

The Role of Classroom Teachers
in Identifying and Nurturing Students' Artistic Abilities
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Abstract

The results of a two and half year professional development program demonstrated the impact of an arts-based intervention to effect the attitudes and practices of classroom teachers toward the arts and artistically talented students. Project START ID (Statewide Arts Talent Identification and Development) was designed to help classroom teachers learn to identify dance, music, theater, and visual arts abilities in their students and to include artistic processes in their teaching to nurture these abilities in the classroom. Quantitative and qualitative research was conducted with 46 teachers in two Ohio elementary schools in grades one through six. The data showed that teachers were effective assessors of artistic talent and that awareness of the abilities and learning needs of artistically talented students contributes to raised expectations and increased use of the arts in the classroom as an instructional strategy. Supported by ongoing, arts-based professional development, including mentoring with teaching artists, teachers developed facilitation skills in the arts and infused arts into their curriculum to help students demonstrate effective learning behaviors in the academic classroom.

The artistic talents of many students go unrecognized and unappreciated by teachers in school. Even in schools with strong arts programs, the arts tend to be isolated from other subjects and classroom teachers have few opportunities to see their students at work in the arts. Research has shown that a significant number of students with outstanding potential in the arts read below grade level and struggle in the academic classroom (ArtsConnection, 1997; Baum, Owen & Oreck, 1996). The energy, focus, creativity, and expressiveness these students bring to the arts – qualities that are poorly measured by standardized tests – are not finding positive outlets in the classroom. Teachers may not only be unaware of students’ artistic abilities; they may, in fact, have negative attitudes and low expectations of some highly capable students (Oreck, 2004).

Project START ID (Statewide Arts Talent Identification and Development) (Ohio Department of Education, 2001) was a three-year program designed to help classroom teachers learn to identify artistic abilities in all of their students and to include artistic processes in their teaching to nurture these abilities in the classroom. Supported by the United States Department of Education Jacob Javits Gifted and Talented Students Education Program, the Ohio Department of Education (ODE) the Ohio Arts Council (OAC) and the Ohio Alliance for Arts Education (OAAE), Project START ID was implemented in two schools, one in Cleveland and one in Hamilton, Ohio. The program provided systematic talent assessment for all students including those in special education and second language learners, in grades two through six; weekly advanced classes in dance, music, theater, and visual art; and ongoing arts-based professional and curriculum development for teachers. Research was conducted to study the effects of arts instruction and arts-infused curriculum on teachers’ attitudes toward the arts, their classroom practices and students’ academic performance.

The results of the study of 46 teachers in grades one through six showed evidence that

teachers could effectively assess the artistic talents of their students. Teachers' awareness of the abilities and learning needs of artistically talented students appeared to contribute to heightened expectations and increased use of the arts in the classroom as an instructional strategy. Supported by ongoing, arts-based professional development including mentoring with teaching artists, teachers developed facilitation skills in the arts and infused arts into their existing curriculum to help students demonstrate effective learning behaviors in the academic classroom.

Project START ID demonstrated how a partnership model, involving statewide education and arts organizations, local cultural institutions, and school districts, could provide comprehensive, high-quality arts assessment and instruction for all students in non arts-magnet schools. The mixed-methods study of teachers provides a lens through which we can study the role of the arts in schools, the motivations and concerns of teachers in using the arts, and the process of enhancing pedagogy through artistic processes and methods. The educational and practical challenges faced by these two neighborhood elementary schools over the course of this project are instructive to any school attempting to make the arts a significant part of assessment and instruction.

The study gathered statistical data from the talent assessment process, classroom observations by curriculum specialists and researchers, and interview and survey responses from teachers, to investigate the issues involved in effective arts-based professional development and to link such training to students' classroom performance.

Background

Few classroom teachers consider themselves expert or even experienced as participants or facilitators in the arts (Fowler, 1996; Stake, Bresler, & Mabry, 1986). Prior studies have shown that teachers generally believe the arts are an important part of education but use them rarely and

have low arts self-efficacy (Oreck, 2004). Professional development programs in the arts thus must address issues of teacher self-efficacy, as well as the complex task of adapting arts activities and curricula for use in the classroom. The success of such professional development programs is based on a web of issues including the teachers' artistic backgrounds, the attitudes of supervisors and colleagues, the pressures of testing and teaching the required curriculum, and the conditions in which teachers teach (Burnaford, Aprill & Weiss, 2001; Remer, 1996).

Despite new state and national standards (Consortium of National Arts Education Organizations, 1994) and the inclusion of the arts as a core academic subject in the national No Child Left Behind legislation, the arts, for the most part, remain a discretionary part of the curriculum, expressed more frequently as a method or approach than as a separate subject. Pressure for test score improvement and tight budgets have resulted in decreased time for the arts in the school day, either as separate subject areas taught by specialists, or as part of the curriculum taught by classroom teachers (National Center for Education Statistics, 1998; United States Department of Education, 1995). The strongest motivation for using the arts cited by teachers in a study by Oreck (2004) was their awareness of the diversity of student learning styles and abilities in the arts. Those teachers in the Oreck study who used the arts most regularly reported that they had attended arts-based professional development and had acquired personal evidence that artistic approaches helped improve the academic achievement of some of their low-achieving students.

