Arts Education Policy Review

Transferring Individual Self-Regulation Processes from Arts to Academics

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Dionne, a ten-year-old dance student, stood in the fourth row trying to see the teacher's demonstration of a new movement combination. Blocked by taller classmates, she finally had to leave the line and move to the side of the room. The complex twenty-four-count phrase included two changes of direction, ended in a full turn, and was performed to a complex polyrhythmic drum accompaniment. In this second-year dance class, combinations were often given with little verbal instruction. As she watched the teacher for the second time, Dionne began to do the steps in place: right, left, right/left/right. She indicated the turn with a spin of her wrist and finger.

"O.K., everybody got it?" the teacher asked.

The first line readied themselves as the drummer, having continued throughout the demonstration, played the "break," emphasizing the last four beats.

"Excuse me. When we repeat the combination the second time, do we start on the right foot again?" Dionne asked.

"Does anyone know the answer?" the teacher asked.

No hands rose.

"Well, let's see."

The teacher tried the last four steps and the turn, realizing that the turn left her weight on the right leg.

"Yes, we'll have to add an extra 'catch' step to start again on the right. Good question Dionne," the teacher replied.

The lines of children started across the floor, leaving eight counts between lines. As Dionne's line reached the front she placed her right leg behind her in preparation to start. She did the phrase well for a first attempt, falling off balance on the turn but coming out of it with the extra catch step on the left foot as she prepared to start again on the right. By this point the dance teacher was watching the next group, but Dionne continued to dance right up to the gym wall. She scowled with determination and turned quickly around to get in line, anxious to try again.

In these few moments, Dionne demonstrated a wide range of effective learning behaviors. She took the initiative to move herself to a better location to learn. She intuitively "marked" the movement with kinesthetic patterning. She identified a problem that was not pointed out and took a risk in asking a question about it. She prepared herself to perform the task and persevered when she made a mistake, continuing to the end even though the teacher wasn't looking. Finally she had done her own critical self-assessment and was prepared to correct her mistake.

Dionne's fourth grade teacher would be thrilled to see any of these behaviors in the traditional academic classroom. Dionne is considered a poor student with low skills, and she struggles with academic tasks. Her teacher, having commented on her lack of initiative, concentration, and focus, would be amazed to see her in dance class. Unfortunately, many students who do not succeed in the classroom are erroneously considered less able than their classmates or are accused of having some learning problem that interferes with their ability to pay attention, remember, and solve problems. A considerable number of students, however, show remarkable learning behaviors in arenas outside of the traditional academic classroom, and especially in the arts. In rigorous artistic instruction, these students demonstrate that they know how to learn and can use personal learning strategies to envision and achieve goals. In short, they use self-regulation processes to take charge of their own learning. Can Dionne learn to use these processes in other situations, or are they only available to her in the dance class, which she clearly loves?

In this article we describe how students like Dionne can be encouraged to use self-regulation processes that they develop in the arts to help them in academic areas. First, we discuss how an

instructional setting in the performing arts promotes self-regulation among students. We then describe how classroom teachers can transfer instructional strategies used in the performing arts to foster self-regulation in academic settings. The process can help teachers become aware of students' strengths and learning strategies. It may also help them transform their classrooms into exciting laboratories where students began to direct their own learning.

What Is Self-Regulation?

Current learning theory emphasizes the importance of self-regulation for succeeding in any endeavor. Students are self-regulated when they are aware of their own learning processes and select useful strategies to complete a task (Bandura 1986; Zimmerman 1989). Academic self-regulation includes such processes as choosing practice techniques, using memory aids, finding suitable places to work, asking relevant questions, and setting interim goals. Poor self-regulation skills limit learning and achievement. Being self-regulated depends on four events: self-observation, standard setting, self-reaction, and self-efficacy (Bandura 1986). For students to become self-regulated, they need to monitor what they are doing, compare their progress to some internal standard, criticize or praise themselves, and have confidence in their skills. These processes can also be developed and refined by the external environment. Although everyone can benefit from learning self-regulation, it seems especially important to teach these skills to underachieving students. But self-regulation skills to improve achievement are rarely taught in classrooms. Teachers often mistakenly view student failures or learning difficulties as evidence of limited academic ability and thus lower their achievement expectations for those students. In truth, many difficulties are spawned by students' failures to self-regulate. As a result, low achievers may become inattentive and display a variety of behavior problems, compelling the teacher to focus on behavior management and classroom control. But keeping students calm and passive does not

teach self-regulation; on the contrary, such practices can cause students to become less actively engaged in their learning, especially as expectations for their success are lowered. Under these circumstances students will remain novices at self-regulation, when the goal of the school should be to help them acquire and master these skills.

