in two or more disciplines to produce a cognitive advancement –e.g., explaining a phenomenon, solving a problem, creating a product, raising a new questions – in ways that would have been unlikely through single disciplinary means (Mansilla, 2004, p. 4).

The purpose of this study was to understand how interdisciplinary instruction occurs in Project AIM by using the metaphor of translation to examine the teaching and learning process. The act of translating into a new sign system utilizes both understanding and interpretation. Suhor (1984) introduced the term “transmediation” to describe the process of translating content from one sign system to another, such as linguistic, gestural, pictorial, or musical sign systems. Translations are often misunderstood to be literal, but the quality of a translation is also metaphoric in its ability to interpret and communicate the original author’s intent. Siegel (1995) remarked on the value of this process for student learning, stating that it “increases students’ opportunities to engage in generative and reflective thinking because learners must invent a connection between the two sign systems, as the connection does not exist a priori” (p. 455).

To describe our work, we have borrowed the terms *source language* and *target language* from the field of second language instruction. Translators often find themselves in situations where there is not a one-to-one relationship between a word or phrase in the source language and a word or phrase in the target language. The translator must search to communicate the author’s intent. The act of translating into a new representation often provides a deeper understanding of the original idea for the translator, author and audience. In Project AIM, students move between the *source languages* of academic content areas and the *target languages* of the arts. The sign systems found in the disciplines of: photography, poetry, visual art, drama, dance, film and music provide students with a new language, (what we are calling the target language) to convey ideas found in their reading, writing, math and social studies. The varied sign systems of the arts serve as new languages of learning. Just as a translator searches for words or phrases in a target language to express words or phrases in a source language, Project AIM students search for words/images/gestures/sounds in a target discipline to express what they know in a source discipline.

Methods

This study was part of a larger four-year study that examined the implementation and outcomes of Project AIM in five schools located in urban schools in the Midwest. The study described in this paper focused on six of the thirty-two residencies that took place in Project AIM during the 2010-2011 and 2011-2012 school years.

Participants

The study participants were six classroom teachers, six teaching artists, and fifth through eighth grade students in six classrooms during the 2010-2011 and 2011-2012 school years. The classroom teachers and teaching artists were selected for the study because of their close collaboration with each other and their deep engagement and commitment to the work of the project. They were responsible for the co-development

and implementation of residencies in Project AIM. The students were involved in the study, because their classroom teachers developed and implemented a residency selected for the study. The six residencies were selected to represent a variety of the many art forms, academic disciplines, and schools involved in Project AIM.

Classroom teachers selected students to participate in the interviews based on criteria established by the researchers: two students of high ability in the academic discipline, two students of low ability in the academic discipline, and one other student whom the teacher thought had benefitted from the residency in some way. As part of the larger study, all Project AIM students were asked to complete a pre- and post-residency survey.

Materials

All of the data collection instruments were designed specifically by the researchers for this study. The purpose of the student pre- and post-residency surveys was to measure change during a Project AIM residency in students' higher order thinking skills and students' engagement in learning. The survey included fifteen scaled-response items and three open-ended response items. The student interview protocol was designed to help the researchers understand students' perspectives on the residency experience. The protocol included six open-ended questions. The purpose of the classroom teacher and teaching artist interviews was to gather information about the learning goals for each residency and the instructional activities in which the students participated.

Procedure

The study was an exploratory qualitative study. Classroom teachers and teaching artists developed and implemented the residencies as they would in any other Project AIM residency. The research team designed the study and developed the data collection tools and procedures. Then, the first two team members collected data along with the teaching artists, who conducted interviews with a sample of the students who had participated in their residency. Finally, the three research team members participated in data analysis, interpretation, and writing. Research participants had the opportunity to clarify and add to the descriptions of each residency throughout the analysis and writing process. The research team also included direct quotes from teachers and students (culled from interviews and surveys), to further support the research evidence in the voice of the participants.

Student surveys. At the start of each residency, the students completed the online pre-residency survey. Then, at the end of the residency, the students completed the online post-residency survey. As noted earlier, the surveys were part of the larger evaluation of Project AIM conducted by the first research team member. In this way, the survey was completed by all students in the program, not only those who participated in the six residencies and are the focus of this paper.

