

DIGITAL NATIVES PROJECT AT PS 185, MANHATTAN
A MEDIA ARTS INITIATIVE PRODUCED BY MAGIC BOX PRODUCTIONS

AN EVALUATION REPORT
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Try or you won't learn something you need to know
Advice from 2nd grader, PS 185

Introduction

The Magic Box Productions Digital Natives Project, an early childhood approach to media arts, was conceived and implemented for two classes of 2nd graders at PS 185 Manhattan, a small Early Childhood public school located in Harlem. Nelle Stokes, founder and executive director of Magic Box Productions (MBP), designed this project as part of MBP's mission to provide media education to all students. PS 185, with which MBP has worked in the past, was selected as the site for experimenting with how media arts can be learned by second graders under the guidance of media artists and classroom teachers. Underwritten by a grant from The Harmon Family Foundation, MBP designed a trilogy of media arts residencies to help the targeted population explore the power of artistic expression through media arts by introducing youngsters to the capacities of digital cameras and ipads as well as ancillary equipment. MBP and PS 185 Principal, Jane Murphy, hoped to enhance young children's cognitive and artistic skills by enabling them to engage in the art of photography, audio recording and stop motion animation. This pilot program explored the dimensions of learning that could be evidenced as students participated in three eight-session residencies totaling 24 sessions spanning 24 weeks over the course of the 2014-15 school year. While the duration of each residency was relatively short, it was hoped that the accumulation of skill and knowledge acquired over the entire span of sessions would more specifically demonstrate the power of media arts as an enhancement of learning across the social studies and science curriculum.

PS 185, a designated magnet school in District Three, has a STEM-centric curriculum that incorporates principles of design thinking and engineering. Central to the curriculum is the injection of playfulness as well as mindfulness so that students, many of whom arrive at school without the requisite "ready to learn" skills, acquire over time the essential habits of learning, codified by the DOE and based on the principles of learning articulated by such educational theorists as Charlotte Danielson, Howard Gardner, and Eric Jensen (see Bibliography). The school provides an orderly and colorful environment and provides arts enrichment opportunities throughout the grades.

The New York City Department of Education (NYCDOE) has assigned an important place for media arts within both the arts and technology curriculum areas. *The Blueprint for Teaching and Learning in the Arts, Grades K-12: The Moving Image* and *The Blueprint for Teaching and Learning in the Arts, Grades K-12: Visual Arts* provide the armature for arts teachers and teaching artists currently exploring how to meet media arts standards as well as enhancing the Common Core and other iterations of what children should know and be able to do in the 2nd, 8th and 12th grades of school. The aforementioned Blueprints are now available to teachers, administrators and the general public on the schools.nyc.gov/arts website. While "permission is granted" to incorporate media arts in early grades, in fact, few schools report their inclusion into the school day (see Comptroller Scott Stringer's *State of the Arts* report, 2014).

Digital Natives Project Description

Beginning with planning meetings in August and September of 2014, the MBP Digital Natives Project staff and the three participating teachers, Principal Murphy and Assistant

Principal, Dr. Nick Cracco, agreed upon the broad outlines of the residencies. MBP Teaching Artists, professional media artists with impressive credentials in their specialties, then composed eight-session units that took students through the technical and artistic range of possibilities leading to the completion of photographic, audio recording and animation projects that demonstrated their learning.

The intention of the Digital Natives Project was “to provide extended opportunities for students to strengthen written and spoken ELA skills while deeply experiencing media arts.”¹ By providing three distinct but related residencies in photography, audio engineering, and stop motion animation respectively, Magic Box expected to show how the media arts enhance those skills articulated in the second grade social studies and science curriculum for PS 185 which, in turn, are aligned with the standards for learning produced by the New York City Department of Education (NYC DOE). Each teaching artist, with support from Magic Box, developed a detailed set of lesson plans that would lead students from a rudimentary knowledge of the digital equipment to illustrate some facet of the social studies units that they were learning in their two classes. One of the classes was an unstratified general education cohort while the other was an “inclusion” class with general and designated special education students and a two person team of teachers, one with credentials as a special education practitioner.