Little research exists linking arts-based professional development directly to changes in teaching practices or student performance (Catterall, 2001; Eisner, 1998; Winner & Hetland, 2000). While the effects of inclusion of the arts in the classroom curriculum have been linked to a range of positive affective and cognitive outcomes that support academic success (Fiske, 2001;

Welch, 1995), research in this area has been hampered by a number of basic problems. Most critically, arts-based professional development programs, even in schools with a strong commitment to the arts, are most often voluntary and short term (Remer, 1996). Research is also hampered by the wide variety of goals and approaches of the arts and professional development programs provided in schools by community-based organizations. Some programs specifically work with teachers on integrating the arts into other areas of the academic curriculum while others focus on the aesthetic characteristics of the art forms themselves and on increasing students' understanding and appreciation of art (ArtsConnection, 1997; Schubart, 1996). The teachers' roles in these programs vary greatly; thus the professional development and research goals and outcomes are difficult to directly compare.

One of the strongest rationales for arts-based professional development for regular classroom teachers has been to encourage the application or transfer of students' artistic skills and interests to other academic subjects. Such transfer from the arts is particularly hard to measure. There is little empirical evidence to date that arts instruction directly affects student performance on standardized tests (Winner & Hetland, 2000). In order to document successful application or transfer of arts skills to classroom activities at least three conditions are required. First, a theoretical model of transfer must be proposed that identifies what cognitive or affective operations and behaviors improve through the use of the arts. Second, teachers must be capable of effectively facilitating activities that allow students to apply their artistic skills in the classroom. Finally, the outcomes must be assessed using a process that can authentically capture student learning behaviors and content understandings.

Project STARTID used a model for transfer from the arts to academics, proposed by

Baum, Owen and Oreck (1997), that focuses on helping students become aware of and apply effective self-regulatory behaviors and learning strategies they use in the arts to their other classes. In the arts, many students, including those who struggle in the academic classroom, display a high level of self-regulation including goal setting, problem solving, and self-evaluation (Zimmerman, 1986). In order to employ these strategies in the classroom, students must have the opportunity and be motivated to do so (Bandura, 1977). Thus, the professional development workshops and summer institutes offered by Project START ID focused on preparing classroom teachers to facilitate arts processes that would allow students to demonstrate self-regulatory behaviors in individual and group activities. Teachers worked with teaching artists, school arts specialists, and curriculum specialists to create lessons that included an arts activity and offered opportunities for student initiative and problem solving.

These lessons could be considered *arts-infused*. A full *integration* of the arts into the academic curriculum would have a more equal emphasis on both the arts and the academic content, with more fully realized artistic goals and objectives. For the purposes of this research project, the arts were employed as a specific teaching strategy in a larger lesson, in order to engage, motivate, and assist the learning of artistically talented students, particularly those who were struggling with normal classroom approaches. The research design called for a comparison of a single arts-infused lesson to another, non-arts infused lesson in the same subject area. This comparison design restricted the scope and time available for the arts and thus the extent and complexity of arts activities that could be incorporated.

Methods

Sample

The demonstration schools were located in two highly contrasting areas – inner city Cleveland, with a primarily African American population and a small town outside of Cincinnati with a primarily white population of predominantly Appalachian background. The schools were selected to be the demonstration sites based on criteria developed for the Javits grant which required schools with a large proportion of economically disadvantaged students, special education and/or bilingual students. The schools were considered under-served and under-identified by gifted and arts programs and both had reading proficiency rates of less than 50%. The schools were neighborhood, non-arts magnet schools with typical (and in some instances extreme) limitations in space, numbers of arts specialists, and schedule flexibility.

A total of 65 teachers participated in professional development activities ($n = 34$ Hamilton, 31 Cleveland). 26 teachers (12 Hamilton, 14 Cleveland) were trained in talent assessment, 22 (12 Hamilton, 10 Cleveland) participated in summer institutes and 15 (10 Hamilton, 5 Cleveland) developed arts-infused curriculum. After-school and summer professional development was voluntary although teachers were paid a stipend to attend. Talent assessment training for the participating grades was mandatory. For the classroom observation section of the study, seven lesson pairs were developed for grades three through six. A total of 52 boys and 47 girls (approximately seven at a time) were observed with in math (41), reading (44), and social studies (14). Two lessons used dance as the infused art form ($n = 13$), two used music ($n=28$), two used visual arts ($n= 31$) and one used drama ($n= 27$).