Observations. During each residency, a member of the research team observed planning sessions between the classroom teacher and the teaching artist. The meetings usually occurred in the teacher's classroom and took place before or after school. During the meeting, the researcher took qualitative notes to record any discussion and decisions about the student learning goals for the residency and the learning activities

that would address those goals. In addition, two team members visited classrooms when the teaching artist was present to observe the interdisciplinary arts instruction on at least five occasions for each residency. For each observed lesson, the researchers took running qualitative notes to describe what the students, teaching artists, and classroom teachers were doing. The researchers also collected unit plans, assessment rubrics, and instructional handouts, developed by each team of classroom teacher/teaching artist, and samples of student work and journal entries.

Interviews with teaching artists and classroom teachers. At the start of each residency the first research team member conducted individual interviews, either face-to-face in the classroom or by telephone, with each teaching artist and teacher. The interviews were audio-recorded and later transcribed.

Interviews with students. For each of the six residencies, the teaching artist who had collaborated with the classroom teacher to develop and implement the residency and the first research team member interviewed a sample of five students. The interviews took place during the school day, and the students were excused from class to participate in the 15-20 minute interview. For 2 of the 3 residencies,ⁱⁱ the researchers asked students to bring examples of the work they had produced during the residency both as a way to improve the students' recollection of the experience and as a tool for them to explain to the researchers what they did. The researcher took notes during the interviews.

The study was reviewed and approved by the Institutional Review Board of the University of Minnesota and conducted in accordance with its policies for protecting human subjects in research. All study participants and the parents of the student participants provided written informed consent prior to the start of data collection.

Analysis

In understanding translation as a model for arts integrated learning, the researchers first looked at teacher, artist, and student descriptions of how they had used translation in their work. Themes emerged from the data as the researchers discovered participants explaining how translation worked in the classrooms. These included conversations about what was being translated, how translation was occurring, or why translation was being used. Some examples of these themes included; translation of a professional work into a student work, translating knowledge from art to academics, translation of ideas into art, translation of an initial understanding into a deeper understanding, and translation of lived experience into art. These themes were then compared with how specific residencies were described by participants as translations. Patterns emerged across all six of the residencies that pointed toward three different ways in which translation was used to address the student learning needs:

- Transmediation across similar symbol systems to create connections between the two systems
- Multiple representations to increase the depth of learning
- Scaffolding translations to develop understanding of new concepts

The data corresponding with each pattern was then used to create a description

of the translation approach that could be reviewed by and discussed with teaching artists and classroom teachers. This feedback loop allowed researchers to test the relevance of the three approaches with teachers and teaching artists in the field.

Once the descriptions were validated through member checking, they were compared to notes from the individual case studies to see if examples of each approach could be identified. The three residencies shared in this paper were chosen because they provided the most elegant examples of each approach. Choosing these three residencies as models allowed researchers to describe the approach in detail through data collected from a single residency.

One set of data showed the arts being used as a support structure for building academic knowledge as the residency proceeded; this process was eventually named *scaffolded translation*. Another set of data showed little distinction between the directionality of the translation; the process moved back and forth among the arts employed as a method to enrich academic learning, and academic content serving as a means to enhance arts learning. In this case, the directionality of the translation was harder to distinguish, and the process was called *interwoven translation*. Finally, in another grouping of data, multiple translations were repeatedly made from an original content area, resulting in the *multi-representational translation* type. One teacher described his understanding of the three types of translation:

In multi-representational translation, students are more available to create in the target language, while in scaffolded translation students are given more support for development in the source language. In the interwoven translation, the distinctions between source and target language are blurred. These examples show different ways that arts integration can be used and could be helpful for teachers to understand.

