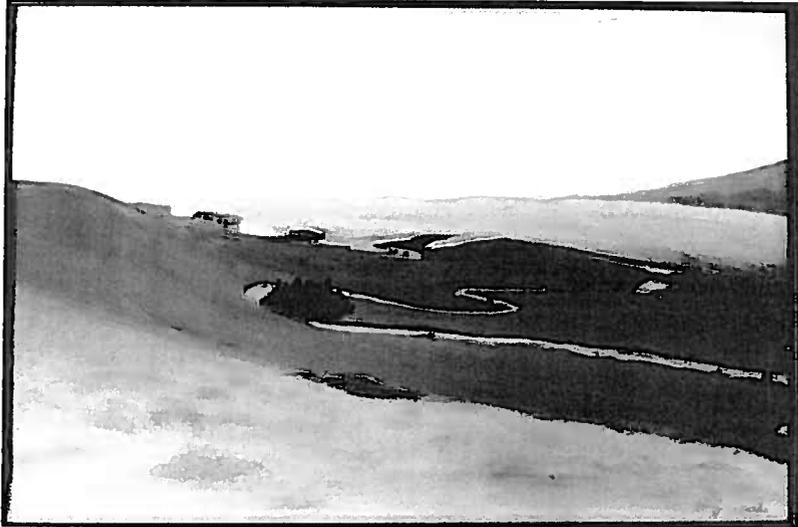


ARTS PROPEL: AN INTRODUCTORY HANDBOOK



The goose strutted on the shore,
in the dried out grass
and the sun bleached straw
like as if it knew
the reasons why
the ducklings splashed
in water by the road,
and why the truck
the truck that rambled its way
~~was~~ along the highway
stopped to gaze at
~~the stillness that was broken~~ the broken
stillness,



*Prepared by Ellen Winner, with the help of PROPEL
researchers at Harvard Project Zero and Educational
Testing Service, and teachers and administrators from the
Pittsburgh Public School System.*

Arts PROPEL Handbook Series Editor: Ellen Winner

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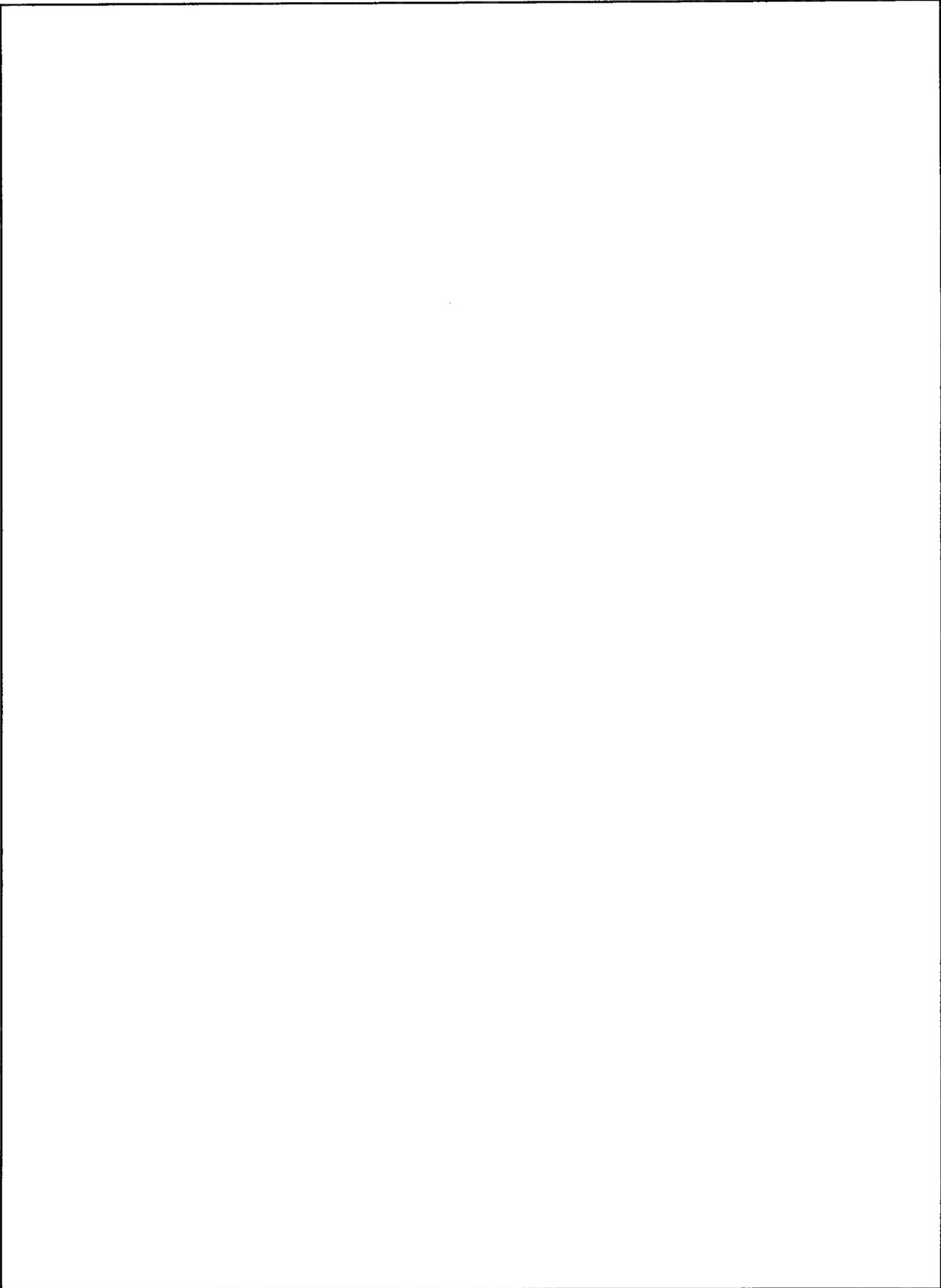


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CHAPTER 1

AN INTRODUCTION TO PROPEL

WHAT IS PROPEL?

Arts PROPEL is an approach to teaching and assessment in the arts and humanities. Arts PROPEL was developed and field-tested by two research organizations, Harvard Project Zero and the Educational Testing Service, and by teachers and supervisors in the Pittsburgh Public Schools. The Arts and Humanities Division of the Rockefeller Foundation supported our work over a five year period, 1986-1991.

Together we took on a daunting task: to observe and in turn influence how students learn in the arts at the middle and high school levels and to devise appropriate assessments that would advance that learning. Beginning with a small "core" group of teachers and administrators, and increasing the number of teachers each year, we developed samples of thought-provoking instruction in the arts and humanities, and a broadened approach to assessment of student learning.

Although we developed our approach for the visual arts, imaginative writing, and music, we believe that the materials presented have clear implications for other academic subjects as well, including but not limited to social studies, history, mathematics, and biology. In addition, although the approach was designed for the middle and high school levels, we believe PROPEL will prove adaptable for students in the elementary grades as well.

The project draws on a wide range of research and thinking in the areas of education, developmental psychology, cognitive psychology, and educational measurement. It builds upon the programmatic research in artistic development and arts education at Project Zero, the expertise in assessment of the Educational Testing Service, and the knowledge and experience of teachers and administrators in the Pittsburgh Public Schools.

PROPEL's emergence comes at an exciting time in education. At the heart of a number of major new initiatives is a reconsideration of the roles of teachers, students, learning, and assessment (cf. Camp, in press-a, in press-b; Duschl & Gitomer, in press; Gitomer, in press; Gardner, 1989b; 1991; Mitchell, in press; Resnick & Klopfer, 1989; Resnick & Resnick, in press; Wiggins, 1989; Wolf, in press; Wolf, Bixby, Glenn, & Gardner, 1991; Wolf & Pistone, 1990). These new initiatives include the National Writing Project, the California Writing Project, mathematics and science education standards developed by the National Council of Teachers of Mathematics and the American Association for the Advancement of Science's Project 2061, and the new performance-based assessments currently being piloted in Vermont, Connecticut, California, Maryland, and Kentucky. Whether in mathematics, writing, or music, all these initiatives view teachers as facilitators rather than as dispensers of knowledge, and all consider assessment as a process that can contribute to learning. PROPEL has much in common with these new initiatives. PROPEL and all of the projects cited above build upon practices currently used in excellent classrooms.

On the acknowledgments page we list the individuals who have helped to develop and articulate the Arts PROPEL approach. Although researchers at Project Zero and the Educational Testing Service prepared this handbook, we believe it reflects the voices of all the individuals who have worked together to develop Arts PROPEL.

GUIDELINES FOR USING THIS HANDBOOK

This general PROPEL handbook is for teachers and administrators considering adopting PROPEL in their classrooms or school systems, or considering using elements of the PROPEL approach to expand their current classroom practices. This handbook, and those that accompany it, are meant to be used along with in-service professional experiences to support teachers in this ambitious effort.

Readers will not find a curriculum in arts education, but instead, a view of the kinds of artistic learning that are worth thoughtful assessment. In addition, readers will encounter an approach to broadened assessment in the arts. We believe that assessment can inspire and illuminate rather than intimidate, mystify, or defeat the learner.

This handbook contains:

- * An overview of the instructional and assessment principles guiding Arts PROPEL.*
- * A discussion of PROPEL domain projects and their assessment.*
- * A discussion of PROPEL portfolios and their assessment.*
- * A discussion of the impact of PROPEL on some of the teachers and students with whom we have worked.*

Three specific handbooks accompany this general handbook, one for each of the three domains in which PROPEL has been implemented. The domain handbooks contain:

- * Sample PROPEL domain projects with assessment models developed for these projects.*
- * Samples of student work from domain projects.*
- * Sample assessments of student domain project work.*
- * Sample PROPEL portfolios.*
- * Assessment models for PROPEL portfolios.*
- * Sample assessments of student portfolios.*

These handbooks show how teachers have adapted the PROPEL approach to fit the individual needs of their classrooms.

We present the projects and portfolio methods in the accompanying handbooks only as models. Teachers may wish to follow our prototypes at first quite literally. However, our hope is that this will be but a starting point. Ultimately, teachers should build on these models and develop their own projects and portfolio methods, adapted to their particular curricular goals and students.

PRINCIPLES GUIDING PROPEL

All educational initiatives are based on implicit beliefs about how students learn. PROPEL is grounded in the belief that individuals are *constructors* of knowledge. Knowledge is not simply transferred from the mouths of teachers to the minds of students. Rather, students interpret information, integrate it with their previous understandings, and construct new understandings of the world. A view of students as constructors of knowledge is based on psychological and educational research growing out of the writings of such seminal thinkers as John Dewey, Jean Piaget, and Lev Vygotsky.

Beliefs about how students should be taught, and how learning should be assessed, underlie the PROPEL approach. With respect to how students should be taught, we believe that students should confront open-ended questions. By open-ended, we mean problems without clearly defined methods of solution, and without *one right answer*. These are the kinds of issues that professionals in the arts work on. No one tells a painter what to paint or how to paint it; nor does anyone tell a conductor how to perform a score. Students, too, can be given problems that they must define and solve for themselves.