Intervention

The goals of Project START ID professional development were to help teachers recognize and appreciate the artistic abilities of their students and use artistic and creative teaching methods in their own classrooms. The arts-based program was modeled on the nationally recognized programs implemented by ArtsConnection in New York City through two prior Javits grants (ArtsConnection, 1993;1996). Students' artistic abilities were assessed using the Talent Assessment Process in dance, music and theater (D/M/T TAP) (Baum, Owen & Oreck, 1994; Oreck, Owen, & Baum 2004) and a combination of a portfolio process (Ohio Department of Education, 2001) and the Clark's Drawing Test (CDT) (Clark, 1989) for the visual arts. D/M/T TAP is a five-session process conducted with intact classrooms by teams of two trained professional teaching artists and scored by the artists and the classroom teacher. Teachers were not directly involved in the visual art assessment, which was scored by a group of trained art teachers (portfolios) and a single expert scored the CDT. The results of the visual arts assessments were shared with the teachers, however, and visual art was a major part of the professional development process. All students in grades two through six who were in the schools in 01-02 and 02-03 were assessed in all four art forms.

Three levels of staff development were offered: 1) talent identification training, 2) curriculum adaptation and arts infusion, and 3) collaboration and mentorship with teaching artists and faculty colleagues. Table 1 summarizes the components of the professional development program.

Table 1. Summary of Professional Development Program for Teachers

Activity	Participants	Frequency
Talent assessment training and assessment process	35 teachers in grades 2-6	twice yearly – twice each in two art forms
Participatory arts workshops in dance, music, theater and visual art	approx 50 teachers in grades K-6	4 per year
Summer arts institute – 1 week	25 teachers (15 Hamilton, 10 Cleveland)	at the end of years 1 and 2 of the program
Curriculum development meetings and workshop – Co-teaching/mentoring with teaching artists	12 teachers in grades 2-6	minimum 2 classroom visits and 4 meetings in addition to the summer institute and workshops

Research Questions

The study focused on the effects of professional and curriculum development on teachers' attitudes, both toward the arts and their students, and their ability to create and facilitate arts-infused lessons. The specific research questions were:

- 1) Does the talent assessment process affect teachers' awareness or expectations of their students?
- 2) Do teachers assign more importance to the arts and use the arts more frequently in their teaching practice after participating in the professional development program?
- 3) To what extent can teachers effectively develop and facilitate arts-infused lessons in their classrooms?
- 4) How effective are arts-infused lessons in helping artistically talented students use self-regulatory behaviors in the classroom?

- 5) How effective are arts-infused lessons in teaching academic content?

Instrumentation and Methods

All participating teachers completed the Teaching With the Arts Survey (TWAS) (Oreck 2000) a pre-post instrument designed to gather data on attitudes toward and self-reported frequency of use of various types of arts activities. TWAS also contains two open-ended response questions on teachers' motivations and concerns which were analyzed through qualitative methods. Qualitative data were also gathered using end of school year questionnaires and structured interviews. The open-ended response questions, questionnaires, and interviews were coded and analyzed for patterns and themes using an axial coding schema (Strauss & Corbin, 1990).

Teachers worked with teaching artists and curriculum specialists to develop a pair of lessons in a subject area of their choice, one using the arts as an instructional strategy and one using other non-artistic methods. The two lessons were implemented in the same classroom within three days of each other. The effectiveness of the lessons' design and the teachers' facilitation of it was measured in four ways, by: 1) changes in students' observed self-regulatory behaviors measured with a ten-item observational checklist, 2) a written content test administered after arts-infused and non-arts infused lessons, 3) observations by curriculum and arts specialists, and 4) teachers' observations and self-evaluation after the classes. The process and instrumentation for studying self-regulatory behaviors was developed and tested previously by Baum, Owen, and Oreck (1997). Two experienced teachers conducted the observations after training and pilot administrations conducted in non-participating classrooms to test for interrater reliability (alpha reliability= .84). The same observer saw all of the lessons in a single classroom

and scored students on a 5-point Likert scale (not demonstrated-rarely-average-frequently-consistently) . The pre-post data for self-regulatory behaviors and a written content test were analyzed using repeated measures ANOVA and multiple regression analysis.

Results

The results of the study revealed several interrelated themes concerning the effects of talent identification, talent development, and arts-infused curriculum on both students and teachers. The differences between the two schools are reflected in certain responses, but overall the results are relatively consistent across teachers in the two sites.

Attitudes toward the arts and artistically talented students. Teachers were highly successful as talent assessors in dance, music and theater. Interrater reliability estimates for the Talent Assessment Process in dance, music and theater between the classroom teachers and professional artists ranged between .65 and .85, (moderate to high) and overall alpha reliability for the four sessions were .80 (music) to .87 (theater), quite high for an observational assessment process (Gable & Wolf, 1991). Complete Ohio D/M/T TAP results are available elsewhere (Ohio Alliance for Arts Education, 2004; Oreck, Owen & Baum, 2004).