Roadblocks to Self-Regulation

Although each of us is born with the capacity for self-direction, two things can hamper its discovery and use. First, the external environment may discourage or inhibit self-regulation. For example, when a teacher is highly directive, students get little practice at setting personal goals or selecting learning strategies. Second, students' lack of awareness of successful self-regulatory behaviors limits how much they are able to use them in facing new challenges. For example, a student may have a useful strategy for practicing music skills but not recognize how well that strategy could work in solving a math problem or remembering a vocabulary word.

Recognizing and teaching self-regulation is also complicated by the fact that successful tactics are often highly individualized. The effectiveness of particular self-regulation strategies varies from person to person depending on an individual's intelligences and talents. Some people talk to themselves in order to persevere during a difficult task, and others close their eyes and imagine themselves doing the task. Doodling while listening to a speaker helps some people pay attention but is distracting for others.

When students encounter difficulty, teachers need to help them emphasize self-regulation as a learning goal. Many teachers admit, however, that they lack the needed skills to improve student self-regulation. In short, teachers need to know how to recognize self-regulation in their students and how to develop a classroom that invites such behavior. One way to accomplish this is to locate a learning environment in which self-regulation occurs naturally and can be readily observed. They then need to discover why that environment encour-

ages self-regulation and consider how to build other environments to do the same thing.

Initial Observations

For several years, we have been studying the identification and development of talent in dance, music, and theatre in inner-city elementary school students. During the first stage of the project, it became evident that many of the students who were identified as artistically talented were failing academically (Baum, Owen, and Oreck 1996). When classroom teachers observed these students during talent-development lessons taught by professional artists, they were surprised to see self-regulation in action. During arts lessons, the students paid attention, followed directions, set goals, and practiced on their own. They also had high, self-set performance goals and expressed confidence in their artistic abilities. Interviews with the students confirmed their awareness of the strategies necessary to succeed in their particular art forms. Students described how they set personal goals and criticized or praised themselves for their performances. Repeated successful experiences gradually helped the students to build self-efficacy in their performances. In short, the processes of self-observation, standard setting, self-reaction, and self-efficacy occurred naturally during talent-development lessons. Table 1 describes the specific self-regulation behaviors we observed in the students during their talent-development lessons in the performing arts. It is important to note that for the most part, the self-regulation behaviors shown by the students in the arts had not been explicitly taught; the students had been motivated to discover them on their own so that they could succeed. Their motivation seemed to be fueled when teaching artists noticed and reinforced the appropriate behaviors. These behaviors are the very same ones classroom teachers expect of all students but observe in only a few.

What was it about the arts environment, but not the regular classroom, that encouraged self-regulation? To answer

TABLE 1. Self-Regulatory Behaviors

Paying Attention
- avoids distractions
- comes back to task after interruptions
- shows good concentration
- listens carefully
- follows directions
- makes appropriate contributions and comments

Using Feedback
- uses criticism to improve work
- maintains corrections
- is open to other points of view
- evaluates own work

Problem Solving (Curricular)
- is able to identify the problem
- comes up with different or unique approaches to a challenge
- does not stop with one answer
- thinks for self—is not swayed by the opinions or answers of others
- is able to identify extraneous or missing information
- relates other information and experiences to the problem

Self-Initiating
- takes responsibility for learning
- moves self to a productive place to learn
- works on task without explicit instructions from the teacher
- uses own strategies to become a more effective learner
- starts on own

Asking Questions
- asks good questions
- is not afraid to ask when information is unclear
- will pursue an area of curiosity
- is motivated to find solutions for unanswered questions