Classes met on Wednesday afternoons, following a morning of ELA and Math and a short lunch period. Each residency climaxed with a special event – an exhibition of student work to which parents were invited – where students could describe their work and enjoy the accolades accorded to them for a job well done.

Part of each residency included a 60 – 90 minute after-school or released time session where the TAs taught the participating teachers the technical processes that the children would learn and apply during the course of the residency. These sessions were also used to help teachers familiarize themselves with some of the artistic challenges that the children would be asked to fulfill as well as understand the evaluation process that had been designed for the project.

Participating teachers and MBP personnel prepared for the transition from one residency to another in lunchtime meetings where they had a chance to talk with the MBP staff and evaluator regarding their perceptions of impact, solve any problems that they had identified, do some on-the-spot problem solving where needed, and review the plans for the next series of workshops. Frequently Ms Murphy and/or Dr. Cracco were able to attend part and sometimes the entire meetings, listening and commenting and always reinforcing the important contribution that Digital Natives provided. Every residency included three phases: preparation (planning, teacher training), execution (in class and field trip instruction, culminating event) and follow up (assessment, evaluation feedback, reflection and planning of next cycle).

¹ From proposal to the Harman Family Foundation Grant Proposal, “Developing Digital Natives. “

From the beginning of the residencies, Magic Box was aware of the special circumstances and needs of the population it served as described in the School's Quality Review Report:

P.S. 185 - The Early Childhood Discovery and Design Magnet School is an Early Childhood school with 237 students from PK through grade 2. The school population comprises 54.9% Black, 38.0% Hispanic, 2.1% White, and 3.8% Asian students. The student body includes 6.8% English language learners and 11.0% special education students. Boys account for 40.5% of the students enrolled and girls account for 59.5%. The average attendance rate for the school year 2012 - 2013 was 91.0%.

"Parents don't understand the pressure that schools are under; they don't understand the Common Core pressure, and they rarely access cultural resources." Murphy also commented on the importance of play and art and their contributions to developing the brain. "Parents don't let their kids play outside because it is not safe."

Evaluation Methods

The Evaluation Plan was designed to be cost efficient and focus not only on what was intended but also on some of the invariably unintended consequences of a project such as this. The evaluation included traditional practices using project-designed tools such as surveys, interview and observation protocols and probing conversations to get at the managerial, instructional and educational impact of the work. Samples of specific tools used are appended to this report. In addition, the evaluator, principal and MB Executive Director reviewed the scores of Fountas and Pinnell's *Benchmark Assessment System (BAS)*², geared to second graders at PS 185.

The evaluator attended culminating sessions for the photography and audio residencies and reviewed the photographs and notes regarding the third residency event. Following each residency the evaluator interviewed a designated focus group of students composed of six youngsters selected by their classroom teachers to participate. These children gave full responses to the programmatic elements and to their own sense of accomplishment (see protocol for focus group sessions in the Appendix).

Limitation of study

While every effort was made to check for impact, the evaluation plan was governed by budgetary feasibility and precluded the kind of quasi scientific research techniques more associated with significantly larger projects. Since the NYC DOE does not begin standardized testing until the third grade, the evaluation process was limited by the kind of data available (BAS scores and Measures of Student Learning, commonly referred to as MoSLs) and the fact that the central NYC DOE's presentation of data to the schools changed significantly from 2014 to 2015. This made it very hard to compare data from year to year, as had been originally designed for this evaluation. Nonetheless, using the school's diagnostic testing system (Fountas and Pinnell), we were able to see how student reading skills developed over the course of the school year (see below.) For that reason we are

² Published by Heinemann, the BAS is based upon the use of leveled reading tests for vocabulary and comprehension used for diagnostic purposes. Teachers test students one at a time, at four points in the academic year.

recommending that in the second year of this program the evaluation include the purchasing of a valid and reliable standardized reading test to be administered in Form A in September and Form B in May independent of other assessment processes. (See Recommendation section, below, for further discussion.)