Teachers also completed questionnaires concerning the effect of their participation in the assessment process on their awareness of artistically talented students in their class. The most frequent response concerned teachers' surprise and pleasure at seeing low-scoring or low-achieving students identified as potentially talented and thriving in the advanced arts program. The following comments exemplify this theme.

I'm more aware now that many children who struggle with academics may be gifted in the arts and this is a good way to reach them in the academic areas. Hamilton, Grade 2

I learned [through the identification process] that my students become vocal, they are able to express themselves. I see they take more of an ownership with their learning, they are able to compare and contrast what they like and dislike about the learning and describe what they are learning.

Cleveland, Grade 5

Not all teachers felt the process was a uniformly positive experience. A few comments reflected misgivings about the behavior displayed by certain students identified as potentially talented.

Unfortunately [the talent identification process] was not positive. The [art form] was theater and the student felt compelled to "entertain" and "showoff" inappropriately.

Cleveland Grade 5

Effects of the professional development process. Results of the Teaching with the Arts Survey showed some general trends but turnover among the faculty during the three-year project left only 20 teachers who completed both the pre- and post-program surveys. As a result, none of the results attained statistical significance. Other data were collected through surveys, questionnaires and interviews at the end of each school year.

Frequency of use of the arts in the regular classroom was investigated primarily through teachers' self-reports. The post-TWAS revealed higher self-reported use in all categories after participation in the program. The teachers reported increased use of both exposure-type activities (viewing a video, going to a museum or concert, etc.) and doing or making art (role playing characters, creating a movement study, drawing, etc.). It should be noted that the improvements are small and non-statistically significant and reflect only between "rarely" and "monthly" use.

Table 2. Teachers’ pre-post self-reported use of the arts (n = 20)

		Mean	Std. Dev	Std.Err
Pair 1	freq doing dance	2.58	.961	.221
	freq doing dance post	3.00	1.106	0.254
Pair 2	freq exposure dance	1.31	.571	.128
	freq exposure dance post	1.55	.759	.170
Pair 3	freq doing music	2.30	1.174	.263
	freq doing music post	2.60	1.095	.245
Pair 4	freq exposure music	2.50	1.000	.224
	freq exposure music post	2.85	1.226	.274
Pair 5	freq doing theater	1.90	.788	.176
	freq doing theater post	2.75	.851	.190
Pair 6	freq exposure theater	1.85	.813	.182
	freq exposure theater post	1.95	1.099	.246
Pair 7	freq doing visual	2.65	1.089	.244
	freq doing visual post	3.15	.933	.209
Pair 8	freq exposure visual	1.80	1.105	.247
	freq exposure visual post	2.05	1.050	.235

1 = never / 2 = rarely / 3 = monthly / 4 = weekly / 5 = daily

Teacher comments also suggested increased use of the arts for many purposes related to the curriculum, although specific frequency is not mentioned.

I have a new found awareness of the arts in education. Whenever I attend an "arts function" I'm always looking at it with an eye and ear as to how I can use it to teach a concept. Recently I attended the opening of the Van Gogh exhibition at the Toledo Art Museum and wondered if my students could use his style to illustrate their most recently heard stories.

Cleveland, Grade 2-3 Reading Specialist

I hope I use their talents in classroom situations that arise. Dancers lead movement, theater students lead theater situations etc. I found myself, after being in the company of one of the artists, starting to act more like an artist myself.

Hamilton Grade 5

Teachers’ responses to the TWAS both before and after involvement in Project START ID reflect a high level of value for all of the art forms, both in terms of exposure and doing/making art. The range of responses on the five-point Likert scale averaged between 3.8

(for exposure to dance) to 4.7 (for exposure to theater) with an overall average of 4.25 (very important) across all 8 items. It should be noted that the survey asked teachers about their sense of importance of arts in education, not necessarily whether they should be the ones teaching it.

The teachers' comments strongly supported the survey results about importance providing a broad rationale for increased use of the arts in their teaching practice.

I feel that I am more of a risk taker with the students when it comes to the arts than I was at the beginning of my career. Overall, I have become more knowledgeable about the importance of integrating arts into my lesson plans to ensure that I am meeting the needs of every student in my class.

Cleveland, Grade 5

There was a wide range of response concerning professional development experiences but the most consistent theme had to do with personal creativity and risk-taking in the classroom.

I think I feel a lot freer as a professional. I am much more of a risk taker. I believe that I am an artist, as well as a teacher. I have discovered some hidden talents within myself; I am much more of an actress in the classroom as well as a structured teacher. And it is ok for me to put on that actress face, put on the artist face and show my students that art is beautiful.

Cleveland, Grade 5

To try to get them [my students] moving or use visual art is way outside my comfort zone. So you have to be willing to do that. You have to say, "this is for the betterment of the kids, and ok, I'm going to do this even though it's not maybe the easiest thing for me to do." You just have to have a positive attitude and go with the flow and not come in with the mind set of "this isn't going to work, this is stupid, and this is a waste of time."