Of course we do not mean to suggest that students should be given problems identical to those on which accomplished artists work. One would not expect a seventh grader to compose an opera, or to write a novel. However, students, even though they are still "learning-artists," should be given problems that share features with those that intrigue professional artists. This enables students to engage in and identify with artistic processes central to creative thinking.

When students are asked only to recall facts or to demonstrate already mastered skills, there is little opportunity for cognitive growth. Students simply report what they already know. However, when problems force students to use existing knowledge in new ways, or when they challenge ideas students hold, opportunity for growth increases.

For example, rather than asking students in an English class to detect topic sentences, teachers might ask students to decide *where* to place a topic sentence, to create their *own* topic sentences, or to decide when it is better *not* to have a topic sentence and to leave the point to the reader's inference. Such problems approach more closely those that mature writers confront, and thus prepare students to do significant writing on their own.

The structure of PROPEL classroom activities is flexible. At times, students may need to work on relatively structured tasks (e.g., learning specific techniques), while at other times students may work on relatively unstructured problems that they themselves help to design. The degree of structure is also influenced by the age and independence of student learners.

With respect to how students should be assessed, we believe that forming qualitative judgments of student projects are more valuable than making judgments of discrete bits of knowledge at specific points in time. Assessment in school should reflect the kinds of assessment given to professionals. Since the competence of skilled adult practitioners is assessed not by “objective” tests, but by informed qualitative judgments of their work — e.g., by book reviews, concert reviews, critique sessions in an art studio, etc. — the competence of students should also be assessed by informed qualitative judgments of the work. Quality judgments need not imply idiosyncratic subjectivity. We have spent much time establishing standards that promote shared judgments across the community.

The major assumptions underlying both the instructional and assessment practices of PROPEL are described below.

GUIDING PRINCIPLES OF INSTRUCTION

STUDENT LEARNERS IN THE ARTS ASSUME THREE ROLES

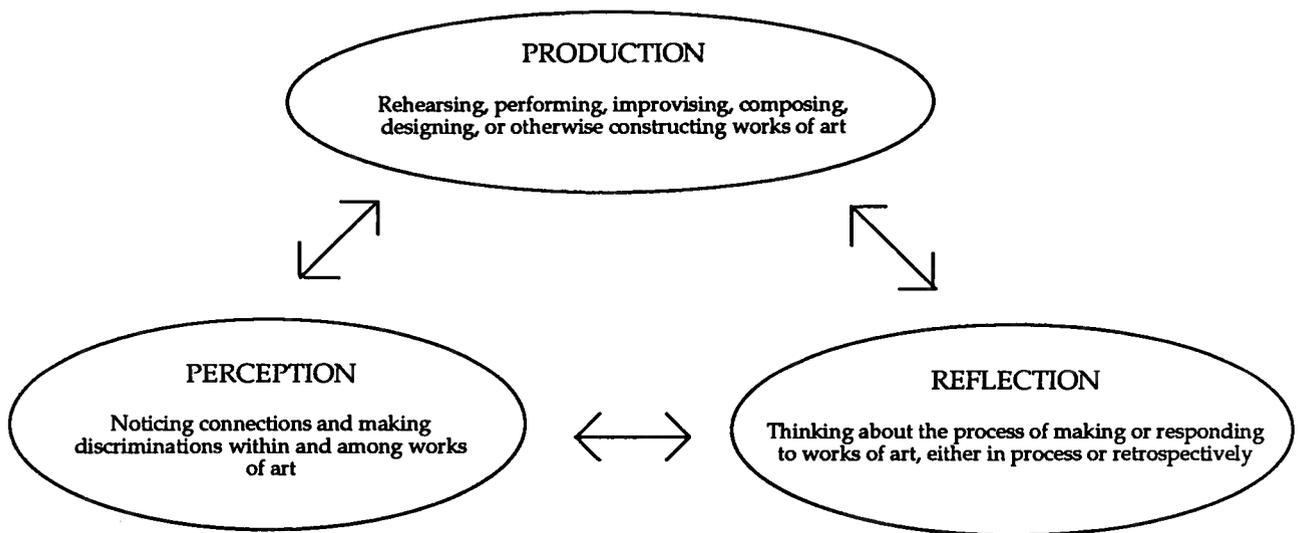
The student in a PROPEL classroom assumes three interrelated roles: producer, perceiver, and reflector. The name PROPEL is an acronym in which these three roles are embedded: PRO for *production*, which includes an R for *reflection*; PE for *perception*, and L for the *learning* that results.

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By *production*, we refer to the process of using domain materials to create or perform a work. By *perception*, we refer to the close study of elements, materials, and works in domain. By *reflection*, we refer to the practice of thinking about how works have been made and how they have achieved their effects. By engaging these three processes, students develop the sensibilities, skills, and motivation necessary for important artistic experiences.

Production, perception, and reflection are deeply interwoven and cannot be separated. PROPEL students are not given separate instruction in these processes. Rather, each project they engage in involves all three of these processes. The figure below shows how these three activities are related in the PROPEL approach.

THE RELATION BETWEEN PRODUCTION, PERCEPTION, AND REFLECTION IN PROPEL



THE PROPEL CURRICULUM HAS A PROJECT ORIENTATION

Students in a PROPEL classroom work on projects sustained over time, rather than performing single daily assignments. These long-term domain projects weave together production, perception, and reflection, with production always remaining the central focus. Each domain project focuses on a rich, central concept or problem in a particular domain, e.g., portraiture or composition in the visual arts, fiction or dialogue in writing, notation or ensemble rehearsal in music.

A fuller description of the purposes and components of domain projects is provided in Chapter 2 of this handbook. Many domain projects were developed and implemented by Pittsburgh teachers in the five year evolution of Arts PROPEL. Selected domain projects, along with student work, are presented in each of the three domain handbooks that accompany this general handbook. These are intended to serve as models, rather than lesson plans, from which teachers can develop or adapt their own projects.

STUDENTS KEEP PROPEL PORTFOLIOS

In a PROPEL classroom, students maintain portfolios of their work. PROPEL portfolios are longitudinal samples of student work and learning that fuse curriculum and assessment.

"Through the portfolio process [students] looked back to effect new learning and encourage redevelopment. Learning became layered rather than isolated to one activity."

– Barbara Albig, Visual Arts Teacher, South Vocational Technical High School, Pittsburgh

As a first step, students keep *all* of their work and writing about their work in folders. Depending on the class and its projects, these folders may themselves serve as PROPEL portfolios. Most often, however, the PROPEL portfolio is a *selection* from the folder.

The PROPEL portfolio is sometimes referred to as a "process-folio" or a "process-portfolio" in some of our writings (e.g., Wolf, Bixby, Glenn, & Gardner, 1991; Wolf, in press). Unlike the traditional artist portfolios which are composed only of a highly selective collection of finished pieces, PROPEL portfolios contain not only final works, but also some of the drafts and revisions that went into the work. Visual arts portfolios contain sketches as well as finished works. Writing portfolios contain outlines, drafts, and final works. Music portfolios contain sheet music marked with notes for performance and audiotapes of successive rehearsals.

PROPEL portfolios also contain samples of students' reflection on their own work and development. Reflective writing often occurs in journals, where students also include instances of work by others they find interesting or provocative. Reflection is also encouraged through questions posed by the teacher.

Portfolios are not intended merely as storage or final evaluation devices. Rather, they enable students and teachers to look back periodically and gain insights into the student's development in the domain. Portfolios also allow teachers to pass on rich information about the student to parents and to next year's teacher.

PROPEL portfolios allow student and teacher to document the evolution of new understandings over time. In the words of Kathy Howard, a language arts teacher at Pittsburgh's Reizenstein Middle School:

What I have learned from PROPEL is that it is really not enough to read the final draft. You have to get back to the pre-writing or the notes or whatever started it, and really follow their growth.

In sum, portfolios both record and stimulate growth and learning. As Barbara Albig, visual arts teacher at Pittsburgh's South Vocational Technical High School, noted:

Through the portfolio process [students] looked back to effect new learning and encourage redevelopment. Learning became layered rather than isolated to one activity. (Portfolio, Feb, 1989, p.3)

Chapter 3 of this handbook elaborates on the purposes, uses, and components of PROPEL portfolios. Each of the three domain handbooks that accompany this general handbook illustrate samples of student portfolios.

GUIDING PRINCIPLES OF ASSESSMENT

WHY ASSESSMENT IN THE ARTS?

There has always been a tension in educational assessment, particularly with respect to the arts. PROPEL teachers and researchers are committed to the view that learning in the arts can and should be assessed. However, if we only assess those things that can easily be measured, then there is a tendency to focus on facts and isolated skills that do not fit into the larger picture of the arts, or other forms of learning. If we assess only subjective features of artistry, then there is the risk of assessment that has little meaning beyond the individual assessor. We have tried to develop assessment models that evaluate students on dimensions important to the instructional goals of the domain and that acknowledge the role of assessment in promoting overall learning.

Assessment in the arts is no more, and no less, problematic than assessment in any domain of learning. Assessment in math, for instance, at times appears unproblematic only because the scope and variety of the tasks have typically been reduced. When math students are given open-ended problems requiring sustained work and are asked to reflect on their problem-solving strategies, assessment can no longer be conducted simply in terms of an objective metric of right and wrong. Assessment of open-ended tasks in any domain depends on informed clinical judgments.

We suggest that assessment in the arts is beneficial for at least three reasons:

1. Learning occurs in the arts and should be assessed

Learning in the arts, as in other academic subjects, demands rigorous, reflective, and creative thinking. Assessment provides valuable information to a variety of educational audiences, and thus ought to be a cornerstone of all school activities in which learning takes place.

2. Assessment provides information that stimulates student learning

By developing multidimensional assessment systems that are integrated with instruction, assessment can help students clarify and expand their own level of artistic understanding. Assessment is integral to artistic practice: writers react to reviews of their manuscripts, painters subject works to critiques, art students submit their work for competitions and admission to art schools, conductors continually assess performance during rehearsals and even throughout the course of performances. Though a specific assessment experience (e.g., a competition) may be summative in nature, artists often use the results of such experiences to help evaluate, redirect, or refine their work. Assessment thus plays a formative and educational role for mature practitioners, and can play the same kind of valuable role for young learners.

3. Assessment provides valuable information to districts, teachers, and parents

Schools have a responsibility to provide information about student progress. Assessment helps school districts articulate educational goals and evaluate progress towards those goals. Assessment can also help teachers track student learning, as well as gauge the effectiveness of the instruction provided and determine to what extent institutional goals have been met. In addition, assessment can help parents understand their child's educational experience.

ASSESSMENT CAPTURES GROWTH OVER TIME

PROPEL assessment captures growth and learning over time. Students keep longitudinal samples of their work, in the form of portfolios, and are expected to reflect continually on what they have learned. In turn, students are assessed on a variety of dimensions in terms of their level of achievement *and* in terms of their individual growth.