Findings

Principal Murphy, in a series of exit interviews, commented that the **Magic Box project added its special brand of play into the curriculum that was much appreciated.** Sessions that took the children outside to explore playgrounds and other neighborhood features contributed a much needed supplement to their social studies explorations and highly structured math and ELA sessions. Moreover, **the residencies complemented the STEM work that is at the heart of the school's magnet identification.**

The dominant findings for this project were consistent with research regarding the impact of well-planned and executed arts education programs (see bibliography, in Appendix.) The three participating second grade teachers reported that students maintained an enthusiastic attitude and set of positive behaviors throughout the three residencies. In interviews and surveys they completed, teachers stated that the residencies helped to heighten understanding of the designated social studies units with which they were aligned. And despite taking time away from the standard English Language Arts curriculum, the residencies were applauded for giving youngsters the time to acquire and use new vocabulary and explore the everyday community sights with "a new eye and ear." All who were interviewed felt that the experience with the three kinds of residencies was worthwhile, and teachers and students were pleased to report that they had learned new and valuable skills in all three focal areas. Students reported their "approval" of the project and its various opportunities to photograph, record and learn stop action animation techniques. Enthusiasm for learning is frequently cited in research as an important factor in student achievement (Rosenshine & Furst, 1973). In Digital Natives, enthusiasm was palpable not only in the students, but in their teachers and teaching artists. Parents who attended the culminating celebrations reported how enthusiastic and proud their offspring were as they reported on what they had accomplished and showing off the results.

The program aligned with the primary characteristics of school-based successful arts education programs (Fineberg, 2004, 139 - 140):

... effective administration, praiseworthy staff, a rigorous and animating curriculum, clear-eyed assessment and evaluation processes, and supervisory support for all players to do their best work ...

And the Magic Box residencies aligned with the characteristics of good arts education programs:

... visionary and enabling leadership, sufficient time for planning and implementation of good ideas, and artistic and pedagogic expertise...

While each of the residencies was relatively short, the students, under the guidance of their very gifted Teaching Artists, were able to venture beyond using media for games (at which most were very proficient) but into the realm of composing and refining original works of media art. In the process, the three participating teachers and their principal reported on **improved attention and focus** as well as **improved abilities to work productively with partners and as members of groups**. These changes were also observed by the Magic Box staff as well as the evaluator.

Below is distillation of comments from teachers' and artists' feedback:

- Teachers observed multiple instances where most students showed persistence, focus, and productive collaboration with peers and experts, qualities cited by Hetland, Winner et al (2007) as key in creating successful studio art work.
- Teaching artists engaged the youngsters with their enthusiasm and preparation for leading a real creative experience, also a factor in successful studio art work.
- Teachers and students acquired and developed real-world media skills including managing the digital camera for close ups and wide angle shots and various points of view, editing and splicing original audio recordings by using the app Garage Band on their shared ipads, and composing brief animated videos using the stop motion technique with the aid of MBP's staff.
- The school's administration lent support as well as supervision when needed at every phase of the program, including releasing teachers for meetings with MBP staff and the evaluator.
- Teachers enjoyed and actively applied their new media skills as they assisted in the classrooms during residency days.
- Teachers noted that all participating students finished their assignments as photographers, audio engineers and animators and were proud of their efforts.
- Noted real growth in reading competencies as measured by quarterly assessments of F & P: of vocabulary and comprehension administered by teachers
- Artists observed growth in age appropriate mastery of media which was observed by teachers, administrators, MBP team and evaluator as recorded in surveys following each unit
- All stakeholders appreciated the introduction of the Poets Den gallery and performance space as a new resource for the school community.

Students in the focus group exclaimed their delight with the program and their experience in each residency. And the administration was very pleased with the way the program evolved during the course of the school year.

Virtually all the children were able to identify key parts of the camera and Garage Band audio controls (stop and record buttons, audio region, audio symbols) by the eighth session.

Artists were asked to keep notes on their sessions and circulate them to MBP staff. The insights that they gained from their sessions were deep and meaningful. Typical was this response from Hank Wagner, audio artist:

Once we got the audio we needed (from the field trip/audio scavenger hunt) we came back to the class and the kids got to practice their skills by listening to tracks while muting others... This was a very exciting time for the students....