Results

Three Translation Approaches

The three translation approaches, *scaffolded*, *multi-representational* and *interwoven*, identified through these case studies of Project AIM residencies, demonstrate different purposes for the use of translation in students' construction of knowledge. These approaches do not offer a hierarchy of learning, but, rather, a difference in methodology based on the identified needs of instruction. In *scaffolded* translation, students need greater support in learning the academic area. They create artistic products as they build knowledge about a new topic area. Often the arts serve as a motivating factor in this translation, connecting students personally to the content being studied. In *multi-representational translation*, students create multiple versions of a translation from an original source concept. Each new translation created can serve to deepen or expand understanding of the content, but a foundational understanding of the original source ideas serves to provide the material for the artistic translations. In the third translation type, *interwoven translation*, the content area and arts learning appear to be simultaneous with directionality becoming difficult to discern. Teachers often present artistic and academic ideas at the same time, and students are encouraged to develop artistic products that layer multiple forms rather than the one-to-one relationship described in the other translations. Each approach is described below with references to

the example residency that helped to define them.

Scaffolded Translation

In the scaffolded approach to translation, students start with a *limited* understanding of an academic content area. They begin the translation from the source language moving into an arts target language as a means of motivation and purpose to develop their academic content learning. As they create their translation, they realize the limits in their understanding and must go back to further develop understanding in the source language. Thus, the process of translation scaffolds their learning, requiring them to go back and forth between the two languages in order to become more proficient in each.

As teacher and artist move through a lesson or unit of instruction, the activities provided are designed to support student learning of the source language. While students can represent their ideas in more than one target language, the emphasis of the scaffolded translation focuses on the development of a translation in one target language at a time. Importantly, the use of one language is often offered in support of understanding or development of the target language.

The *Maleta* Project: Scaffolded translation in a theater and social studies residency. The *Maleta* Project (Spanish for “suitcase”) was a collaboration between an eighth-grade social studies teacher and theater teaching artist (TA) at one of the five schools. The classroom teacher and TA set an overarching goal for the unit: Students will be able to translate the concepts of identity and assimilation across theater and history as evidenced by their creation and performance of scenes about the American Progressive Era. The teacher explained that she wanted her students to be able to “interpret what they’ve been learning in social studies, to make sense of a historical event or theme, and really connect to it.” The TA wanted the students to be able to: “work as a team; use expressive gestures and body language; speak clearly; and take risks.”

Students were given the assignment to represent an issue from the American Progressive Era (history as the source language) into short dramatic scenes (theater as their target language). Students were given suitcases filled with copies of historical photographs, news articles, source documents, costumes, props, and music related to the Progressive Era. They worked in small groups to develop characters and scenes about child labor, immigrant working conditions in the meat packing plants, the Hull House settlement movement, and women’s right to vote.

Students were asked to imagine the people in the photos as characters from history. They had to define the details of their characters, write a monolog, develop a scene, and share their work with each other. The TA noted, “Students started seeing how their writing could become performance.” They learned to utilize the dramatic elements of body, voice, gesture and dialog. Over the next several sessions, the students wrote their scenes, revised them, read them aloud, and revised them again. They rehearsed their scenes using props from the *maleta*. The TA described the rehearsals as an opportunity for students to “try their characters out.” She noted that sometimes students would revise the scene based on what they experienced in rehearsal.

One student explained how he had to access his understanding of history to

refine his work: “In our first draft about Hull House, our character Tony comes out of the factory and checks the time on his phone. We’re like, ‘He can’t do that!’ So we changed it and in the next draft, he takes out his watch to check the time when he hears the factory whistle blow.”

Impact on student learning. In the final session of the residency, students performed their scenes for students in other classrooms who had worked with the TA on a similar residency. Students reflected on their learning in open-ended questions through student surveys at end of the Project AIM residency.

In response to the survey question: *What new ideas did you get working in this Project AIM residency*, students wrote:

- I got ideas when I was acting or writing. It helped me think and understand people from different points of view. It helped me interact and create another world.
- When we did the Maleta project it gave me a lot of thoughts that later turned into ideas about the Progressive Era; [I learned] how the people dressed, where they came from since most of the people were immigrants, background knowledge about the immigrants home countries, and why many people came here to America. All these thought's floated around my brain and it gave me good ideas that I contributed to my play about the horrible working conditions in the 1920's.
- I learned different strategies in acting and found that to make a production you have to make your character your own while you try and make it believable.