ASSESSMENT IS MULTI-DIMENSIONAL

One of the misconceptions supported by traditional models of assessment is that learning is unidimensional and can thus be evaluated by a single score. Students are conceived of as high or low in mathematical skill, verbal ability, or creative thinking. Tests and classroom grading practices reflect this view when students are assigned a single grade or score.

In many instances, student learning does not fit such a model very well at all. A student may perform at a low level in one verbal area (reading comprehension), at an average level in another verbal area (organizing a paper), and at a superior level in yet a third area (writing dialogue). Thus, a global summary of performance (e.g., You are a C-level writing student) provides limited information to students, to parents, to administrators, or to next year's teacher. The C must be "opened up" so that teachers and students understand what the student has done well and what the student needs to work on.

PROPEL teachers and researchers have developed assessment measures that are multidimensional. Teachers in PROPEL create a *profile* of a student based on the varied qualities or abilities central to mature artistic practice.

ASSESSMENT INFORMS INSTRUCTION

A common criticism of assessment in education is that it has driven instruction. When assessment is broadened — that is, when what is assessed are deep and important aspects of learning — then assessment can guide instruction in a positive way. In addition, such assessment can become a natural and integral part of instruction.

PROPEL assessment informs instruction in part because the instructional goals, assessment dimensions, and standards for assessment are made public: they are shared by teacher, students, and often parents. Thus, students and parents know from the start the kinds of learning valued in the classroom. Students participate in the evaluation of their own and others' work and may even help to formulate some assessment dimensions. The standards of good work can become clear to all (Gitomer, 1991).

INFORMAL ASSESSMENT IS IMPORTANT

PROPEL teachers engage in formal as well as informal assessment. Frequently they hold critique sessions in which they assess students informally as they listen and respond to student participation in these critiques. Teachers also assess student work informally in regular classroom interaction. Such informal assessments are spontaneous and typically do not leave a paper trail. These sessions are important because they provide students with ongoing feedback about their performance. These forms of assessment are also valuable for the teacher, as they provide detailed information that might not be picked up by a more formal means of assessment.

STUDENTS ARE ACTIVE IN THE ASSESSMENT PROCESS

In PROPEL classrooms, students actively participate in their own assessment. Students are often asked to evaluate their own strengths and weaknesses, both in informal discussions with the teacher, and in their journals. Self-assessment also occurs when student and teacher hold more formal portfolio review conferences, not only at the end of the term but throughout the term as well. In these conferences, students are asked to articulate what they have learned, and what they perceive to be their strengths and weaknesses.

As an example, listen to Raymont Gilliam, a student in Linda Ross-Broadus' choral music class at Westinghouse High School, as he assesses his musical performance:

I've really improved my intonation in my quartet singing. Before when Ms. Ross-Broadus told me I sang out of tune, I wasn't sure what she meant. Now I know when I concentrate on my breathing, my diction, and sing out with confidence, I no longer sing flat the way I usually did last year.
(from Wolf & Pistone, 1990)

In addition to self-assessment, students may engage in peer assessment on a regular basis. In such sessions, classmates ask each other for help and criticism.

As Kathy Howard, middle school language arts teacher in Pittsburgh, describes her PROPEL classroom:

You are always talking, always conferencing. And they are always conferencing with one another. So they don't ever feel like they are out there all alone. So my entire class has become a support system for writing. Can they learn from each other? Just you bet. Sometimes better, sometimes faster, in words that are clearer to them, in more practical ways. I learned it would be foolish not to use the best resource you have — the other kids.
From day one.

Good assessment is itself instructional. The ultimate purpose of any assessment, whether by teacher or by peer, is to build standards, principles, and understandings that students can then use to evaluate themselves and improve their work.

SUMMARY: ASSESSMENT IS AN EPISODE OF LEARNING

Fundamental to the Arts PROPEL philosophy is the view that assessment should *serve* rather than simply *reflect* learning. Therefore, assessment dimensions are made public and students are constantly active in the assessment process. Furthermore, we believe students should assess and be assessed while in the *process* of a project, rather than only *after* the project is complete (Wolf, et al., 1991; Wolf, in press). Assessment after the fact occurs too late to truly help the student.

In short, assessment must not be considered separate from instruction. Good assessment is itself instructional. The ultimate purpose of any assessment, whether by teacher or by peer, is to build standards, principles, and understandings that students can in turn use to evaluate themselves and improve their work. Such self-evaluation is essential for continuing growth outside of the school environment, whenever self-initiated or open-ended creative activities occur.

WHAT IS NEW ABOUT ARTS PROPEL?

Among the important *distinctive* contributions of the Arts PROPEL approach, we call attention to:

1. An elaborated view of portfolios

Portfolios certainly are not new in the art world, but PROPEL uses portfolios in new ways. Portfolios have traditionally been thought of as a collection of a student's best work. Traditional portfolios are meant for presentation and evaluation by outside audiences. The PROPEL portfolio extends this idea in two ways:

- i) Portfolios contain evidence of the **PROCESS** of learning; Drafts and unsatisfying works are included, along with final, or strong works. In addition, students include their own reflections or comments about their works.
- ii) Propel portfolios educate the students in addition to providing assessment information for other audiences. Portfolios are personal records of learning that can be used as a source for ideas and understanding.

2. An additional emphasis on perception and reflection

Regular opportunity for students to reflect on their work, in written and oral form, is a key feature of PROPEL. Although production remains central, the activity of making gains in meaning through its relationship with perception and reflection.

3. *Multi-dimensional assessment*

Student work is assessed on a set of potentially independent dimensions that reflect the instructional goals of a domain. Dimensions may include such important skills as inventiveness, willingness to pursue a problem in depth, critical ability, and ability to perceive qualities of works. Because students are assessed on such independent dimensions, they can come to understand the many components of learning in the particular domain. Assessment in PROPEL recognizes goals of reflection and perception as well as production. Multi-dimensional assessment reflects the complexity of learning, and the complexity of the domain.

4. *A commitment to assessing and documenting learning in the arts*

PROPEL is committed to the view that assessment and documentation are as important in the arts as they are in other areas of the curriculum.

CHAPTER 2

DOMAIN PROJECTS

WHAT IS A DOMAIN PROJECT?

A domain project is a series of sequential, integrated activities that challenge students to address a central concept or problem in an open-ended manner. Domain projects engage students in the process of work and revision over time, through activities that integrate production, perception, and reflection.

For example, students in visual arts may work on expressive portraits for several weeks, trying out a variety of media and techniques, studying portraits by recognized artists, and building up to a final work based on principles and skills learned in the preceding weeks. Because domain projects involve successive drafts leading to a final work, as well as accompanying reflections and records of perceptions, they can be seen as stepping stones to creating portfolios. Domain projects provide many of the resources for the student's portfolio, along with related journal entries.

In the domain handbooks we provide examples of projects and assessment models designed for middle and high school. However, because the ways in which students understand and explore concepts change with development and experience, projects are best designed with specific age groups in mind. Elementary school projects will look different from middle school projects, which in turn will look different from high school projects. For younger students, projects will probably be briefer, more structured, with more guidance provided by the teacher. Also, younger students may be assessed on only a subset of the dimensions used to assess older students, as some dimensions may not be age-appropriate.

Here we outline only the principal characteristics of PROPEL domain projects. In music, imaginative writing, and visual arts, domain projects are characterized as follows:

- * Domain projects are long-term projects that focus on issues central to the domain.**
- * Domain projects integrate production with perception and reflection.**
- * Domain projects emphasize process as well as product. Hence they contain ample opportunity for revision, experimentation, and research.**
- * Domain projects provide many opportunities for self- and peer-assessment, as well as teacher-student assessment.**

DOMAIN PROJECTS ARE LONG-TERM, OPEN-ENDED PROJECTS THAT FOCUS ON ISSUES CENTRAL TO THE DOMAIN

We have designed domain projects to reflect the kinds of tasks that actual artists, writers, and musicians engage in. This project view is in marked contrast with many typical "school tasks." Let's consider some of the features that differentiate "real-world" or authentic tasks from "school" tasks.

Schoolwork is often quite fragmented. Due to the constraints of class scheduling, students are frequently expected to complete tasks in a very limited time frame (e.g., one class period). Due to such fragmentation, students may fail to make connections among projects, or even among stages of each project, unless they are specifically directed to do so by the teacher.

In contrast, the kinds of problems that adult practitioners confront are not so easily partitioned into forty minute blocks. Tasks often take a long period of time, require attention to many steps along the way, can be solved in multiple ways, and build on previous learning. Sustained work over time deepens understanding.

Domain projects thus require work over time. They require a number of integrated activities along the way to the creation of a final product. The long-term nature of domain projects ensures that students have the opportunity to explore an idea in depth or breadth, that they gain the opportunity to see themselves develop and integrate skills and knowledge, and that they have a chance to incorporate feedback from teachers and classmates into their work.

DOMAIN PROJECTS INTEGRATE PRODUCTION WITH PERCEPTION AND REFLECTION

Domain projects require an integration of, and interaction among, production, perception, and reflection. Although the emphasis may shift from activity to activity, these three components cannot be compartmentalized or separated.

THE ROLE OF PRODUCTION

Production is the central activity of each domain project, with perception and reflection activities growing out of, and leading back into, production. In the visual arts and writing, production means *making*. In music, production means either *making* (composing) or *performing*.

Each domain project sets the student an explicit problem — for example, to understand the power of print, whether in a poster, a collage or an abstract painting, to write a natural sounding opening dialogue, to create a melody that "hangs together." Through confronting these problems, students are challenged to discover or invent solutions.

Production is central in domain projects for two reasons. First, production is at the heart of artistry, and should remain central in arts education. And second, perception and reflection activities become more meaningful when they grow out of the

student's *own* work. After students have become intrigued by their own attempts to solve a problem, they care more about learning how others have solved the same problem.

A similar line of reasoning can be taken about any domain. Take science, for example. Students learn best about a scientific concept if they are engaged in carrying out their own experiments rather than simply reading about science experiments. Students are more likely to be interested in Galileo's experiments conducted atop the leaning tower of Pisa if they themselves have experimented with falling objects of different weights.

We firmly believe that if one wants children to become adults who partake in music, art, and literature, education should involve *making* music, art, and literature.

William Bolcom, a contemporary composer, notes how early involvement with a musical instrument predicts adult interest in listening to music. In his words:

How do you get people to pay real attention to music again? A possible answer: People become interested in activities in which they have participated even reasonably well...Even though a person's participation may be far in the past, there will always be an affinity...Young people are likely to have fooled around with a guitar or a trap set, and that identification affords them an emphatic center in the music they hear, a musical locus to identify with.
(Bolcom, 1988, p. 45)

THE ROLE OF PERCEPTION

In PROPEL domain projects, students continually sharpen their perceptual abilities. Students are challenged to make close observations of art works, of the materials out of which these works are made, and of the natural and human-made environment.