Hamilton, Grade 6

Challenges and obstacles encountered. Teachers also commented on the pressures they face and the difficulties of trying to fulfill the goals of Project START ID. Many of the teachers focused on time as the limiting factor in using the arts. Some, however, saw differential effects on their students.

I'm sure there are positive outcomes, more for some students than others however. I feel extremely pressured to simply get through curriculum mandated without taking extra teaching time in preparing for "special" activities for lessons. Hamilton Grade 4

Some of the most uncooperative students come to life when I add the arts. Other students flip out when the arts are added. Cleveland, Grade 3

Teachers in the Cleveland school faced a particularly difficult dilemma as they entered the final year of the project when the arts-infused lessons were planned. Over the summer the school was listed as a poor-performing school and put under the direct supervision of the district superintendent (CEO) of the Cleveland Municipal School District.

We saw a lot more creative things going on the first two years than this last year because a lot of teachers were afraid to do things that they would have done because they couldn't be caught doing something that wasn't outlined. I mean they were pretty well scripted in what they had to do. And when you're scripted tightly like that, it makes it really difficult to be creative...for those specific grade levels. Cleveland, Grade 2

I was so motivated after that first summer workshop. I had all these ideas when I got back. This year the whole atmosphere had changed. The attitude in the school this year is not about children excelling, not about growth; it's about test scores.

Cleveland Grade 4

Effectiveness of teachers in developing and facilitating arts-infused curricula.

Observations of the lessons conducted for research, as well as the preparatory lessons and others not conducted for research (primarily in Cleveland), highlight the complex challenge of infusing the arts into the curriculum. In order to compare student performance in arts-infused and non-arts infused lessons, the topic for each lesson had to be of comparable difficulty and complexity, teachable in a single 45-minute lesson, and have assessable instructional objectives. In addition, students had to be prepared to participate in the arts activity or process and the teachers had to be comfortable facilitating the activity. All of the teachers participating in the research had attended all or most of the professional development workshops.

Seven pairs of lessons were developed for the research. In addition, five other arts-infused lessons were developed, implemented, and observed but not paired with a non-arts infused lesson. The process of developing and implementing the lessons was a difficult but important part of the professional development program. The lessons gave teachers a practical goal. It focused them on specific learning objectives and the assessment of students' learning behaviors and processes. Being observed as part of a research project made some of the teachers nervous, but also heightened their focus on the pedagogy of the arts and the skills needed to facilitate arts activities. In professional development programs that don't require teachers to actually implement lesson plans with students and assess learning outcomes, the personal and pedagogical challenges inherent in developing and implementing arts processes in the curriculum can remain general and undefined.

The results varied greatly among the teachers. The most prominent factor in the success of the lessons, according to the observers, was the teacher's natural teaching style. Those teachers

whose style and relationship with the students appeared to be more flexible, who seemed most able to facilitate open-ended group processes in the classroom, and were unfazed by a certain level of noise and chaos, fared better in the arts-infused lessons. These aspects of personality and teaching style, more than previous experience with the arts or a self-image as an artist, allowed teachers to employ the arts most effectively. Students in those classrooms were already able to work together in groups, and were comfortable trying new things and taking risks. Both teachers and observers noted a higher general level of engagement and self-regulation among the entire class in both the arts and non-arts classes.

The major problem in the less successful lessons generally involved lack of time to allow the artistic process to unfold. Despite practice lessons and work with the teaching artists, these were the teachers' first attempts at implementing these specific lesson plans. As such, they were not as efficient at introducing the arts activity and moving it toward a conclusion as they would be with more experience. This brings up one of the prime difficulties in conducting classroom research. Multiple attempts, and lessons repeated over multiple years, would be more useful in studying the effectiveness of a new teaching approach or curriculum design. The limitations of a three-year project (not including the special problems in Cleveland) made repeating the research lessons impossible.

Effectiveness of arts-infused lessons to stimulate by self-regulatory behaviors. Repeated measures ANOVA revealed significant improvement ($F = 122.79$) in the self-regulatory behavior scores arts for the arts-infused (mean = 3.146, $SD = .078$, $n = 81$) compared to the non-arts-infused lesson scores (mean = 2.063, $SD = .064$, $n = 81$). Low and high scoring students (on standardized tests) showed equal improvement in the arts-infused lesson. The results of the self-

regulation instrument proved to be reliable (Cronbachs alpha = .980 for the overall scale), and the statistical requirements were met to use the 10 items as a single factor in the regression analysis.