As with all new programs, the evaluation process revealed needs to refine the program for even greater effect:

- need for greater planning with teachers for their more active participation during in class and field trip activities. Planning during the past year was primarily focused on the “what” was about to happen as opposed to exploring the “how” teachers’ roles should contribute to the work in process during in-class sessions
- need to elevate the definition of “assistance” so that teachers are more involved in preparation and follow up activities with their classes
- need for revising the units on animation and audio to fit the limitations of time and chronological ages of the children
- need to rethink division of labor regarding the content of audio and animation, especially in regard to selecting stories to tell
- need to consider lengthening the photography unit to go beyond the introductory stage to more sophisticated applications of techniques learned
- need to explore more direct and complex links with social studies and science units
- need to administer a standardized reading test appropriate for 2nd graders in September and May so that more reliable comparisons can be made between pre- and post- treatment performance

While one cannot assert that there is a causal relationship between the residencies and student performance on cognitive assessments, the pre- and post measures of reading competency did reveal **evidence of rising competence between the beginning and end of the school year**. How much of this was influenced by the Digital Natives Project is impossible to say, but teachers felt that the emphasis on acquiring new words and using them appropriately in the context of the media work was certainly helpful. They also commented on the numbers of children who seemed to **gain confidence as learners** during the course of the residency when their work elicited praise by the teaching artists, their classmates and their teachers. While the figures collected regarding reading competency show that students did not lose ground during the course of the project, only a more sophisticated (and more expensive) testing program and analysis could begin to explore the relationship between media studies and 2nd graders’ cognitive development. Nonetheless, we observed over and over again the **engagement of every child in serious work** that engendered conversation, socialization, and artistic effort.

Evidence of increased reading skill

Chart 1: Percentage of students scoring at proficient or higher (levels 3 and 4) (BAS)

PS 185 2nd Grade	Beg of Sch Yr Percentage of students reading at proficient level or above	End of Sch Year Percentage of students reading at proficient level or above	Net Change	# of students
2014-15 School Year	73%*	87%	+14%	48

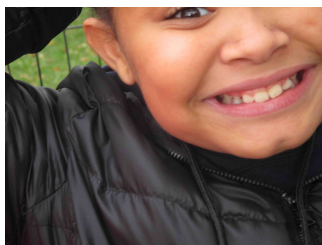
*1 class @ 71%; 1 class @ 75%; average = 73%

This assessment differs from year to year, depending upon several factors including the month and year that 2nd graders entered the school, socio economic status (SES) of families (the neighborhood is changing demographically), previous years of schooling, number of SPED students, ELL students, etc.

Review of finished work

A stroll down the virtual gallery revealed evidence of students' gaining control of their various devices and the decision making process itself.

By pairing early and late examples of work in photography, and hearing the results of the audio and animation efforts, it was possible to see evidence of hallmarks of creative thinking (Torrence) including fluency, flexibility and originality in fulfilling the assigned tasks. Below are some examples of photos taken at the beginning and end of the photography residency that show the acquisition of age appropriate mastery:



First row: photos taken by the students at the beginning of the residency.



Second row: photos taken by the students at the end of the residency.

What we observed in the more linear audio and animation residencies was the “seeding” of the behind the scenes processes that make an animated video/film come to fruition. The children will never look at a stop motion animated video/film the same way.

To see their animations, please visit Magic Box’s Vimeo channel:

<https://vimeo.com/130466964>

<https://vimeo.com/130466236>

To hear their audio stories:

<https://drive.google.com/folderview?id=0B3i0dNjg-tgfflBvTnpGX2d1RjJEdWpJbE5BRVdfdXIWWHlwektjX0tTZzFvbmpPVEFjdTQ&usp=sharing>

*[The exhibition] looks like a museum!
Observed by a 2nd grader*

In this residency, as in an ideal art making studio, we observed in very small but important ways, recognition of the role craftsmanship plays in making art, rewards of engagement and persistence, and examples of grappling with the process of envisioning and expressing verbal and visual imagery. What we saw too were some lost opportunities for observing, reflecting and exploring options for ideas and scenarios. that take more time and perhaps greater maturity before these processes can become habitual.