Studying art works. In music class, students listen to audiotapes of their own and others' performances, and attend concerts. In visual arts class, students look at slides of artists' work, study their classmates' work, and visit museums. In writing, students read and also listen carefully to students' and accomplished writers' works which are read aloud. Perceptual activities may occur at the beginning, middle, or end of a project.

Perceptual activities provide an opportunity to explore the works of other artists, those who may be famous as well as those at the next table in the classroom. Along the way, students come to realize how artists in other eras and other cultures, as well as contemporary artists in their own culture, have approached artistic problems.

As noted above, skill and interest in close observation grow naturally out of production. Students feel motivated to study others' works because the students have a goal in mind — to understand how artists have solved a problem similar to one with which they themselves are struggling in their own work.

Kathy Howard, language arts teacher at Reizenstein Middle School in Pittsburgh noted:

Once students catch the threads of their own writing, they're better at catching the threads of other people's writing. It all happens together.

Close observation of art work also enriches students' experience of the world and their art making. For example, when one looks at a sky painted by the English painter Turner, one sees ways of painting skies that were never dreamed possible. Students can come to recognize new options and can make use of expanded visions in their own work. Moreover, students may now look differently at the sky in the natural environment, and notice things they had never noticed before.

Observing the materials out of which works are made. Students are asked to apply fine discriminations to the materials of the domain — the texture of soft charcoal, the timbre of an instrument, the shape of a type face, the sound of a word.

Observing the natural and human-made world. Students in PROPEL do not simply study works of art. They also observe the world around them and make connections with the world of art. For example, teachers might help students to see connections between alliteration in a poem and alliteration in ads or jump rope rhymes, or to notice similarities between repeating patterns in music and in everyday speech.

**INTEREST IN CLOSE OBSERVATION OF ART WORKS GROWS
NATURALLY OUT OF STUDENTS OWN WORK**

Ella Macklin, a student in Norman Brown's Schenley High School art class in Pittsburgh, had been working on a project — a series of family portraits. On a class trip to the Carnegie Museum, she was struck by paintings and sculptures without faces, including sculptures by Giacometti. This facilitated a turning point in her work. She began her "universal series," in which she painted blank faces that could represent anyone's family members. In her words:

I was tired of doing my family...When I went to the museum, one of the things I noticed was that the paintings, and even some of the sculptures, didn't have a face...I could put myself in the picture, I could put in my own feelings...This began the universal series...I wanted it to be where anybody could look into the picture and see their own mother.

Ella shows us here how she was stimulated to look closely at other paintings and sculptures of faces because she had been working on the same problem. Her study of art works in turn informed her own work.

THE ROLE OF REFLECTION

The observations and experiences described above, while interesting or pleasurable in their own right, are most likely to contribute to the student's art work and learning when they are accompanied by thoughtful reflection. Artistic practice requires reflection, whether or not the reflection is verbalized. Reflection occurs throughout the artistic process, not just at its completion. Built into PROPEL domain projects are numerous moments or events which invite thinking about art and art making. Discussions, critiques, or journal entries all call upon students to reflect about their goals for a particular work, the decisions they have made, and the work's strengths and weaknesses. Students also learn to make informed critical judgments about others' works, whether those of their classmates' or established artists'.

Students do not become reflective without models and guidance. Initially, the teacher needs to pose questions to help students reflect. For example, Martha Armstrong-Gray, of the Cambridge School of Weston, asks a student to reflect on a dance she has choreographed:

What holds the parts together? Why do you do those three phrases?...Is this part of the dance about sameness, about uniforms? If not, what are you up to? (from Wolf & Pistone, 1990).

And Cynthia Katz at Concord Academy in Massachusetts asks a photography student to think about her work.

Look how much larger the shadow is than him. Look very carefully at the light. Where is it coming from? What do you notice? Where have you seen images like this before? (from Wolf & Pistone, 1990.)

Ultimately, with experience, students can pose these questions on their own.

"Once students catch the threads of their own writing, they're better at catching the threads of other people's writing. It all happens together."

**--Kathy Howard, Language Arts Teacher,
Reizenstein Middle School, Pittsburgh**

What is the value of self-conscious reflection? Why not simply *make* works of art? We suggest that reflection yields several important benefits:

*** Reflection encourages an active role in learning**

By reflecting, students take an active role, not only in constructing their own understanding, but also in demonstrating how their understanding has evolved over time. They become aware of questions and difficulties in artistic work, and come to understand why it is important for artists to think about what they are doing, and how they use that information to explore new possibilities.

*** Reflection helps students learn and apply the standards of the domain**

Reflection helps students evaluate their own and others' work according to explicit standards of excellence in the domain. Reflection enables students to internalize those standards in terms that are relevant and meaningful to them.

*** Reflection encourages more inventive work**

Reflection encourages risk taking and experimentation because students come to realize that the process of making art is as important as the final product. Reflection provides the opportunity for students to think about their investigation as they try new approaches.

*** Reflection provides ideas for future work**

Reflection helps students recognize the decisions they've made and the choices they've *not* made in their work. Such recognition expands their ideas of the choices available in their future work.

As Lyle Davidson, PROPEL music researcher, states:

I want a musician with a mind. Someone who thinks about when to breathe. Somebody who bothers to notice how another musician plays. I don't care if the person is going to sing, be in a band, play gigs, or listen to jazz in little clubs. And I'm convinced you learn to think as a musician largely in rehearsal — good ensemble rehearsal. A good rehearsal is really improvisational thought. The problems are unpredictable, the solutions matter, and they have to be worked out on the spot. (from Wolf & Pistone, 1990)

Linda Ross-Broadus, music teacher at Westinghouse High School in Pittsburgh, echoes Davidson's words:

*I'd give up half the cantatas and half the four part a cappella spirituals for ensemble rehearsals where I could take the time and risk to get my students to think about their music. I don't want them just executing directions. I want them to listen to the different ways a piece might be performed. I want them to be able to step back and think about the quality of a performance. To argue about it. Giving students responsibility for judging their own work makes it possible for them to begin to think and work as musicians. They begin to be like the conductor — acting, but all the while making judgments and real authentic choices.
(from Wolf & Pistone, 1990)*

HIGH SCHOOL MUSIC STUDENTS REFLECT

Students in Linda Ross-Broadus' class in Pittsburgh's Westinghouse High School are preparing for an upcoming concert in which they will be performing Palestrina's "O Domine Jesu Christe." The chorus has just sung through the piece.

- Ross-Broadus:** Hear anything?
Soprano: The balance is off.
Ross-Broadus: Be specific. Tenors, what do the sopranos need to do?
Tenor: I think the bass needs to be fuller.
Ross-Broadus: Bases, were you listening to yourselves?
Bass: I think we missed the "p" on "potatum," measure 4, after A.
Ross-Broadus: But what about the intonation in the sopranos? What can you tell me about it?
Soprano: It was support for the pitch. We don't get under the pitch if we keep our heads up.
Ross-Broadus: Yes, that's the difference. O.K., let's tape it this time, and then we'll discuss it from each section's view.

(from Wolf & Pistone, 1990)

In PROPEL classrooms, reflection is often verbal as students step back and talk or write about their own or others' art work. Students write about their artistic experience in journals, or discuss their work with the teacher and other students in critique sessions and in informal critiques. Teachers respond to student journal entries informally, either in discussion with individual students, or with notes in the margins of the journal. Reflection is also supported by questions posed by the teacher.

Evidence for reflection resides in many places and reflection can occur without any words at all. Students need to be able to do more than think and talk about their work. Effective reflection is demonstrated when students act on their thoughts to create

something new, or to improve on something already created. Non-verbal reflection becomes apparent when students step back, look closely, and revise their work. It occurs as an art student sketches and erases, as a writing student contemplates a word choice, and as a musician corrects an intonation error. Since students in PROPEL work on long-term projects, they have ample opportunity to revise and thus to reflect *in the medium of the art form itself*.

**THE STEPS THAT A STUDENT TAKES IN REVISING
ARE LIKE FOOTPRINTS, EACH OF WHICH
REFLECTS A DECISION**

Patricia Stone, a student in Jean Kabbert's middle school English class at Banksville, in Pittsburgh, works and reworks the following poem. We see here the footprints of her decisions. She does not explain to us her decisions, but we can see them here in action.

Her original version, with cross-outs:

The goose strutted on the shore,
in the dried out grass
and the sun bleached straw
~~like~~ as if it knew
the reasons why
the ducklings splashed
in water by the road,
and why the truck
the truck that rambled its way
~~on~~ along the highway
stopped to gaze at
~~the stillness that was broken~~ the broken stillness,
broken only by laughter
the splish of water against more water
and the repeated
flap of the geoses'
webbed feet against
~~the soft padded ground.~~
~~The goose strutted on the shore~~
in the dried out grass.

Her final version, after much editing:

The goose strutted on the shore,
in the dried out grass
and the sun bleached straw
as if it knew
the reasons why
the ducklings splashed
in the water by the road,
and why the truck,
that at first rambled its way
along the highway
stopped to gaze in appreciation
with just remembered memories
mixed in the broken stillness,
broken only by the splish
of water against more water,
and the repeated
flap of the geoses'
webbed feet against
the soft earth.

The steps that a student takes in revising a work are like footprints, each of which reflects a decision, or a choice point. By asking students to think about the decisions implicit in their revisions, PROPEL teachers encourage students to become aware of the decision making and/or thought processes they went through as they worked. In addition, teachers can use students' successive revisions to make them aware of their nonverbal reflection.

Of course, sometimes one sees neither revisions nor reflection. The student may go straight to work and stick with the first draft. This does not necessarily lead to a poorer work. Some students need to rework their drafts on paper; others may do it rapidly, in their heads. However, in most cases, student work is improved through explicit revision and reflection. In addition, these activities build important habits of mind.

In summary, through reflection, works of art become open to investigation. The ultimate goal is for students to be able to draw on their reflective skills, without prompting, in any encounter with works of art.

Reflection is not only a critical part of learning. It is also a central part of assessment. Reflection forms the basis for self-assessment, and helps the teacher better understand and evaluate a student's work.

All domain projects require classroom support for reflection: there must be time for class critiques, for journal writing, or other reflective activities. Students ultimately understand why reflection is so important. They come to realize that reflection expands the alternatives available to them at choice points in their own work, and that it deepens their self-awareness and overall knowledge of the domain.

DOMAIN PROJECTS EMPHASIZE PROCESS

The PROPEL approach emphasizes process as well as end product. Students learn art making as a process; their work is evaluated in terms of the underlying process as well as the ultimate product. Thus, the teacher must observe evidence of process in the student's domain project. We look for evidence of process in drafts, revisions, and in reflective and perceptual activities surrounding the student's creations.

For example, domain projects typically include reflective questions designed to encourage students to think about their production and about revisions they have made or intend to make in their work. Students are frequently asked to explain decisions that they made while they produced a work and to evaluate their work from a process perspective. (E.g., Why did you make this revision? Do you think the revision strengthens the work? If so, how?) Questions can be posed in a number of contexts, including student-teacher conferences about an ongoing or completed project, peer interviews, critique sessions, and journal writing. Specific examples of questions designed to stimulate reflection are provided in the individual domain handbooks.