Taking Risks
- offers opinions, even if they are unpopular
- volunteers readily
- will do or show something rather than just talk about it
- is ready to try new things
- is willing to explore difficult or vague concepts

Cooperating
- works well in group activities
- follows instructions
- listens to, observes, and learns while interacting with peers and teachers
- can negotiate and compromise with others to achieve a goal

Persevering
- does not stop when it gets hard
- continues even when the teacher is not looking
- exerts effort throughout the activity
- seems to enjoy challenges
- follows task through to completion
- is not stopped by criticism

Being Prepared
- does homework
- is ready to begin the exercise or task at the beginning
- has supplies
- remembers information and instructions
- is organized

Setting Goals
- sets up specific interim goals to solve a problem
- is motivated towards the goal
- recognizes the sequence of tasks needed

this question, we started by visiting several classrooms to observe how a sample of students who were talented in dance, music, or theatre used self-regulation in typical academic settings. Many of the students who were self-regulated during their arts lessons demonstrated few self-regulation skills in an academic environment. For the most part, they tended to fade in and out of the lesson while they looked for distractions to keep them entertained and awake. This was not surprising in light of the significant differences we saw between the two learning environments. These differences are outlined in table 2. We grouped the differences into the categories of physical and emotional climate, goal setting, instructional processes, teacher expectations, and feedback.

Observed differences between regular classrooms and arts classrooms imply that the learning environments and instructional strategies influence the extent to which students develop and use self-regulatory behaviors. Arts environments inspire students to assume greater responsibility for their learning, whereas in regular classrooms students are expected to adopt more passive roles. Arts teachers focus on training students to master a series of specific techniques; classroom teachers emphasize the final outcomes or the correct answers. In arts classrooms, the students share the stage with the instructor in setting goals, trying new skills, and evaluating their own and each other's performances. In regular classrooms, the teachers take center stage, and the class is an attentive audience only when entertained.

Students need to be actively engaged in their learning for the underlying processes of self-regulation—self-observation, standard setting, and self-reaction—to occur. This seemed to occur with students during their arts lessons. Because they had already demonstrated natural abilities and dispositions for talent in music, dance, or theatre, their self-efficacy for developing skills in these domains was strong, and they had high expectations for their own performance.

These student beliefs are reflected in many of their active behaviors. Students used self-initiated memory and practice techniques during the arts classes. As in the case of Dionne, dance students could be seen marking (doing a movement small and in place as it is being demonstrated). Likewise, in music

TABLE 2. Comparison of Arts and Academic Classrooms

Arts Class	Classroom
Climate	
Physical space arranged for activity	Rows of desks
Individual, small group, or full group participation (depending on activity)	Mostly full group activity
	Emphasis on "right" or "wrong" answers
Unique individual answers encouraged	Emphasis on quiet
Some noise and chaos tolerated	
Goal Setting	
Set by instructor and students	Teacher set
Result in performance for an audience	Result in grades
Related to talents and interests	Curriculum-centered
Real-world challenges encountered	Vague connection to the real world
Process	
Breaking down process into subtasks	Reading, listening, and completing worksheets
Instructor modeled behavior	Teacher gives instructions, but does not participate in activity
Learning progresses from watching and doing to discussion and reflection	Lessons mostly verbal. Majority of time spent listening, reading, and writing
Lesson requires active participation and student leadership	Teacher-directed
Opportunities to move around and confer	Students seated
Opportunities for students to ask questions	Limited need for student questions
Opportunities for divergent thinking	Convergent thinking stressed
Expectations	
High standards for all	High standards for some
Frequent specific feedback (positive and negative)	Brief "right/wrong" feedback most common
Student feedback to other students encouraged	Teacher feedback, summative
Regular self-evaluation encouraged	Self-evaluation infrequent

lessons students often practiced silently (moving the hands in the proper pattern but without making any sound), and in theatre they found physical cues or gestures to trigger a feeling or remember a line. In all of the arts, students frequently used visualization and asked good, clarifying questions before beginning an exercise. They generally came to class prepared and accepted feedback from their instructor and peers.