Unlike the photography unit, where the assignments were relatively simple, the animation and stop motion tasks were complex and called upon combinations of several skill categories: reading/writing, speaking/listening, and drawing/cutting as well as collaborating and developing and producing a script. Second graders need more time in order to think through the tasks and how to accomplish them satisfactorily. The simple process of titling a photo, or describing it, takes time and editing before committing to the final version of either. Similarly, the creating of the main characters of a video takes time and the appropriate drawing or cutting procedures. All of these

processes lend themselves to group efforts, with different jobs for members of the group. But to do these procedures well requires some guidance and modeling by the artists and/or teachers.

The project had several key elements that lend themselves to future replication by other schools in partnership with MB or like organizations, specifically thoughtfully prepared instructional plans in writing that were the result of consultations between TAs and MB staff, Ts, and Administration. The project was punctuated by end of unit celebrations that focused on the students' achievements as young photographers, audio engineers, and stop motion story tellers. Students were programmed to explore community based sites (parks, local streets, cultural organizations) related to various aspects of their artistic efforts. The alignment of the residencies with intended units of instruction within the social studies was purposeful and utilitarian. Teachers felt that the residencies enhanced their work rather than served as a diversion from "regular" school activities.

Planning was detailed and extensive, informed by periodic meetings of project personnel for feedback and consideration of immediate or future refinements

MB personnel were always available for consultation with the principal and assistant principal and teachers, as were administrators when MB needed to consult with them

Every effort was made by project participants to relate the curriculum of the residencies to existing curriculum as in the content of photography assignments to the social studies unit on "community" and "transportation."

The socialization opportunities afforded by the residencies encouraged students to talk about as well as use their new technical skills with each other and the adults in the room. Students developed their ability to work collaboratively as partners and as members of groups of four or five.

Sometimes you have to be patient
Advice from 2nd grader

Recommendations

These recommendations are dependent on finding (and paying for) more time to prepare and reflect upon the work to be done and the work completed. It is understood that time is probably the most valuable and the scarcest commodity to deal with in schools. Perhaps the school could underwrite extensions of professional development time as well as purchase the standardized reading tests to be used. Perhaps there could be a credit conferring course for participants that digs deeper into the art and technology of media arts for the early childhood grades. Perhaps there might be other ways to raise additional money to meet increased expenses.

All of these recommendations are directed to both MBP and PS 185 for implementation. They are offered more as suggestions than mandates, and are an outgrowth of a young but vital partnership.

1. Partnership accountability

MBP and the school should jointly engage the collaborating teachers in more detailed and accountable preparation and follow up of residency sessions.

MBP should consider extending instructional time (either led by TAs or Ts) so as to provide more structured procedures and practices to enhance students' literacy skills. For example, a more scaffolded approach to developing and printing titles and credits for the group stop motion animations would yield more carefully crafted results.

It would be very helpful if a teacher-made or available commercial instrument could be used to test knowledge of the selected social studies units before and after the units are taught. Test results could be included in data for analysis of impact along with standardized ELA test results.

2. Preparing for residencies

Residency sessions lesson plans should be designed to include more time for feedback at the conclusion of each session. Artists need to enable youngsters to share with each other their works in progress so they can learn from each others' efforts. (This process needs to be modeled before students practice the process.)

Reconsider the goals, objectives, anticipated outcomes and activities for the audio unit to align more specifically with the appropriate second grade social studies unit. This process of alignment must involve the teachers so that they share their curriculum and generate ideas for preparation and follow up of sessions for which they would assume responsibility. We also recommend that the artist simplify the process of recording for the first pass at creating an audio sample and then, depending on time allotted, move into Garage Band or similar program.

Devote a whole professional development day to prepare for the residencies, perhaps on one of the school holidays during September or early October. Review each of the three intended units and discuss the process of integrating the social studies and media work so that there is more time to make proper instructional procedures and materials to extend and deepen learning.