Our emphasis on process does not mean that we discount the importance of the final work. Completing a work requires complex decision making, judgment, perceptual skills, and perseverance. Thus, we conceive of even the final product in terms of the processes that lead up to it.

ASSESSMENT OF DOMAIN PROJECTS

Through assessment, instructional goals are reinforced. By instructional goals we refer to what the student ought to be learning. Student performance is evaluated in terms of these goals and also in terms of standards that are established through the assessment process. We partition assessment into several main components, as follows:

SPECIFYING DIMENSIONS OF PERFORMANCE

We believe that assessment should be part of — rather than just a measure of — learning. Hence, the dimensions of performance that are assessed should be important ones, even if these aspects are not easily assessed. Moreover, the student should be able to *learn* from being assessed.

Dimensions are established in several steps. First, teachers need to be clear about what it is they want the student to learn. These learning goals become the dimensions of performance on which student work is assessed. Thus, if one of the goals is for students to learn to take risks, then risk taking must be assessed.

Second, teachers, working together, need to look at a range of student work to determine the adequacy of the dimensions. They need to decide whether the dimensions they have chosen capture important features of student work, and whether there are important kinds of learning occurring that the initial list of dimensions do not capture. Examining student work may, at times, result in revising the teacher's original instructional goals.

Part of the challenge in specifying dimensions is to determine a useful level of specificity with which to describe student work. Every PROPEL assessment describes student performance along multiple dimensions. It is not helpful to the student to use vague dimensions such as "talent," but it is equally as unhelpful to be too narrow and rigid. We do not want to be so specific that each domain project's assessment is wholly unique, or that assessment dimensions cannot be used across grade levels. We have tried to develop assessment models that can be used across domain projects, yet which are also based on the specific activities of the project.

Once the assessment models have been devised, teachers make them public. The students know the model's components and the dimensions on which they will be assessed through discussions with the teachers.

SETTING STANDARDS

What constitutes technical expertise for a seventh grade writer will likely be very different from what constitutes expertise for a high school senior. Teachers and administrators who use PROPEL look at student work at different grade and experience levels and try to establish standards or expectations for high, average, and poor performance on each dimension at different stages of development. Examples of different performance levels for each age/experience group can be collected to clarify the standards by which students are to be evaluated.

JUDGING AND REPORTING WORK

Judgments and reports of student work have taken a variety of forms in PROPEL, including verbal descriptions, numerical scales, and graphs. The domain handbooks provide illustrations of these various types of judgment and reporting schemes.

Regardless of the particular form of the report, several features in PROPEL domain project assessment (as well as portfolio assessment) are stable. First, these reports are carefully linked to instructional goals. Second, every assessment report focuses on multiple features of student performance. The resulting analysis thus provides a student *profile* rather than a single summative score. Third, every assessment scheme that has been developed contains a substantive role for the student as self-assessor. In fact, a marvelous teaching opportunity presents itself when teacher and student disagree about the quality of a piece of student work.

In the next chapter, we discuss how domain projects provide a basis for PROPEL portfolios.

FIVE KEY IDEAS ABOUT DOMAIN PROJECTS

- 1. Domain Projects are composed of a series of interrelated activities that emphasize process, require revision and reflection, and are accessible to students with various levels of technical skills.*
- 2. Domain projects are open-ended projects with multiple solutions. They invite students to discover and invent their own solutions, and to explore others' solutions.*
- 3. Domain projects stress production as the central activity: reflective and perceptual activities grow out of, and feed back into, the creative process.*
- 4. Domain project work is assessed not only for the finished product, but also for the learning, growth, and increased understanding that has occurred.*
- 5. Domain projects pose problems that stimulate students to increase their role in defining their own problems to pursue.*

CHAPTER 3

PROPEL PORTFOLIOS

WHAT IS A PROPEL PORTFOLIO?

Students in a PROPEL classroom keep their domain project work in folders. Sometimes a student's portfolio consists of a selection of work from his or her folder. Sometimes the portfolio consists of all of the student's work. The portfolio contains examples of initial drafts as well as finished works, strong as well as weak works, and early as well as later works. The portfolio can also contain the student's journal, along with evidence of the resources which helped to shape the works chosen (e.g., other works of art, words or images from magazines, concert programs). In short, drafts and reflections, versions and revisions which in standard arts classes are considered less important than the finished works, in PROPEL are important pieces of evidence for understanding student learning.

Students not only *keep* portfolios but regularly *refer back* to their works and reflections. They do so by themselves, with other students, and with the teacher. As students look over their portfolios, they think about how their work has changed over time, and where they might take it in the future. Teachers often guide or facilitate this reflective process and occasionally give assignments requiring students to draw on previous work or journal entries to encourage the habit of referring to and thinking about portfolio materials.

Regular use of portfolios contributes to the development of a studio atmosphere in the classroom. This kind of atmosphere is best developed when opportunity for regular dialogue and exchange of ideas is supported.

WHAT GOES INTO A PROPEL PORTFOLIO?

PROPEL portfolios contain a number of distinctive features that are common across domains. As noted above, PROPEL portfolios include evidence of process as well as product; they include evidence of perceptions and reflections as recorded in journals and other writings, or in taped, written, or visual exercises. In addition, the PROPEL portfolio ought to include some description of the context in which the work was done so that the work can be evaluated by others in addition to the classroom teacher.

When a portfolio consists of a selection of work from the folder, there are several ways in which pieces might be selected. In some instances, students make virtually all the choices. In others, teachers have a much more directive role. Finally, we have experimented with teachers and students making choices together. There is no one correct way to make the selections and there are advantages and disadvantages to each approach. For example, the student choice model certainly encourages student

independence, but may short-change a student if he or she has neglected a significant piece of work. On the other hand, student choice often leads to student learning.

Selection in PROPEL has primarily been controlled by the student within guidelines laid out by teachers. For instance, teachers may set selection guidelines, requiring that the student include one work that is especially pleasing to the student, although the specific selection is up to the student. Using this approach, teachers have been able to guide the structure of portfolios yet still leave a great deal of choice to the student. This approach preserves the selection process as an important moment of learning. No matter how the selection is done, we believe it is important to encourage students to justify their choices. Justification reveals the students' understanding of his or her own learning (Seidel & Walters, 1990).

Cara Rubinsky from Kathy Howard's 8th grade class at Reizenstein Middle School selects a piece from her folder for her portfolio.

Students select several pieces for their portfolio in imaginative writing, including an important piece, a satisfactory and an unsatisfactory piece, and a biography of a work. Cara chose to include *Almond Cave* to supplement her other works. Cara explains why she chose this piece in the following entry:

Selection *Almond Cave*
Date 5/22/91

Reasons for Selection This piece is one that I think displays my growth as a writer over the past year. It included a lot of dialogues, a writing style which I have not really explored in past pieces. I think it shows an increased use of description and how peer revision helps my writing. It is also a piece that I ~~was~~ entered in the Young Writer's Contest, which I was a winner in. This has greatly increased my confidence as a writer. I feel that this piece is an integral one in the ~~of~~ scope of my writing.

The contents of a PROPEL portfolio are described below.

CONTEXTUAL INFORMATION

- * ***Cover sheet with student's name, class name, and date***

- * ***Annotated table of contents***

The table of contents provides a brief description of the contents of the portfolio. This is helpful because it provides a context for the reader. The contents can include a description of the projects and the time dedicated to each, along with any other relevant background project information.

- * ***Student background information***

An entry record such as a questionnaire, for example, aimed at documenting the student's background in the domain, attitude about the domain prior to taking the class, and interests within the domain can be illuminating.

STUDENT WORK AND REFLECTION

- * ***Selected drafts and final works, accompanied by journal entries***

Selection of student work can be made using different criteria, some presented below (Camp, in press-b; Camp & Levine, 1991). A PROPEL portfolio may include selections based on only some of the criteria listed here, or on entirely different ones. The critical point is that selections should be consistent with what it is that the teacher wants the students to learn.

(a) **Evidence of change or growth:** Students select pieces that together exhibit change or growth, along with reflective discussion by the student. The selection of two works helps students build an awareness of growth.

(b) **Evidence of decision making:** Students select an entire project, including drafts, taped rehearsals, sketches, etc., along with reflections that occurred during and after the work. These should be placed in the order in which they were produced. The student can provide comments on the thinking process underlying the successive changes and additions. This gives the reader a greater sense of the process behind the construction of this work. Selecting such a "biography of a work" helps students think of art making and performing as a decision-making process.

(c) **Evidence of experimentation:** Students select a successful and/or unsuccessful experiment, with comments on what the student discovered in the process, where the student took a risk, or what the student learned from "mistakes" made. The selection process enables students to see that many of their attempts are original.

(d) **Evidence of self-evaluation:** Students select a satisfying and less than satisfying piece, along with a reflective discussion of the reasons behind the selections. These choices help students build standards of evaluation.

(e) **Evidence of personal style:** Students select an important piece that the student feels best represents him/herself as an artist. This builds a sense of an emerging personal style.

THE ROLE OF JOURNALS IN PROPEL PORTFOLIOS

Each piece selected for the PROPEL portfolio should be accompanied by some form of reflection. The reflection may be an oral discussion on audiotape or may be a written journal entry justifying the selection. Other forms of written reflection aside from the journal can also be included.

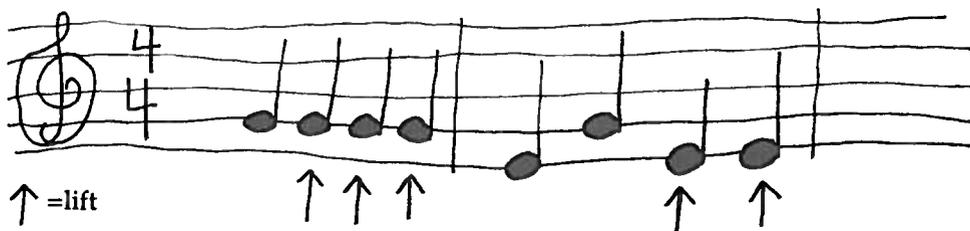
Journals in PROPEL have been used in a number of ways. To a large extent they have been a means of recording the more informal aspects of artistic learning. For example, students may include references to works they have seen, read, or heard, along with their reactions. They may include artifacts from the popular culture (e.g., magazine ads) that they feel are relevant for their work. And, of course, students include reflections about their work in journals.

Journals have also been used as a vehicle for students and teachers to engage in informal dialogue. Teachers periodically read student journals and respond to student writings and other entries. Teachers gain valuable insights about students from the journals, and students benefit tremendously from teacher feedback.

These dialogues can build a trust between student and teacher that is all too rare in school. Journals should be treated as opportunities for honest exchange about developing ideas. Dialogues also provide important evidence for assessment in so far as they reveal students' understandings of their own learning.