Another factor relevant to students' success in the arts was the nature of their instruction. Arts instruction relies on a mixture of both verbal and nonverbal teaching. The nonverbal often precedes the verbal and is given more emphasis, a sequence long advocated by cognitive developmentalists such as Piaget and Bruner (cf. Lefrancois 1994), particularly for the elementary school level. The arts students had been assessed as having particular strengths in nonverbal intelligences—musical, kin-

esthetic, and spatial (Gardner 1995)— and were eager to attend to tasks that emphasized those abilities (i.e., tasks that forecast success). Also, the arts instructors held high expectations for student performance and offered constructive, specific feedback during the course of the lessons about technique. Students were expected to practice a particular piece or step until they had mastered it. This challenging curriculum sent clear messages about standards for success. Moreover, the instructors often demonstrated, verbalized, and reinforced self-regulation strategies: "Watch and listen to each other. Notice David practicing with Shanika. Make a list of what you need to bring for our performance. How do you think we could do that better?"

The arts learning environment and instructional strategies require active engagement on the part of students. Once they are engaged, we observe

them using effective strategies to accomplish their goals. Arts teachers repeatedly brought these strategies to the students' attention and reinforced them with praise and encouragement. In this way, students become more aware of the role their strategies play in achieving success. In the regular classroom, there is considerably more emphasis on verbal activities—reading, writing, speaking, and listening. There are relatively fewer opportunities for students to demonstrate active engagement in their own learning. Students whose most developed cognitive strengths are in nonverbal areas (many of the students who were identified as talented in dance and music) have a particularly daunting challenge in the classroom if the instructional environment does not allow them to use these strengths to compensate for relatively weaker verbal skills. The net result is that they are discouraged from applying

the self-regulation behaviors summarized in table 1.

In summary, the learning environment provided by the artists encourages self-regulation by building on students' strengths and interests and by using developmentally appropriate instructional strategies to engage students. As the instructors observe students working toward their goals, they provide regular, specific feedback about progress and learning strategies. Through this feedback, students are made explicitly aware of how their learning behaviors are linked to success and achievement. Table 3 illustrates this teaching model.

Transferring Self-Regulation Skills

The critical question is how to get these skills to transfer to the academic setting so that students will experience the same success in their academics as they do in the arts. Transfer of learning involves applying knowledge and skills to a new situation. This process occurs more readily when the learner perceives similarities between old and new situations. Transfer is also enhanced when proficient role models show how, when, and why skills can be used in a new situation (Bandura 1986). These models, often adults, can help the learner recognize the behaviors he or she has internalized and how they might relate to new situations (Vygotsky, cited in Gredler 1992). As students practice, they gradually progress from transferring skills across similar situations, to transferring skills among markedly different ones.

The arts students demonstrated and internalized behaviors in arts classes and were self-regulated in those settings, so it was logical to incorporate the features of those settings into the regular classroom. The cues that activated transfer needed to be as similar as possible so that students would easily recognize transfer opportunities. We hypothesized that using the strategies of the arts instructors and integrating certain arts activities into the regular curriculum would enhance transfer of self-regulation behaviors. The classroom teacher would have a chance to see the students display these behaviors as they learned academic lessons, and the teacher could then provide feedback about self-regulation behaviors and assess progress in mastering content. In essence, two aspects of transfer needed to work in tandem: transfer of instructional conditions and transfer of self-regulatory behaviors. The first assists the second.

Integrating the Arts into the Academic Curriculum

Much has been written about using arts activities to enrich the academic curriculum. In our work, however, we do not define arts as enrichment. Rather, we are using arts teaching and learning processes as models for enhancing student self-regulation and achievement. We understand that regarding the arts in this way requires a shift of classroom teachers' thinking. Our research has shown that although teachers were enthusiastic about including the arts in

the curriculum, they felt that they lacked the time to include the arts on a regular basis. These comments revealed that teachers did not perceive integrating arts processes into the curriculum as a means to teach content or assess mastery of skills. In fact, when asked, they admitted that they had very little confidence in their abilities to use the arts as an instructional strategy (Oreck, Baum, and Owen 1996). A staff development program was necessary, then, to help teachers see the benefits of using the arts in the classroom and to demonstrate how to integrate the arts processes into curriculum and instruction. The program had four primary goals for teachers: to build their skills as participants in the arts, to help them identify the artistic talents and abilities of their students, to increase their skills in directing arts activities, and to develop curriculum that uses arts experience to teach academic content. Through educational seminars, curriculum development sessions, and a series of workshops in dance, music and theatre, teachers worked with artists to adapt arts activities for use in the academic classroom. A complete description of this program appears elsewhere (Oreck, Baum, and Owen 1996).