Develop a strategy for helping youngsters learn ways of upgrading their drawing and cutting skills. Think more about the materials for animation and consider whether additional drawing and other tools (scissors, sticky substances to anchor characters on backgrounds, clay) should be included.

3. Preparation and refinement of documentation and dissemination of information about the project.

It is recommended that copies of a brief report on the program be placed online as well as directed to colleagues in the field for their information about a highly successful and continuously evolving media arts program that involves every child in the designated grades.

- Prepare a large format album in hard copy and digital format of student work samples and a narrative drawn from the evaluation and the end of year report for presentation at selected conferences of teachers and of teaching artists.
- Include album as an attachment in response to questions about the project.
- Consider other means of spreading the word about the pilot and second year of the project to potential replicators, using the networks of the Center for Arts Education as well as the AIE Roundtable and the Association of Teaching Artists website.

Operational suggestions from teachers, 2nd graders, school and MBP administrators and evaluator

- Lock schedule in early in the school year
- Add more ipads to the group either from those in school inventory or purchase more for MBP
- Reexamine goals for audio and animation segments to separate first and second “products.”
- Emphasize working with partners rather than in groups for production purposes. Make sure TAs assign meaningful tasks to those who are not using the device. For example, in photography, the partner without the camera might select the shots, might pose in some of the shots, might help in selection of the four best taken by partner with the device.
- Offer PD sessions for credit (university, DOE)
- Revise written curriculum to cross reference with CC (revised) standards
- Encourage teachers to use residency as a launching pad to develop plans for further intellectual and artistic development, and continue to use cameras to document social studies and science themes
- Help TAs to develop posters with new words and examples of their use
- Do not use power point unless kids in back of room can see the frames
- Introduce parents to what kids are learning at regularly scheduled Parent Workshops

Suggestions for each segment:

- Emphasize more the notion of a “critical vocabulary” so kids can use the words as they review their pictures.
- Specify what kids are supposed to learn about community, e.g. make lists of community’s helpful resources for feeling safe, for seeing examples of beautiful art, for performing spaces, for studying nature, for helping you stay well, etc Help kids categorize these resources.
- Take photos of different forms of topography, (hills, valleys, natural bridges, structures created by nature, human beings, etc.)
- Transform a landscape photo into a painting
- Combine the need to learn cardinal directions (N, S, E, W) with photo assignments
- Use advance organizers for each segment
- Prepare audio story ahead of time, focus on recording skills

I learned new things that I didn't know when I was six.
Conclusions by a 2nd grader

Conclusion

The Digital Natives program was built upon the natural desire of second graders to play with the media devices that are so much a part of their school environment. Under the guidance of their teaching artists, students have begun to learn how to harness these attractive and popular devices to serve a “higher purpose” without sacrificing the opportunity to play, to imagine, to discover. In the first year of the program, all concerned experienced a new approach to learning involving new tools, new purposes, new procedures and new challenges. In each new element, participants found sufficient evidence to continue to develop the partnership for ever greater effect. We feel certain that with second year adjustments there will be a strong correlation between this project and evidence of learning (tests and authentic assessment of acquired skills and understandings).

The pilot year of Digital Natives provided an unusual opportunity for both students and their teachers to explore the processes of 21st century media technology combined with timeless artistic skills and understandings. Here was an instance where a seeding of experiences opened up a string of innovative processes that should propel essentially “at risk” youngsters on the path to successful school careers. By opening up the processes of the digital world, even 7 year olds can grasp the possibilities engendered by creative thinking and digital doing. Here was a fine example of where “process” trumped “product” as children explored for the first time how digital tools and procedures could be harnessed

to express their world's ideas, actions, and insights. The challenge for next year is to build upon what was learned this past year to enable next year's 7 year olds to extend and deepen what they do with their devices to their own and their school's amazement.

Magic Box Productions can take full credit for instituting an entirely new kind of curriculum, with its own skills and technical vocabulary as well as its own satisfactions to feed the self esteem of its young clients.

I love Magic Box because it is so fun ...