In this scaffolded translation process, students were able to use the language of theater to internalize and embody knowledge from their study of history. They learned to understand perspective and point of view, to make connections with issues relevant to their own lives, and to understand complexity. The value to teaching and learning was a construction of knowledge that offered a much deeper grasp of issues and ideas. The teacher reflected at the conclusion of the project: “The use of storytelling and creating the characters helped the kids build a connection to the material that they otherwise might not have had.”

Multi-Representational Translation

This second kind of translation method involves the creation of *multiple* products in the target language of the arts. Student understanding of the source language needs to be somewhat secure before the translation process begins. Students use their understanding of the source language to produce many artifacts and multiple translations.

Solve for X: Multi-representational translation in an algebra and visual arts residency. This residency was a collaboration between an upper grade math teacher and a book and paper teaching artist at another of the project schools. The residency integrated visual arts and mathematics; specifically the students created Artist Trading Cards (ATCs) to illustrate the identity and distributive properties in algebra. The teaching artist and teacher chose the African American artists, Jacob Lawrence and Jean Lacy to study in the residency in order to connect to the school’s curricular theme

of “African American Artists Lost and Found.” Lawrence was the better known African American artist, and Lacy was fairly obscure. Her wonderful collage work turned out to be a perfect representation to teach about the artistic principles of composition, form, and content in the residency.

The teacher wanted his students to be able to visually use the idea of distribution across a visual arts project that could represent the symbolic idea of distribution in number operations. The overarching goal for the residency was: Students will be able to translate the concept/principle of Identity across Art, (in collage and Artist Trading Cards) and Mathematics/Algebra as evidenced by a deck of identity cards.

On the first day of the residency, the TA showed students some examples of ATCs by professional artists and students. She talked about the qualities of composition in the work, such as background, foreground, focal point, and what the artists were doing visually to tell their story. She also explained the rules of ATCs, including the size of the cards, and that each student would have to trade her/his most beautiful card with another student. Then she asked students to make draft cards that were all about themselves. Students started out with a blank card and composed a collage using a variety of recycled papers and images cut from magazines. The next day, the TA began the class by showing students the cards they had made the day before. She asked students to read the cards, to identify what the artist was trying to say through the images on the card. Then, the teacher talked about the additive identity property ($x + 0 = x$) and the multiplicative identity property ($x (1) = x$) in algebra. Students then made a second ATC that expressed their identity, their x card. The TA explained that the card should express the student’s essence without obvious symbols and should keep in mind the design elements they had talked about earlier. At the end of class, students did a gallery walk to view each other’s work.

Students made a third trading card that reflected their passion, their P card. The TA then asked them to find one defining characteristic about themselves and make the card a tribute to that passion. The TA showed the students some of Jacob Lawrence’s artwork. As they viewed his work, they looked for foreground, background, and focal point in his pieces and talked about what stood out to them about Jacob Lawrence’s style.

Students also looked at their work from the previous sessions, and the teacher reviewed the additive identity and distributive properties with them. The next day, the TA and the teacher asked students to make a new ATC: a version of their x card in the style of Jacob Lawrence. When they gave the students instructions for making the card, they used symbolic algebra to convey what they wanted they wanted on the card: $JL(x+P) = JLx + JLP$. (Or, Jacob Lawrence’s style distributed across each student’s x card and P card.) Students then made another version of their x card and their P cards, this time *translating and distributing* Jacob Lawrence’s style of primary colors, diagonal lines, and simplified human forms onto their new cards. In this way, each student’s set of cards could be used to illustrate the distributive property, both in a mathematical equation, and in the visual look of their cards.

The students began to assess each other’s sets of ATCs based on a scoring rubric. They were introduced to the practice of positive critical response throughout the residency, and they deepened their own understanding in the process of responding to each other’s work. In the final session, students traded their favorite cards with one

another, modeling the respect for artistic and academic work that permeated the residency.

Impact on student learning. Throughout the residency, the TA gave the students lessons in composition and art history. The teacher gave the students instruction in algebraic symbols, as they needed to translate the source language of math into the artistic, target language in multiple visual representations. These teaching partners had conceptualized the Artist Trading Cards project as an artist book with each card as a page. These artist books became the evidence of student learning. Students were able to “read” their cards and tell their autobiographical story/narrative. They demonstrated their understanding of the concept of identity across both visual art and algebra.