The training resulted in two major outcomes: Teachers began to establish classroom climates that fostered creative expression, risk-taking, and self-regulated learning. They also began to develop lessons that incorporated appropriate arts activities and processes to teach specific academic skills or concepts. In particular, the teachers

TABLE 3. Artistic Teaching Model		
Setting the Stage	Successful Engagement	Follow-up
Assessing strengths and interests	Setting goals	Reviewing what was learned and how it was learned
Planning arousing activities	Encouraging active participation and self-regulation	Identifying and generalizing strategies for transfer
Creating a safe environment that encourages risk-taking	Provide continuous, supportive feedback	Self-assessment and peer assessment

FIGURE 1. Curriculum Adaptation Guide

Content objective: _____

Self-regulation skills to be modeled or reinforced: _____

Arts process used: _____

The following questions guide teachers to monitor their own understanding and use of the curriculum model

I. Activity
- Does this activity allow the students to be active?
- Will this activity allow the students to use their strengths?
- What content will this activity teach?

II. Arts Process
- What arts process have you incorporated into this activity?
- Are you using the arts as a way of teaching content rather than as an add on?
- How will using the arts process enhance comprehension and understanding and add to knowledge?
- What arts process are you modeling for your students?

III. Self-Regulation
- Does this activity allow students to exhibit self-regulatory behaviors?
- What self-regulatory behavior will you be highlighting during this activity?
- How will you introduce and reinforce the highlighted self-regulatory behavior?
- Has the student set a goal for him/herself?

IV. Debriefing (Possible Questions to Ask Students)
- What things did you do during this activity that made you successful/unsuccessful? (Try to elicit specific behaviors and strategies.)
- What would you do differently next time?
- How did you use (highlighted self-regulatory behavior) to complete this activity?
- How might you use (highlighted self-regulatory behavior) in other situations in your life and in your regular classroom?

- arranged the physical environment to allow for interaction and movement
- modeled creativity themselves
- provided more opportunities for individual and group feedback
- stated clear expectations for behavior and standards

When planning their arts-integrated lessons, the teachers specified the lesson goals and targeted specific self-regulated behaviors.

The *Curriculum Adaptation Guide*, shown in figure 1, assisted the teachers in developing these lessons. One example involved using movement to teach molecular bonding in science to a fourth grade class. The specific content objective was for students to understand how the structure of water molecules change when in a solid, liquid, or gaseous state. To accomplish this, the students participated in three movement experiences simulating the various states of matter. They began the experience by visualizing how molecules might move.

Working in groups of four, the students were asked to move around the room as a group using any movements they wanted without touching each other or any other group. In the second experience students again moved around the room, but this time they were asked to join hands. Finally the children

TABLE 4. Samples of the Integration of the Arts and the Academic Curriculum

Curricular/Arts Area Level	Skills or Concepts
Science/Dance High School	Momentum. Exploration of force and weight through movement improvisation and choreographed dances. Students generated hypotheses, designed an experiment, and drew conclusions about the laws that govern momentum.
Science/Dance Elementary	Cloud types (cumulus, stratus, cirrus, nimbus). Exploration of shape, level, and weight in movement improvisations to build understanding of the physical properties of these four cloud types.
Science/Music Elementary	Plant structure and function. Creation of vocal/body sounds to identify and explain the function of the parts of a plant.
Language arts/Dance Elementary	Descriptive language/poetry. Exploration of qualities (texture, shape, etc.) of objects using dance and music. Collaborative poems written using descriptive language generated through dances.
Social studies/Theater Elementary	Immigration. Reinforcement and expansion of reading material through character portrayal of immigrants traveling to and arriving at Ellis Island.
Language arts/Theater Elementary/Junior high	Creative writing. Descriptive writing based on characters, events, and settings created through theatre improvisations.