Using multiple linear regression-analysis to control for gender, grade level, and reading test scores, the results again showed significant positive effects of the arts-infused lesson on the overall averages for the 10 self-regulatory behaviors (beta=.625, t-value=11.7, p = .001). There were no significant differences in these data between boys and girls or between high and low-scoring students (two groups, dummy coded). Grade level (5-6 vs. 3-4) appears to have an effect on the level of self-regulatory behavior, particularly in the arts-infused lesson (t = 4.7, p = 001). However, the small sample size makes it impossible to deduce whether grade level difference was simply an individual teacher effect or reflected actual, age-related differences in students' arts and collaborative skills along with greater development of self-regulatory behaviors and metacognitive strategies. The regression analyses for self-regulatory behaviors in the arts and non-arts-infused lessons are presented in tables 3 and 4.

Table 3: Multiple linear regression analysis for self-regulatory behaviors in arts-infused lesson

Variable	Standardized coefficients (beta)	t-value
Grade	.507	5.9
high scoring * (=1)	.105	1.2 (ns)
selfreg-behavior non-arts-lesson	.343	3.8
Adj. R2	49%	

dependent variable: self-regulatory behaviors arts-infused lesson ($n=80$)

ns = not significant

* = dummy coded

Table 4: Multiple linear regression analysis for self-regulatory behaviors in non-arts-infused lesson

Variable	Standardized coefficients (beta)	t-value
Grade	-.184	-1.5 (ns)
high scoring* (=1)	.190	1.8 (ns)
selfreg-behavior score arts-lesson	.470	3.8
Adj. R2	21%	

dependent variable: self-regulatory behaviors non-arts-infused lesson (N=80)

The breakdown of the self-regulatory behavior changes by classrooms shows significant improvement in the arts-infused lesson for three of the six classrooms (compared with teacher #4). Again, there was no significant difference in self-regulatory change between high and low scoring students.

Performance on academic content tests. Written tests to measure student learning of academic content, developed along with the lessons by the teacher/artist/curriculum facilitator teams, were administered after both lessons and scored by the teachers. The tests concerned only the academic content. Repeated measures ANOVA revealed no significant differences in student performance on content-tests in arts-infused and non-arts-infused lessons ($F=.238, n=71$). Multiple regression analysis was used to look at the effects of grade level (age), reading test levels, and the self-regulatory behavior scores of arts- and non-arts-infused lessons (table 5 & 6), on students' performance on the content tests.

Table 5: Multiple regression analysis for content tests after arts-infused lessons

Variable	Standardized coefficients (beta)	t-value
Grade	.147	1.5 (ns)
high achieving (=1)	.191	2.2 (ns)
selfreg-behavior score non-arts-lesson	-.432	-4.9
selfreg-behavior score arts-lesson	.624	5.7
Adj. R2	61%	

dependent variable: content-test after arts-infused lesson ($n=62$)

Table 6: Multiple regression analysis for content tests after non arts-infused lessons

Variable	Standardized coefficients (beta)	t-value
Grade	.167	1.2 (ns)
high achieving (=1)	.305	2.4 (ns)
selfreg-behavior score non-arts-lesson	.170	1.1 (ns)
selfreg-behavior score arts-lesson	-.070	-.5 (ns)
Adj. R2	16%	

dependent variable: content-test after non-arts-infused lesson (N=63)

These results show a significant correlation between content test scores and self-regulatory behaviors in the arts-infused lesson, regardless of reading and grade level. No such relationship was found after the non-arts-infused lesson, however. In other words, students with high self-regulation scores in the arts-infused lesson performed better on the arts-content-test (compared to students with low scores on the scale) but students with high scores on the non-arts-self-regulatory behavior scale did not necessarily perform better on the content test following that lesson.

Discussion

The results of this study demonstrate a range of positive outcomes for teachers and students as a result of arts instruction and assessment. Despite the small number of classrooms and students, these data offer a perspective on the process of teacher education in the arts, and the role that teachers can play in the identification, development, and application of students' artistic abilities and interests in the classroom. They also highlight the challenges of conducting quantitative, classroom-based research to compare and validate the effectiveness of teaching approaches.

Talent identification and the awareness of artistic abilities. The teachers' success as talent assessors supports and extends the research on D/M/T TAP (Baum, Owen & Oreck, 1996;

Kay & Subotnik, 1994) The teachers' focus on the surprises – low-achieving students or those with behavior or attendance problems who shine in the arts – is not unusual. While many artistically talented students do well in other subjects and score well on tests, it is those who do not, or have been previously underappreciated, that tend to impress the teachers most. The teachers' comments directly link their new-found awareness of the variety of talents, intelligences, and learning styles among students to their participation in the assessment process and to their increased motivation to use the arts as a classroom teaching strategy.

After participating in the assessment process once, teachers appeared to be more sensitized to artistic talent in general, showing improvement the first time they conducted D/M/T TAP in a second art form. This result, along with the high correlations seen between student talents among art forms (Oreck, 2004b) suggests that there may be some general characteristics of artistic ability that teachers can put to use in the classroom, regardless of the specific art form they use. Further, more than half of the students in some classrooms were identified as potentially talented in one or more art forms. Teachers, thus had consistent reminders and motivation to employ the arts in their teaching.