The math teacher wrote that he was pleased that his students who had been low performing on written work were able to demonstrate conceptual understanding of math with a visual medium.

One student said that working with art made the math easier to understand, “Now [when we are working on a math problem] I read the distributive property poster to remember and I think back to when I made the cards. And because of that, I didn’t fail the math test.”

Another student made connections between the process of art making and math. She explained: “Anytime you do math, you have to do specific steps, [my math teacher] always teaches me that, and it was the same with our art work.”

The TA reflected: “I have watched and heard kids discuss abstract art with such openness, and try new things in fearless ways. And the students concurred.” The students wrote: “I got to describe myself in the cards. It helped me to express myself in many ways. I learned from my mistakes and felt comfortable messing up. It will make me a better person, to take in new ideas.”

The multi-representational translation offers students the opportunity to complete repeated drafts, while the scaffolded translation is a more linear process of revising a final product. A series of translations can provide the opportunity for revision, but, often, the drafts are separate attempts, and students find that their best product is not necessarily their final attempt. Sometimes students are guided through selection of a representative work for sharing, choosing one product from the multiple translations to serve as the best example of their work. Other times the translations serve as a series or a portfolio of projects.

Students begin most class sessions by “reading” the trading cards that other students have produced. They are guided through this process by questions: What is the background? What is the foreground? What is the focal point? What can we tell about the artist? They are asked first to look closely and describe only what they see, and then they are asked to interpret and find meaning in the images.

Part of the translation teaching process involves instruction in the target language. While students are taught to create in the target language, they are also taught to read the target language by examining the work of professional artists or their fellow students. Students are being taught to translate the images of the card (target

language) back into words (source language) to understand the meaning of the card. They are becoming aware that the images are representations (translations) of the ideas of the artist. As they translate, they understand that it is not an exact meaning, but an interpretation of intention.

As in traditional language translation, some words or phrases are easier to translate than others. As emotion, metaphor or abstractions are used to convey an idea, the work of translating becomes more subtle and the need for precision more important. The act of translating between source and target language is also a matter of interpretation and requires a deep understanding of meaning and intention. While students come to the multi-representational translation process with understanding of the source language, the act of translating forces them to challenge our understanding and make new connections to content.

Interwoven Translation

This third approach to translation blurs the lines between source language and target language. Students create in two different sign systems by working from a simple concept as a way of developing abilities in two target languages simultaneously. In this translation process, students work for short periods of time translating in one target language before moving to a second target language to translate again. Multiple smaller works are created in both target languages across a given lesson as the strategy for building student learning.

Be an Artist with your Words: Interwoven translation across poetry and visual arts. For the past four years, a visual arts and poetry teaching artist and a fifth grade language arts teacher have collaborated on a Project AIM residency called, “Be an Artist with Your Words.” The residency integrates instruction in writing and visual arts to stimulate students’ interest in writing and provide them with a range of strategies to develop and refine their work in both writing and visual arts. Although the goals of the residency are similar each year, the TA and the language arts teacher continuously refine the instructional strategies they use in the residency. Their overarching goal for the residency in the 2011-12 school year was: *Students will be able to translate the concept of composition across poetry and collage.*

They wanted to create a residency that would *explore the joys and challenges of writing poetry alongside of visual art-making and exploit the richness that happens with the mix two art forms/ideas*. Their teaching priorities included: (a) giving kids lots of opportunities for small successes and failures; (b) translating the concept of “composition” across visual art and poetry; (c) fostering an appreciation for how creativity involves arranging material (words, pieces of paper) for a specific effect; (d) providing consistent opportunities to tie observational and expressive sketching to reflection and poetry writing; (e) exposing students to a variety of assessments, including gallery walks, wall critique, and use of the rubrics in revising, with the goal of encouraging high standards and independent learning.

Their inquiry question was; “What is composition, and how is composition different (and the same) in art and poetry?” In these residencies students used many strategies/techniques for writing different types of poems alongside creating images (collage and drawing). Sometimes students are asked to write a poem inspired by an

image and sometimes they are asked to create an image based on a poem. Every session students do something moving between writing and drawing. One of the unifying elements of each session was the use of blank journals that the students used throughout the residency for sketching and writing. The students continually returned to their journals to build on previous work.