A PAGE FROM A PITTSBURGH STUDENT'S JOURNAL IN MUSIC

When the altos have repeated notes, we have a tendency to go flat. In order to correct this problem we have to lift on the notes that repeat. Starting with the second note. Usually, the first note is in tune. For instance:



If necessary, move body. But just lift with voice slightly to get more in tune. Just like my trumpet, it has to do with the way the air comes out. Either tighten the air or the lip. Well, in this case, change the air.

—Celeste Humphries, Westinghouse High School Chorus

HOW SHOULD PROPEL PORTFOLIOS BE USED?

PROPEL portfolios are more than simply storage bins. They are a means for students and teachers to explore learning, to observe development, and to ask each other important questions about the creative process (Camp, 1990, in press-a, in press-b; Camp & Levine, 1991; Gitomer, Grosh & Price, in press).

Students in PROPEL regularly use their portfolio as a source of ideas or as a basis for observing their own development. Towards this end, PROPEL teachers have used a number of successful techniques, including allowing students to evaluate some portion of their own work. Students have evaluated their portfolios individually, with peers, or with teachers. Students can look at their portfolios for evidence of learning, evidence of continuities (e.g., personal style, themes) and change (e.g., moving from realistic to impressionistic drawing), and evidence of challenges they have chosen for themselves. Typically, PROPEL classrooms have regular, informal portfolio reviews, as well as occasional, more structured reviews at least once per term.

Teachers can also help students use portfolios as a stimulus for learning by looking through the portfolio with the student and asking questions about process, goals, etc., pointing out strengths and weaknesses in individual pieces, and helping students recognize and articulate the decisions they made as they worked. Through this kind of questioning, the student learns how to look at work, how to ask questions about work, and how to evaluate work (Howard, 1990). Students can also use their portfolios when they interact with classmates, in peer interviews.

**"When you look at all you wrote
this year, you can see yourself
learning."**

**--Student in Kathy Howard's
English class, Reizenstein Middle
School, Pittsburgh**

Classroom conditions inevitably influence the types of portfolio interactions that are effective. For example, individual conferences between teacher and student are more viable in classrooms with a small number of fairly independent students. Written or group activities around portfolios may be more practical with larger class sizes.

It is also important to stress that one portfolio review cannot provide information on all aspects of student learning. We recommend that teachers and students pursue one or two issues in any one conference, rather than touch on too many issues which may overload the student.

POTENTIAL BENEFITS OF KEEPING A PROPEL PORTFOLIO

In the day-to-day progress of classroom life, teachers see much of what is revealed in portfolios, but these are fleeting images. PROPEL portfolios reveal moments of insight, the discovery of a question, the understanding of another's perspective in a group project, or the eventual mastery of a complex skill after days of frustration (e.g. Camp, 1990). These moments are often lost in the day to day activity of the classroom. Students may have little perspective on these learning moments, and may fail to appreciate why they should be preserved. Furthermore, parents and administrators who are not regularly in the classroom have no access to these important learning occasions.

Traditional forms of assessment do not focus attention on these details of classroom life. At their best, PROPEL portfolios depict development and capture process, and thus they offer a way to examine what students have really been up to in their work. Moreover, PROPEL portfolios make clear to students and teachers that these moments are valuable parts of learning (Seidel & Walters, 1990).

The tangible portfolio, together with the activities around the portfolio, set the stage for a radically different classroom structure that we have called a "portfolio culture" (Gitomer, Grosh & Price, in press; Duschl & Gitomer, in press).

1. Students become involved in long-term projects

Keeping a portfolio and tracking one's own progress stimulates students to carry out projects over significant periods of time. Students begin to realize the value of working and reworking, and of pursuing an artistic issue from various perspectives.

2. Students gain awareness of their development as learning artists

By keeping portfolios, and looking over them regularly, students realize that their works have developmental histories — from initial stages through intermediate paths taken and rejected, to the final product. They also come to see continuities as well as discontinuities in their earlier and later works. Students thus develop a sense of what it means to gain mastery in a domain. As a student in Kathy Howard's middle school English class said, "When you look at all you wrote this year, you can see yourself learning."

3. Students gain awareness of their development as individuals

Students become aware of what is unique about themselves. They realize the themes that concern them, their styles, their strengths, and their weaknesses.

4. Students become active learners

Students come to think of themselves as active learners who direct their own art making, rather than passive learners in an art class

who simply carry out the teacher's lesson plan. Students set goals for themselves based on their reflections on how they have evolved as artists. We do not expect this kind of a change to occur overnight, nor even over the span of one course. Rather, this kind of change occurs gradually, as teachers develop a classroom atmosphere which encourages research, dialogue, and experimentation, and students begin to internalize reflection and perception as they engage in production. In PROPEL classrooms, many students will go beyond the assigned tasks and even develop projects on their own.

Barbara Albig, visual arts teacher at South Vocational Technical High School in Pittsburgh, gave the following description of the portfolio culture developed in her PROPEL classroom.

As the students become more comfortable with the process of production, reflection, and perception, their activities were student-generated rather than totally teacher-directed. The students experienced increased responsibility in terms of making decisions for themselves. Students became actively engaged in critiquing each others' progress and productive results. They would seek each others' advice in problem solving. As this process became more sophisticated they became more motivated to ask themselves questions that generated new ideas or possible avenues for exploration. They began to monitor and define their own artistic growth. Through the portfolio process they looked back to effect new learning and encourage redevelopment. Learning became layered rather than isolated to one activity. Visual literacy and verbal artistic communication improved. Finally, and most importantly, the students had improved self confidence. They viewed themselves as artists, not just technicians. (Portfolio, February, 1989, p.3)

ASSESSMENT OF PROPEL PORTFOLIOS

The outcomes of developing portfolio assessment may differ from domain to domain and from school to school. Portfolios may vary in content, in assessment dimensions, or in reporting format. What remains consistent however, is the process by which all of these details are defined. In this section, we introduce the general processes that we feel are necessary for successful portfolio assessment. These processes are similar to those described in Chapter 2 for domain project assessment. Specific characteristics of visual art, music, and writing portfolios are presented in the domain handbooks.

DEFINING ASSESSMENT DIMENSIONS

An assessment framework can help to organize the information in a student's portfolio in terms of the most important characteristics of student performance. Defining what these characteristics are is an extraordinarily difficult (and open-ended) task that, in the end, is extremely rewarding because it helps participants to ask, "What

matters?" The critical point is that the dimensions on which students are to be assessed should be closely tied to the teacher's instructional goals.

As students become more directly involved in the assessment process, we believe it is important that they share in defining the dimensions on which their work is to be assessed. Taking an active role in the defining process will help students to understand and internalize the dimensions of assessment which will in turn help to deepen their knowledge of the domain.

A PROJECT ZERO ENCYCLOPEDIA OF DIMENSIONS

Researchers at Project Zero, along with Boston-area PROPEL teachers, have developed a list of dimensions along which student portfolios in any of the three domains can be assessed. This list is best thought of as an encyclopedia of dimensions (though in no way do we claim it to be comprehensive) from which teachers can select, modify, add to, or delete. A great deal of work went into these dimensions. We often vigorously disagreed on what we thought ought to count as the central dimensions of learning, and what ought to count as evidence. We even disagreed about whether any list should be presented at all, or whether each teacher should make up his/her own from scratch. In fact, some researchers still feel uneasy about a general assessment scheme that cuts across domains, and prefer to let teachers develop assessment schemes specific to their domains. Nevertheless, we decided to publish this collective list that teachers could use as a framework to develop their own.

There is nothing fixed about these dimensions. They might be expanded, reworded, or altered in any number of ways. The important point is that the dimensions used should reflect the teacher's goals, as well as the kinds of activities engaged in by practitioners in the domain.

The dimensions on which performance is assessed in our list are grouped under four major headings: *Production*, *Perception*, *Reflection*, and *Approach to Work*. Under each of these headings are several finer dimensions. If the evaluator is the classroom teacher, the teacher's observations of the student's behavior in class can enhance the judgment. If the evaluator is someone other than the classroom teacher, the assessor must rely only on the portfolio. The dimensions which are listed under the Production heading can be fairly assessed by someone other than the classroom teacher. However, the dimensions under the other three headings are best assessed by the classroom teacher, or by the teacher and student together, as the evidence for these dimensions must come in large part from classroom observations of the student's working style and participation in critique sessions.

What follows is the list of dimensions, worded so that they cut across all three domains. In the domain-specific handbooks we present domain-specific sets of dimensions generated by Pittsburgh teachers, out of which this more general "encyclopedia" of dimensions developed.

PROJECT ZERO

ENCYCLOPEDIA OF ASSESSMENT DIMENSIONS

I. PRODUCTION (THINKING IN THE DOMAIN)

The evidence for assessing work on the production dimension lies in the work itself. Thus, these dimensions can be evaluated by an outsider looking at drafts and final works, as well as by the classroom teacher.

- * ***Craftsmanship.*** Student is in control of the basic techniques and principles of the domain.
- * ***Pursuit.*** Student develops works over time, as evidenced by revisions which are productive and thoughtful. Student pursues a problem in depth. Student returns to a problem or theme from a variety of angles.
- * ***Invention.*** Student solves problems in a creative manner. Student experiments and takes risks with the medium. Student sets own problems to solve.
- * ***Expression/Point of View.*** Student expresses an idea or feeling in the work (or in the performance of the work, as in music) in a powerful, moving way. Student is engaged in more than just technique: student is trying to “make a statement,” or put his or her own “personal stamp” on the work.

II. PERCEPTION ("SEEING" IN THE DOMAIN)

The evidence for assessing a student's perceptual skills comes from the student's journal entries, from the student's comments made in critique sessions, or from perception-oriented activities within a domain project or classroom discussion, as well as from careful consideration of the student's art work.

- * ***Capacity to Make Discriminations in Works from a Wide Variety of Genres, Cultures, and Historical Periods.*** Student can make fine discriminations about works in the domain. (E.g., student can see stylistic similarities and differences among African masks; student can see similarities and differences in functions of art objects by coming to understand the cultural context in which they were made.)

- * ***Awareness of Sensuous Aspects of Experience.*** Student shows heightened sensitivity to physical properties of the environment related to the domain in question. (E.g., responds to visual patterns made by shadows, to sounds of cars honking in different pitches, to patterning of words on a grocery list, etc.)

- * ***Awareness of Physical Properties and Qualities of Materials.*** Student is sensitive to the properties of the materials used. (E.g., textures of different papers; timbres of instruments; sounds of words.)

III. REFLECTION (THINKING ABOUT THE DOMAIN)

The evidence for assessing reflection comes from the student's journals and sketchbooks, from observations of the kinds of comments that the student makes in class, and also from careful consideration of the student's art work.

* ***Ability and Inclination to Assess Own Work.***

Student can evaluate own work and does so regularly. Can articulate and defend perceived strengths and weaknesses of own work. Can engage in critical dialogue and production-oriented "shop-talk" about own work.