Professional development in the arts. It is not possible to ascribe the positive outcomes of professional development to any single component of the project. Teachers came into Project START ID with a positive attitude and enthusiastic principals. They had been given a choice about whether the school should participate in the program. While teachers appreciated the arts in general before the program, their comments after observing their students in the assessment process and in classroom arts activities tended to focus on specific students who were helped by artistic approaches. Teachers may believe that the arts are good for all children, but in order to apply a new teaching approach in the classroom, research suggests that teachers need evidence

that it will make a difference in student performance. Huberman (1992) referred to the need to link new pedagogy with observable student performance results as “personal teaching efficacy.” The program’s focus on developing teachers’ arts facilitation skills and carefully observing the results in the classroom appeared to have provided a measure of personal teaching efficacy in many cases.

The four teachers in the study who appeared to be most successful in the classroom application of artistic methods claim to have little previous arts background. This supports previous studies by Oreck (2004) that showed small correlations between personal arts experience and the use of the arts in teaching. As one Hamilton 5th grade teacher (teacher #6 in the research) put it, “Project START ID has helped this very traditional teacher to step out of the box and try some other ideas.” According to the classroom observers, these excellent teachers (including the one who called herself traditional) possessed many qualities that made them successful with the arts including flexibility, easy rapport with students, an enthusiastic but calm attitude, and good classroom management, among others. This suggests that successful arts-infused professional development should nurture and support general characteristics of good pedagogy along with more specific aspects of creativity and arts skill development.

Effectiveness of arts-infused lessons. The research lessons provided a microcosm of the issues involved in infusing the arts into the curriculum and studying the effects on student learning and behavior. While statistically significant differences were found in the analyses, the numbers of participants ($n = 99$) and classes (7 teachers and lesson-pairs) in the quantitative portion of the study were too small to draw substantial conclusions. Further, as discussed previously, differences in skill and experience among teachers, makes generalizations difficult. The quality and complexity of the lesson pairs, the teacher’s ability to facilitate the arts process,

the preparation and makeup of the students in the class, all contributed to the success of the lessons and the research results. A larger sample of classrooms, in a research design conducted over a longer period of time will be needed to validate and extend these preliminary results.

It was expected that more self-regulatory behaviors would be observable during an arts-infused lesson than with another instructional strategy, particularly for artistically talented students. While not surprising, the positive self-regulation results provide empirical support for the claim that artistic approaches aid learning, especially for students who excel at the arts and struggle in other learning situations. On the self-regulation measure in the arts-infused lessons, students who scored low on standardized tests were indistinguishable from high-scoring students. Increased frequency of self-regulatory behaviors can thus be seen as one measure of the success of the lesson and the teachers' facilitation of it. It also provides evidence that students are able to apply effective learning behaviors in the classroom when they are motivated and given opportunities to do so.

The lack of significant change in content test performance, based either on the type or order of the lessons, points up a number of potential problems in the design of the tests themselves. First, a written test may be an inappropriate means to measure learning through an arts process. Students who struggle on written measures will likely display the same problems whether the test is preceded by an arts or a non-art lesson. Second, the necessity to transfer knowledge from one symbol system (dance, music, theater, or visual art) to another (writing) may present additional challenges for the arts-infused lesson. Lack of time in or after the lesson to debrief and help students verbalize their knowledge before starting the written test hampered transfer. A more thorough test using multiple measures, including performance-based assessment, would be required to fully assess student learning. Further, the limitation inherent in

testing knowledge gained in just one lesson raises reliability questions for any assessment.

Despite the potential problems with the content tests, the relationship of self-regulatory behavior to content comprehension is an important link proposed by this study. The transfer of effective learning behaviors is in itself a worthy goal, but without evidence that the arts approach also results in greater comprehension or other specific learning outcomes, the evidence is unlikely to be taken seriously. The results in the arts-infused lesson suggests a possible behavior-performance link. The non-significant correlation in the non-arts-infused lesson, could be due, in part, to the relatively fewer notices of self-regulation in those lessons – the fact that self-regulatory behaviors were not called for to the same extent in those lessons.

Standardized reading and math proficiency test scores were collected for two years for all participating grades. Test score improvement was not a stated goal of Project START ID. The length and intensity of the intervention is inadequate to predict such indirect outcomes. Further, year-to-year comparison of proficiency type tests, such as those used in Ohio for individual student progress evaluation is highly problematic and unreliable (Ohio Department of Education, 2003).

Limitations of the study and suggestions for further research. The initial research design involved 20 classrooms and approximately 300 students. Teacher turnover and the Cleveland school district's administrative takeover of the school resulted in the curtailment of the study and severely limited the scope of the research and the conclusions that can be drawn from it. The steps needed for teachers to develop new skills, adapt and create new arts-infused lessons, and implement those lessons for the purposes of research, made the three-year time frame (two and half years of actual programming in schools) inadequate to complete the research as designed. Five years would have allowed this phase of the study to be a pilot with successful lessons

repeated each year and new lessons designed based on what was learned.