The continual back and forth of creation in both forms, writing and drawing, requires students to translate their ideas using one symbolic representation then another. As the TA explained:

In two closely connected sessions, students chose an object from a table of household items and are asked to draw a sketch in their journal (left hand side), then write a word bank describing their object, followed by a lune (a short poetic form). When kids struggle with their word banks, the artist points to their object and asks the class to help generate words. They then created a collage in which they had to create an interesting composition. The following day, they drew another version of their object (left hand side) and then practiced assigning a character trait to their object (right hand side). For example I am the mysterious pinecone, I am the precise pinecone. This work prepared them for writing a longer poem, in which they took on the persona of their object.

The initial source language was a physical household object, and students begin their first translation using drawing as the target language. The household object remains the source language as they make a word bank for describing their object (developing signs for the target language of writing). Once they have created their poetic translation, this poem becomes the source for their next translation of collage.

Impact on student learning. Throughout their work in the residency the students are creating translations in two target languages and using these translations as source language for further translation. A student described how he consulted his poem when creating a collage, "I thought, hmmm, I need a little speed [in the collage]. I followed my poem for guidelines. I got my poem out and followed it with that [the collage]."

The TA explained:

[My teaching partner] and I came up with the moleskins (journal) strategy our third year and it's made all the difference. By having students continually use the left hand side for sketching and the right for writing, they become very adept at translation. We assessed the students first and last days of journal work, using an arts standard, and the average score was a 3 (out of 4), with the descriptor reading: "Journal entries demonstrate close observation and some mastery of sketching materials and process. Sketching skills like cropping, smudging, and scale are used; writing can add to the sketch by adding new ideas."

Student responses to this residency work gave consistent evidence that learning was taking place across two languages. Students wrote:

- The most relaxing part of AIM was when I was sketching and thinking about how

words corresponded with images! It lets your mind wander around and calms you down after recess and lunch. Mixing art and poetry helps me use part of my brain I don't use very much. It opens and clears your mind. You could almost forget everything in the world.

- It's important to me because I like to make art and it's helped me to visualize my ideas in a picture and transfer them to writing paper.
- When I made a mistake, I used to start all over, but now I try to improve my work.
- It helps my brain function right so I can be creative.
- Sometimes if you can't explain something you can explain it better in art. I get to show myself in my artwork and my writing. As I went through Project AIM I became a great writer and that makes me really happy.

In the interwoven design of translation, there is not one primary language for the translation products, but, rather, there are multiple products created in two or more languages. In the case of this residency, sometimes the translation occurred first in poetry, while at other times drawing is the initial translation. At times, one form became a source language for the other, and then the resulting translation became the source language for a new translation. The students were able to move back and forth between text and image, poetry and drawing with increasing ease, and learned how the language of one form could illuminate their understanding of another.

Development of Students' Higher Order Thinking Skills across All Types of Translation

Student pre- and post-residency surveys measure several aspects of students' higher order thinking, such as their ability to make a plan when they are going to create something and their ability to create something that represents their ideas. Table 1 and Figure 1 show how students rated their higher order thinking skills at baseline and after they completed their Project AIM residency:

- The largest increase in the percentage of students who marked "often" or "always" occurred with the item, "I can invent a new way of doing a project. Half of the students (50%) chose a response of "often" or "always" at baseline, and at follow-up this percentage rose to 66%, a statistically significant difference.
- There was also a large statistically significant increase on the item, "When I am going to create something, I can make a plan" (62% to 76%).
- The proportion of students who marked "often" or "always" increased by 9% from pre- to post-residency on two items: "I can create something that represents my ideas," and "I can understand many different points-of-view about the same subject." Both of these increases were statistically significant.
- The percentage of students marking "often" or "always" did not change notably from pre- to post-residency for two items about improving their feedback based work.