* ***Ability and Inclination to Take on Role of Critic.***

Student has developed the ability and tendency to evaluate the work of others (peers, published artists). Student has a sense of the standards for quality work in the domain. Student can engage in critical dialogue and production-oriented "shop-talk" about others' work.

* ***Ability and Inclination to Use Criticisms and***

Suggestions. Student can consider critical comments about own work, and can incorporate suggestions where appropriate.

* ***Ability to Learn from Other Works of Art Within the***

Domain. Student can use work by artists for ideas and inspiration.

* ***Ability to Articulate Artistic Goals.*** Student has a

sense of self as an artist, as evidenced by the ability to articulate goals for a particular work, or more general artistic goals.

IV. APPROACH TO WORK

The evidence for assessing a student's approach to work comes from observing the student in classroom interactions, the seriousness with which a student pursues a project, the amount of work done outside of class time, and the student's journal entries. Thus, a student's approach to work can only be assessed by the classroom teacher.

- * ***Engagement.*** Student works hard and shows interest. Student meets deadlines. Student shows care and attention to detail in the presentation of the final product.
- * ***Ability to Work Independently.*** Student can work independently when appropriate and incorporate learning from life experiences.
- * ***Ability to Work Collaboratively.*** Student can work collaboratively when appropriate.
- * ***Ability to Use Cultural Resources.*** Student knows where to go for help: books, museums, tools, other people.

Many students in Arts PROPEL classes have indicated that such a multidimensional system provides them with detailed, useful information about their work that helps them guide their future efforts. They like the information such assessment provides. At Grey Junior High, in Acton-Boxborough, Massachusetts, students in Whitney Davis' art class comment on self-assessment using a PROPEL-style multidimensional assessment system:

It was easier because you're not just looking at everything at once but at little pieces.

Rather than saying, 'I will put more effort into it,' you can have a specific area that needs improvement.

It's nice to be able to write something for each category. Last year it was too general.

STANDARD SETTING

An assessment system must provide a basis for distinguishing work that varies in quality on each of the dimensions determined as relevant. We should be able to ask whether a student portfolio meets or exceeds expectations on a particular dimension for middle or high school. Hence, a standard setting process must be incorporated into the system.

Standard setting requires close study of a pool of exemplars of different levels of student work. Teachers need to look at a range of student work that exemplifies various levels of quality on specific dimensions, and begin to articulate what is meant, for example, by high quality inventiveness, average quality craft, or low quality critical ability. It is important that multiple exemplars be available, since implicit in the PROPEL portfolio model is the notion that there are many ways to pursue artistic problems.

It is also important that standards have credibility outside the particular institution in which they are developed. A publicly accountable assessment system should be able to say "not only do we think this is good work, but so do others outside of this system." Such a publicly accountable system requires occasional checking with respected and knowledgeable outside assessors (such as practitioners in the domain) to ensure that standards are generally agreed upon (Gitomer, in press).

FORMAT OF ASSESSMENT REPORTS

For each dimension, students might receive either a quantitative score, a qualitative comment, or both. While quantitative scores may be more efficient, qualitative descriptions can be more informative. The tradeoffs in costs and benefits among different models have to be carefully considered.

Numerical scores may be useful for two reasons. First, they allow reliability in scoring to be checked by conventional psychometric methods. Reliability can be checked by having student work assessed independently by the classroom teacher and by a teacher from another classroom. And second, numerical scores are also practical for teachers who have large numbers of students.

Teacher comments have an equally if not more important place in assessment. Teacher comments on specific dimensions of learning can be as rigorous and precise as numerical scores, and may prove more effective because they are more informative to the student and to next year's teacher.

The report should provide some indication of the reference group against which the student is being assessed. That is, when we speak of high quality, are we talking of high quality relative to other students of the same grade, relative to past performance of the student, relative to expectations for high school seniors, or for accomplished artists? PROPEL teachers have found it difficult to judge work of high school and middle school students together, as it is difficult to judge such disparate work with a common reference. Part of the assessment process is to determine what the reference group should be.

WHO IS THE AUDIENCE FOR PROPEL PORTFOLIO ASSESSMENT?

There are five main audiences for any assessment: students, teachers, parents, administrators, and larger educational institutions.

Students, teachers, and parents will use portfolios to try to understand a student's progress in school. Portfolios provide an excellent opportunity for conversation between student and teacher, or student and parent, or even student and student. In addition, teachers pass on a student's portfolio assessment to the next year's teacher.

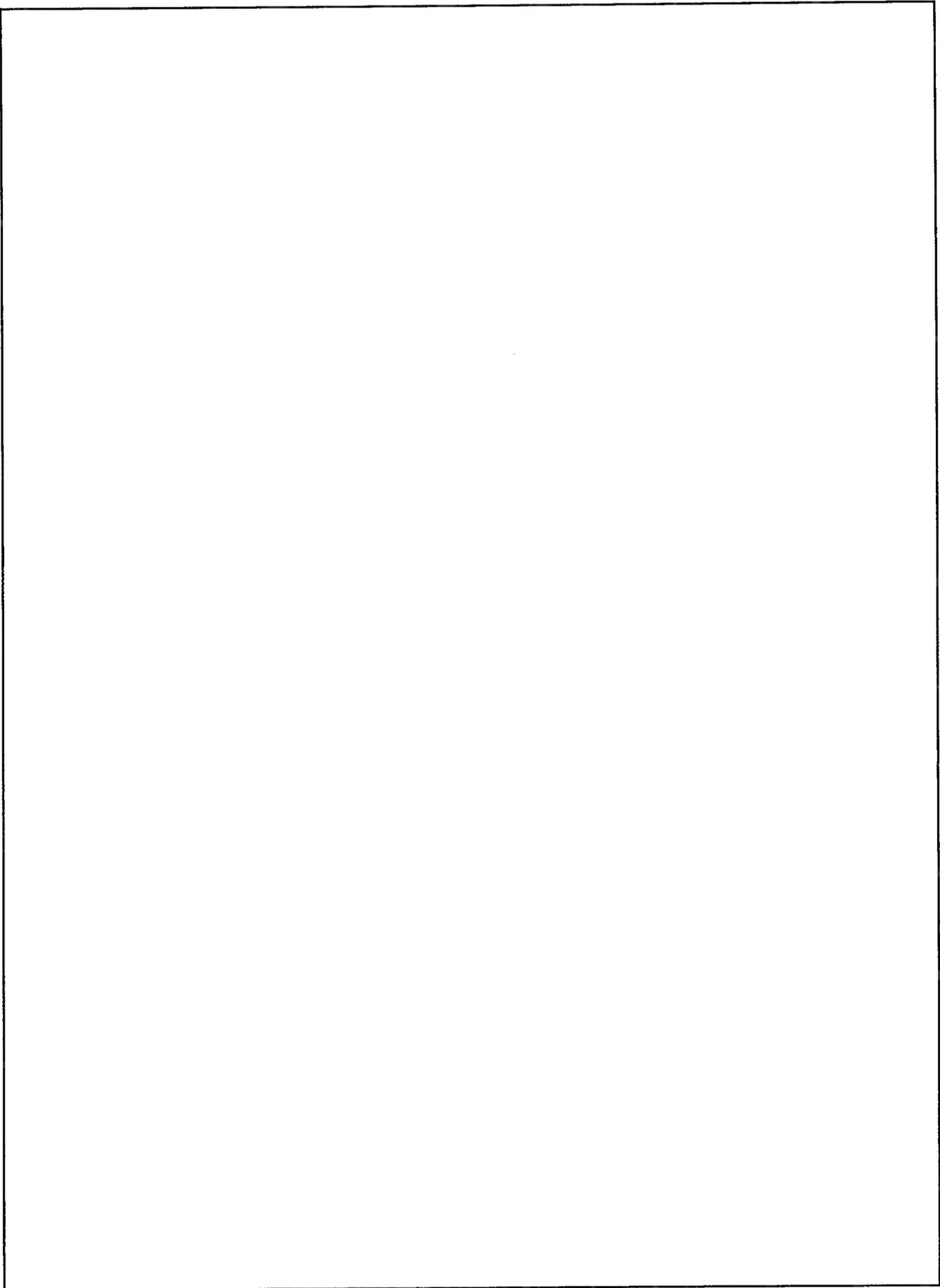
Portfolios are important in conversations among teachers. As teachers engage in collaborative review of student work, they share insights, opinions, and standards. These sessions are often enriched when teachers with experience with different age groups and school settings come together. In these conferences, teachers develop the skills of clinical judgment that inform every reading and response teachers make to their students' work (Seidel & Walters, 1990; Camp, 1990).

School administrators may use a sample of portfolios as measures of the effectiveness of instructional programs. PROPEL portfolios reflect student abilities that cut across subject areas, such as the ability to think critically, the ability to ask interesting questions, the ability and willingness to pursue a question and sustain a project over time, or the ability to collaborate. A sample of portfolios, assessed on such dimensions, can provide school officials with information about students' accomplishments in these areas. Finally, institutions use assessment information to make policy decisions about the educational system.

FIVE KEY IDEAS ABOUT PROPEL PORTFOLIO ASSESSMENT

- 1. *Assessment of portfolios reveals a student's particular profile of strengths, weaknesses, and "chosen challenges."***
- 2. *Portfolio assessment is inseparable from learning and thus occurs at several points in the term rather than only at the end of the school term.***
- 3. *Assessment of portfolios recognizes student growth. Assessment provides a picture of development by comparing student work from at least two points in time.***
- 4. *Students are central in assessment of portfolios. Student reflection is a form of self-assessment that can itself be assessed.***
- 5. *Portfolios are most effective when students are doing authentic work in a domain, work that is close in form and process to that done by adults in the domain. Portfolios are most revealing when students are engaged in sustained projects that call for original thinking. Engagement and inventiveness seem to develop most readily in classrooms in which students are given choices about the focus and direction of their work.***

(from Seidel & Walters, 1990)



CHAPTER 4

IMPACT OF ARTS PROPEL

CHALLENGES OF PROPEL

PROPEL is not a system that can be immediately implemented in every classroom. It is an approach that requires significant change in teaching and assessment practices. Teachers wishing to adopt PROPEL need considerable inservice professional development time, as well as ample time and resources for portfolio collection and maintenance, for on-going individual student-teacher conferences, and for multi-dimensional assessment. Thus, PROPEL teachers need the strong support of their district.

We describe below some of the challenges PROPEL teachers may encounter, and how they might be solved.

FINDING TIME

First and foremost, PROPEL is time-intensive. Assessment of students on multiple dimensions, engaging students in one-on-one assessment conferences, holding frequent in-class critique sessions — all take time. Teachers and students need support and flexibility to adjust priorities to provide the time needed.

The long-term projects that are central to PROPEL, and the individualized attention needed for assessment, means that PROPEL works best when teachers are given release time for assessment, and for assessment conferences with other PROPEL teachers. PROPEL also works best when classes meet regularly and frequently, and last at least a half a school year.