were asked to join elbows and repeat the experience. The teacher then asked the students to sit down and visualize themselves in each of the three movement experiences. She told them that closing their eyes to remember details is a useful strategy used by artists and scientists alike. After the visualization, students were asked to brainstorm words that described how they felt in each experience. Students who rarely volunteered during verbal discussions actively responded. Their responses were descriptive, elaborate, and sometimes metaphorical. The teacher then asked which of their words might describe liquid, gas, or solid. This activity was also used as an introduction to other activities in the unit, such as water filtration.

After the brainstorming, the groups reconvened to choreograph a dance that would show the process of passing through one state of matter to another. Their dance had to include accurate movement qualities, speed, weight, and interaction of molecules in each state of matter. During the process of creating a dance, two of the poorest academic achievers in the class took on leadership roles. The teacher also noticed students closing their eyes to visualize and remember their earlier movement explorations. One of the students who had been identified as talented in dance remarked that she often remembered dance routines by using visualization and recalled how the class had used the strategy at the beginning of the unit to get a picture of molecules moving.

The teacher commented afterward that in the seven years she had been teaching molecular bonding to this age group, the students had never understood the concept as well. "Now, they know it cold," she commented. "It is a very abstract concept for students to understand, but using movement and visualization made it very vivid and memorable for them."

In table 4 we show examples of how various art forms are matched with curriculum areas and teaching activities. The arts activities developed for these units were used to teach a basic skill or to deepen understanding of academic concepts within a discipline. They illus-

trate only a few of the possible connections between arts and academics. Other connections are limited only by the ingenuity of teacher-artist teams working cooperatively to create authentic and effective learning opportunities.

Conclusion

Considerable attention and study have gone into the use of the arts to enrich the academic curriculum. Little research has been done, however, concerning the mechanisms through which students learn in the arts and how those models of instruction can be adapted for the improvement of teaching and teacher education. Observation of students involved in arts classes and performances gives powerful evidence of successful learning and demonstrates a wide range of self-regulatory behaviors at work. Although any learning situation can be used as a model to teach self-regulation, arts processes provide particularly rich and effective opportunities to enhance and develop these behaviors. On a broader scale, Zimmerman (1996) has argued that schools should adopt the methods of academies that advance specific disciplines such as the arts, where emphasis is placed on "expert and peer modeling, direct social feedback for performance efforts, and practice routines involving specific goals and methods of self-monitoring" (14). Effective arts instruction encourages the development of unique individual strategies and multiple solutions to problems. Activities are performance-based, providing students with immediate feedback to evaluate their own learning. Because language is not the sole modality of instruction, a wide range of students, including those with limited English proficiency or special nonverbal skills, can learn and communicate what they know in different ways.

Once the stage is set to allow student self-regulatory behaviors to emerge, teachers need instruction on recognizing and developing them in their students, and they need guidance in planning their curricula to enhance the abilities of students to use their effective strategies and interests to master curricular topics. We are encouraged by the

results of our informal observations and are hopeful about the potential effects of using the arts to improve student self-regulation and achievement. As a result, we are currently conducting a systematic, three-year observation study supported by a U.S. Department of Education Jacob Javits Gifted and Talented Grant and the General Electric Fund's "Champions of Change" program to examine the effect of integrating arts processes into the curriculum and adopting the instructional model used by artists. Three research questions guide this research:

1. How does an arts approach to learning help elementary-age students to transfer self-regulation processes from arts classes to regular classroom settings?
2. Is self-regulation transfer improved when classroom teachers make it an explicit part of their curriculum?
3. What are the factors that enhance student achievement in the arts and academics?

We expect that evidence about these research questions will be useful to administrators, curriculum designers, teacher trainers, classroom teachers, and, of course, students. The results of this study will provide policymakers with empirical evidence to help explain the conditions that promote or harm self-regulation; the data will, we hope, be used to inform educational practices in the arts and academic classrooms.

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