Table 1
Students' Higher Order Thinking (N=491)

	Pre	Post
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	Never/ Sometime s	Often/ Always	Never/ Sometime s	Often/ Always
When I am going to create something, I can make a plan.**	38%	62%	24%	76%
Based on feedback from my classmates, I can improve my work.	30%	69%	26%	73%
Based on feedback from teachers, I can improve my work.	14%	86%	18%	82%
I can invent a new way of doing a project.**	49%	50%	34%	66%
I can create something that represents my ideas.**	29%	70%	21%	79%
I can understand many different points-of-view about the same subject.**	36%	64%	27%	73%

**The difference from pre- to post-survey is statistically significant on a McNemar test ($p < .01$).

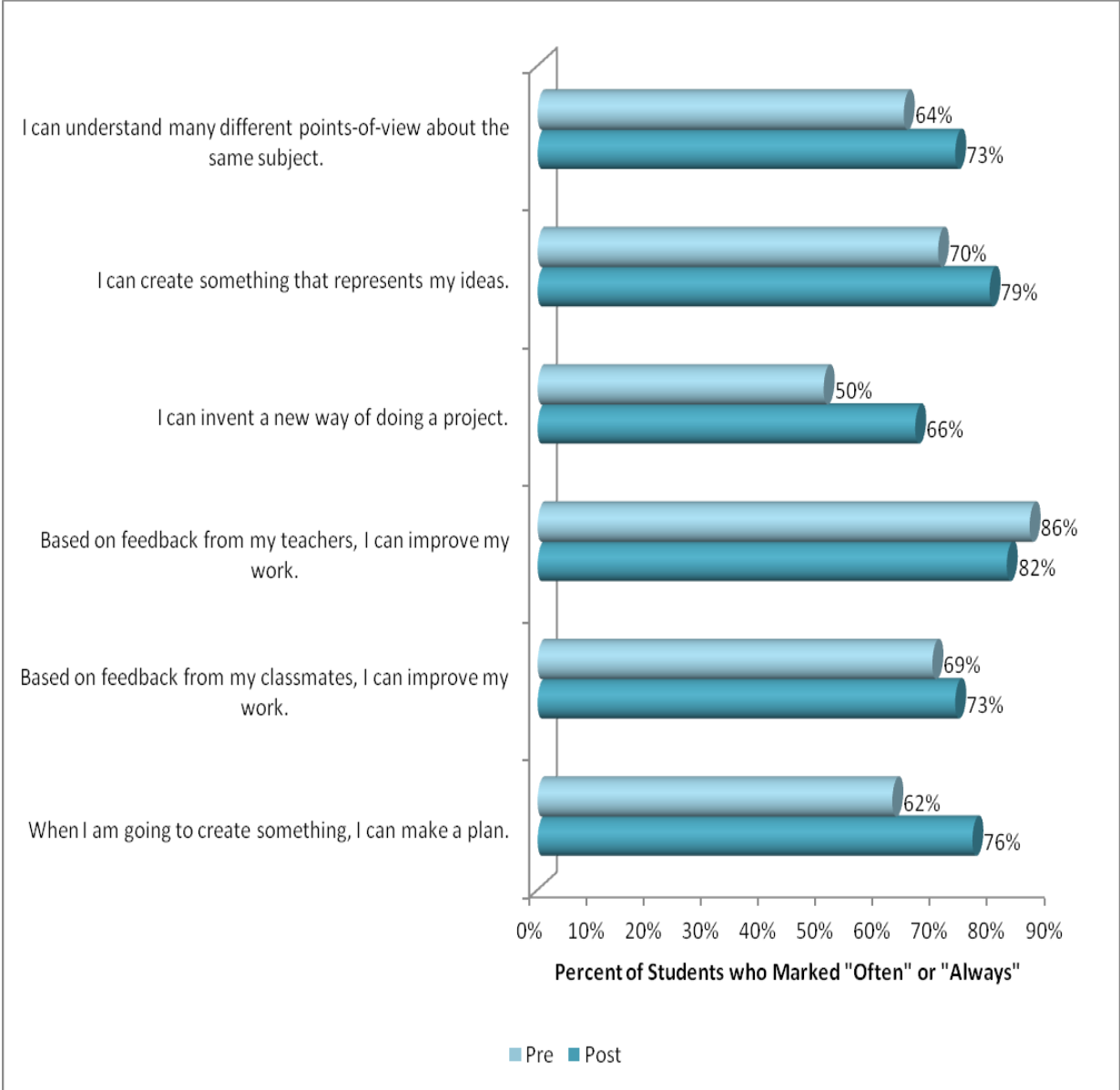


Figure 1. Students' higher order thinking skills

Discussion

Applications of Translations Approaches

The examples above help to describe the three approaches to translation revealed in this research. They are an initial attempt to understand the ways in which representing ideas in arts languages can be used in education. While they are separated here for clarity, in reality they may be combined across a single lesson or instructional unit. They could be used in combination for different types of learners or different purposes throughout a unit of study.