Obviously, more time for teacher-student interaction is possible with smaller class sizes. Nevertheless, much good can be done under less than optimal circumstances. Teachers need to take advantage of new sources of portfolio readers and consider various forms of interaction. Several approaches with notable benefits have been:

*** *Parents as readers***

Teachers with large numbers of students may use parents as portfolio readers. Pittsburgh teachers such as Kathy Howard have sent home student portfolios and have provided parents with a set of questions to pose to their children about the work. Parents record their children's responses and send them back to the teacher. Parents thus learn about their children's learning and are given a sound reason for entering into a dialogue with the student.

* ***Classmates as readers***

Teachers may ask classmates to interview each other about their portfolios.

* ***Portfolio conferences while students work independently***

Teachers may designate an entire week as portfolio review week. During this time, teachers hold a brief (ten minute) portfolio conference with each student while the rest of the class works independently. Karen Ernst, a former eighth grade language arts teacher in Westport, Connecticut, used this method and told us that it took one week to talk to 80 students individually, while the rest of the class read silently. In her words, "It takes an enormous amount of time. It's the most exhausting thing I've done in teaching, but it's the most valuable."

HELPING STUDENTS TO REFLECT AND WRITE

A second challenge is to find ways to present PROPEL to students so that the acts of writing and thinking are important and meaningful to them and useful for their own studio work. Some Pittsburgh teachers have found that if they model these activities themselves (by keeping a journal, and sharing it with students), or if they model reflective questioning in class discussions and student interviews, or if they provide examples of artists' journals, students can come to realize that thinking and writing about art making is integral to the process of art making and performing. Teachers also need to consider the implications for instruction contained in students' reflections. Though writing is one manifestation of reflection, talk and revision are also evidence of reflective thought.

SELECTING ASSESSMENT DIMENSIONS

A third challenge is to develop a set of assessment dimensions that can be shared within an educational institution. This process demands intensive discussion, compromise, and understanding of others' points of view. It is a time consuming process but one that results in the professional development of all participants.

ACHIEVING RELIABILITY IN SCORING

A related challenge is reaching agreement about HOW to assess works on particular dimensions. This is done by the process of standard setting. Teachers look at a range of student work and reach a consensus about what defines quality on some dimension. However, arriving at a consensus is not easy to do. Taste and cultural values may clash, and pet peeves may interfere. There are no easy answers to this problem. Teachers must be willing to spend time developing informed clinical judgments. Development is best done in collaboration with other teachers looking

together at a pool of student work. Teachers also need to accept the fact that there is no hard and fast way to check whether their judgments are right or wrong. One can simply aim to develop judgments that one can defend, and that others can agree on with some degree of reliability.

VOICES FROM TEACHERS, ADMINISTRATORS, STUDENTS

In spite of, and maybe because of, the above challenges, students and teachers in Pittsburgh's PROPEL classrooms have found PROPEL to be stimulating in many ways. Many teachers who have worked with us to develop PROPEL report that their teaching has been considerably altered. A number of their students have testified that they have become more engaged and interested and thoughtful. Below are a few comments by teachers and students in PROPEL who have felt that PROPEL changed them in important and beneficial ways.

WRITING

Kathy Howard, Middle School Language Arts Teacher, Pittsburgh:

We knew we wanted to move away from work sheets, towards literature and towards writing. We were writing curriculum to do that. But the work at Reizenstein with PROPEL has made it possible to see what that would look like. Especially what it would look like if you had higher expectations for all students, not just scholars. We hope that the reading and the writing and portfolios become what every child meets up with.

**"It's takes an enormous amount of time.
It's the most exhausting thing I've done
in teaching, but it's the most valuable."**

**--Karen Ernst, Language Arts Teacher,
Westport, Connecticut**

Arla Muha, High School Writing Teacher, Pittsburgh:

Arla Muha had forty experienced PROPEL students in her twelfth grade classroom. She compared them to her other students, who had not been exposed to PROPEL the previous year:

The Arts PROPEL participants are more competent at peer evaluation than the other students. They also seem more confident in their ability to peer evaluate. (Portfolio, February, 1989, p.3)

Middle School Student in Kathy Howard's English class, Pittsburgh:

Miss Howard gives us more freedom to write now. Instead of telling us what to do, she gives us a good list of questions or lets us choose our own. We are more and more the decision makers.

MUSIC

Linda Ross-Broadus, High School Music Teacher, Pittsburgh:

It is the opposite of the way I used to teach. I'd tell them everything that should be done and how to correct it. Sometimes now I forget and revert, especially if we are pressed, with a concert coming up. But recently, we were having trouble. I couldn't get a good sound from them. I went over and over the section, dictating to them. Then I remembered and I said, "Let's stop. If you were critiquing this, what would you say? What could we do to improve?" I gave them a few minutes, and then we went back and did the same section over again. The difference was phenomenal. They had engaged their own thinking processes, and they were problem solving. They were being musicians themselves. (Wolf & Pistone, 1990)

This past year, the Harlem Boys Choir gave two concerts locally and I took my choir to hear them both times. The first time we went, the students had no experience with critiquing their own performances. Of course, we enjoyed the concert, but that was it. The second time, in between songs, they were saying to me, "Did you hear the intonation, did you hear the diction?" It was as if I was standing beside other professional musicians. I couldn't wait to tell them what I had noticed. (Wolf & Pistone, 1990)

Louise Gray, 7th Grade Music Teacher, Pittsburgh:

...generally it seems as if PROPEL students are more advanced [musically] than other students. The PROPEL students received a very intense and concentrated unit on working and manipulating musical material. Whereas abstract concepts might initially pose stumbling blocks in the learning process, the Arts PROPEL students are ahead of the game in that they have overcome these problems last year and have [improved] access to the music. (Portfolio, February, 1989, p.3)

Senior in Linda Ross-Broadus' PROPEL music classroom:

Nothing's easy. That makes it enjoyable. It's a challenge.

VISUAL ARTS

Norman Brown, High School Visual Arts Teacher, Pittsburgh:

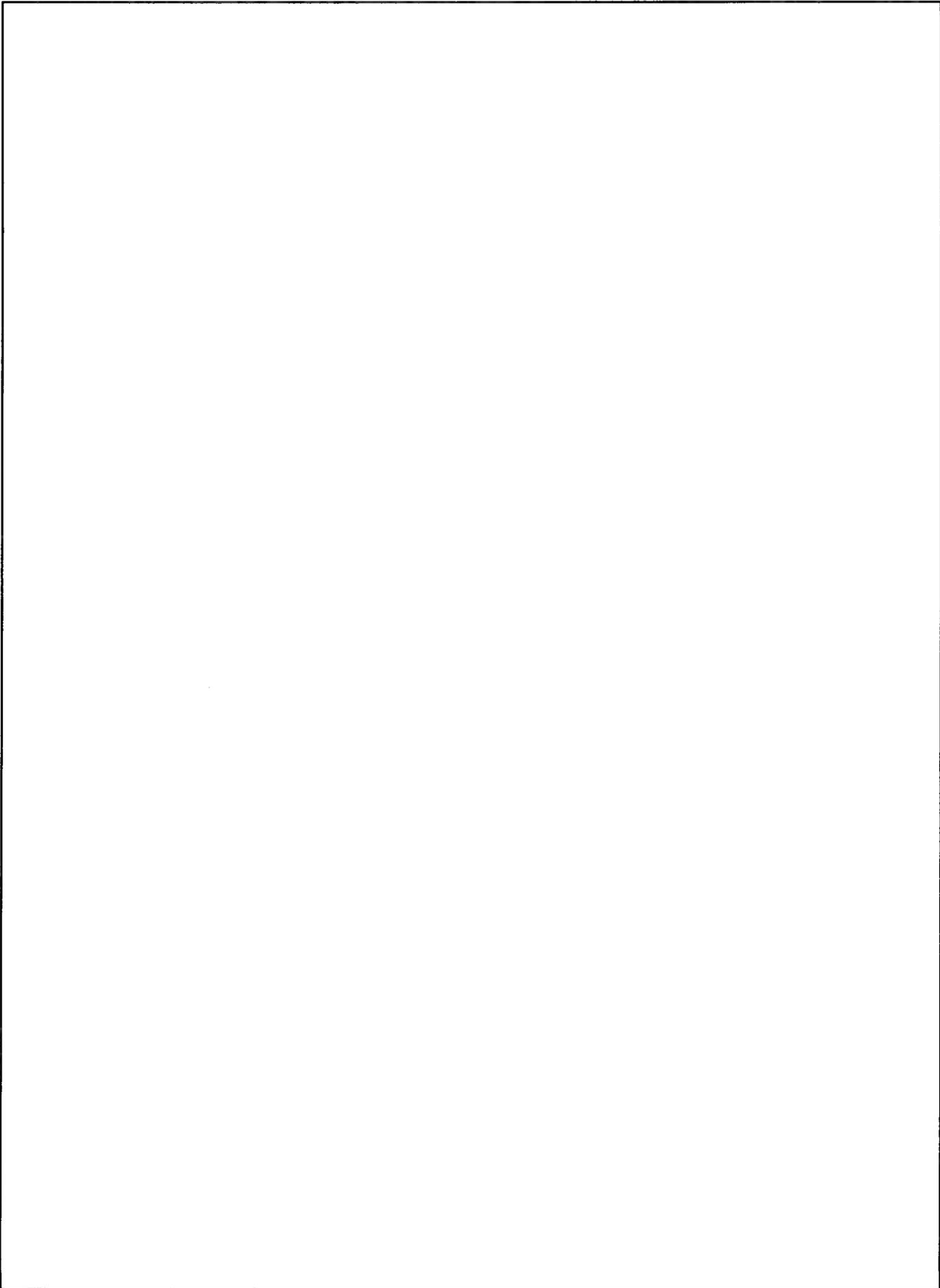
One of the things that has changed since PROPEL is that I really achieved a studio situation in the classroom...I found students can look to other students for directions instead of just the teacher. I don't always have to be the only answer or solution.

Al Ferreira, High School Photography Teacher, Cambridge, Mass.:

One of the biggest problems I've had...has been how to give students feedback about the quality of their work. I was always very hesitant in grading art work, like putting a value judgment on that personal experience. [When] I got involved with the Arts PROPEL project...I realized that they had developed a system of looking at the whole creative process from a variety of different perspectives. With this kind of assessment process, you could sit down with a student and discuss many points — their perception of their work, their revisions, their craft...As a teacher you can understand what the students were going through...

I think Arts PROPEL has helped to make the assessment and evaluation process a lot easier. It's done in a non-judgmental way. That's what makes me so excited about this project. It has helped to provide me with a dialogue where I can really be quite critical without being damaging. Because it is broken down into different aspects of student learning and experience, it makes it easier to talk about the difficulties they might be having. It makes you slow down to appreciate the process.

The PROPEL portfolio allows students to keep every piece of work so that they can spread their work out and look at what has happened, to see where they've been. They see that their experience truly has been developmental. They're less afraid of talking about their work from that point of view...The process is far more important than the product.



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