A unit or series of lessons would allow for a wider range of learning objectives and behaviors to be assessed. In a more extensive study, more time and attention would be taken in the creation and pilot testing of content tests, including the addition of performance-based assessments. Most important, teachers need more time to create, rehearse, and revise their lessons, gaining experience and confidence before conducting them in front of researchers. A new approach cannot be adequately compared to a familiar one without adequate practice.

A more extensive research project would study all of the students in the class, with opportunities for comparisons among students with different learning styles and abilities, artistic strengths and talents, and academic performance levels. The observations of the teachers and researchers suggest improvement in engagement and self-regulation among a large percentage of the class in the arts-infused lesson (Collier, 2004; Jaffe, 2004).

Conclusion

This study provides many perspectives on the process of professional development in the arts for teachers and the potential for using the arts in the classroom to improve students' academic performance. The changes seen in teachers' attitudes and practices result from a comprehensive arts program that involved the entire school over two and a half years. The talent assessment process provided individual student data and the opportunity for teachers to see their students in a new light. Introductory and advanced classes, taught by professional teaching artists in dance, music, theater, and visual art, helped students develop their artistic abilities and self-regulatory behaviors and build confidence and self-efficacy. Arts workshops for teachers, along with ongoing meetings and mentoring with artists and curriculum facilitators, gave teachers skills

to employ the arts more frequently in their teaching practice, struggling students received strength-based, small group, after-school academic assistance (Ohio Alliance for Arts Education, 2004). A sense of importance surrounded the project, communicated by the principals and reinforced by the school districts, which raised awareness and motivation for the arts and the goals of Project START ID. None of these elements can be taken in isolation when considering the outcomes for teachers and students.

Teachers, administrators and parents noted changes in the school environment. These changes can be seen in the high attendance at program events, teacher involvement in voluntary after-school, evening and weekend workshops and meetings, and evidence of student art work displayed around the building. Both principals expressed delight at the development of their faculty and the impact of the project on the awareness of and appreciation for the arts on the part of the entire school community. As the Hamilton principal put it,

“As a principal I have been impressed with the learning process of the staff. One hundred percent were willing and ready to participate. I saw flexibility, enthusiasm, problem solving, innovation, leadership skills in action. I was not only impressed with the staff’s enthusiasm to learn and take risks, I was thrilled with the students’ and parents’ enthusiasm about learning. Overall, I did see more integration of the arts in teaching and feel that the program influenced people at all levels.”

Teachers can play an important part in nurturing students’ artistic potential. Project START ID demonstrates how artistic attitudes, skills, approaches, and pedagogy can enhance teaching and learning in the classroom, especially for students whose artistic and creative potential are not being tapped through other means.

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Appendix A. Self-regulatory behaviors

1. **Paying Attention**

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

2. **Using Feedback**

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

3. **Problem Solving (Curricular)**

- is able to identify the problem
- comes up with different or unique approaches to a challenge
- doesn't 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

4. **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
- self-starts

5. **Asking Questions**

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

6. **Taking Risks**

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

7. **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

8. **Persevering**

- doesn't 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
- doesn't get stopped by criticism

9. **Being Prepared**

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

10. **Setting Goals**

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

Appendix B – Research Lessons

School/ Grade	Lesson Title	Subject Area/ Art Form	Instructional Objectives
HAM/3	Graphing	Math/Visual Art block printing	Students will be able to make and interpret information in a pictograph.
HAM - 3	Acting Out Word Problems	Math/ Theatre	Students will be able to determine which operation to use to solve word problems and create and present dramatic situations demonstrating the problem.
HAM - 3	The Earth's Movements	Science/ Dance	Students will be able to describe and show the movements of the earth, the concepts of revolution and rotation on an axis using choreographed and improvised movement.
HAM - 4	Story Retelling through Music	Reading- Language Arts/Music	Students will be able to retell a story through music including main characters, setting, important details in chronological order and conclusion.
HAM - 5	Reflective Movements	Math/ Dance	Students will demonstrate geometric transformation (reflection) using movement and dance.
HAM - 6	Egyptian Sarcophagus	Reading/ Visual Art	Students will be able to make inferences in reading. Students will be able to give an opinion and support it with details from a story. Students will be able to write a summary of a story. Students will be able to identify vocabulary in context.
HAM - 6	Who Wants A Piece of Peace?	Social Studies/ Theatre	Students will be able to identify and show the main points of Golda Meir's life through the creation and presentation of dramatic scenes emphasizing cause and effect
HAM - 4*	Tesselations	Math-Geometry Visual art	Students will apply knowledge of tessellating and create patterns with no gaps to create works of art.
HAM - 6*	Area Sculptures	Math/ Visual Art	Students will be able to create and find the surface area of irregular shapes.

* not implemented for research