Successful translation requires translators to be knowledgeable not only about the target language and the source language, but also about the cultures that surround them.

Project AIM residencies spend considerable time teaching students both how to express themselves in the target discipline and how to interpret work in that discipline. The residencies also immerse students in the culture of the discipline by showing students the work of professional artists, and teaching students the language and rituals that teaching artists use in their own practice.

We hope that a closer look at the kinds of translation approaches can help teachers and artists to understand a variety of structures and curriculum design that encourages moving back and forth between disciplines to arrive at deeper learning. Understanding the role of the three types of translations can help teachers and teaching artists to develop specific lesson plans closely aligned with their instructional goals. For example, students who need deeper support in learning the academic or source language might use a *Scaffolded* translation approach in order to be encouraged to develop understanding in the source language through the process. *Multi-representational* translations might guide instructional planning when teachers want students to discover a variety of ways of solving a problem or interpreting an idea. The *Interwoven* translation could be utilized in supporting process learning where students are encouraged to see the connections among subjects and across disciplines. In professional development settings, these three translation approaches can serve as material for discussion as teachers and teaching artists discuss their goals and how instructional activities can best serve specific objectives in teaching. Most important, the act of translation is an entry point for students to be engaged in their own learning. The Project AIM math teacher reflects:

So many of our students are just trying "not to fail" instead of succeeding. The work (we do with arts integration and translations) gives them a chance to succeed and not really think about success only in terms of pass or fail. By the nature of the act of translation, once it's called a translation, it can't fail.

Alignment with Common Core Standards

The processes of translations and interdisciplinary learning are closely aligned with the new Common Core Standards that are being adopted in most states across the country. These new English Language Arts and Math Common Core standards build on Anchor Standards that are developmental in approach. All the reading standards across grade levels include language about the Integration of Knowledge and Ideas: A 7th

grade reading standard asks students to Integrate and evaluate content presented in diverse formats and media, including visually and quantitatively, as well as in words. The arts provide the process and form to activate these standards. Our research in Project AIM has shown that students who have been asked to translate across mediums of expression and different languages of learning have indeed increased their capacity to engage in generative and reflective thinking.

Limitations of Findings

The translation research conducted in Project AIM results from implementation of the Project AIM model across two school districts. While these models can provide for interesting discussion across other programs and schools, they are based on the training, personnel and implementation of a specific program. Other arts integration initiatives may discover additional approaches to translation or find that their attempts to use one of these methods result in different outcomes. The ideas here are meant to encourage discussion of the use of arts integration as a method for deepening instruction and discussing the means and effects of interdisciplinary learning through the arts.

Acknowledgements

The authors would like to express their deep appreciation to the following teachers and teaching artists who created and implemented the residencies that served as the basis for this article: Luke Albrecht and Leah Mayers; Ronna Pritikin Berk and Alice George; Shannon Dickinson, Chris Van Buskirk, and Jamie Thome; Elizabeth Griffin and Guillermo Delgado; Ellen McNamara and John Lyons; Valerie Williams and Maritza Cervantes. We would also like to express our gratitude to Project AIM poet and teaching artist, Jenn Morea, who shared her work and ideas about poetry in translation, and Shawn Lent, who supported these residencies as a Project AIM program specialist and helped us to conceptualize the three translation approaches.

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ⁱ The names of the authors appear in alphabetical order, because each contributed equally to the paper.

ⁱⁱ In one of the residencies, which focused on history and theater, small groups of students wrote and performed short scenes from a historical period. Although the performances were video-recorded, the recordings were not yet available at the time of the interviews.