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ABSTRACT

Program Analysis and Monitoring (PAM) in Writing is a decision-support tool which provides the principal with an informative report, the Program Analysis Report, that identifies needs and suggests solutions to problems in educational writing programs. The Report relates information on student achievement in writing to information on how resources are distributed and used for classroom instruction. It provides the principal with an agenda for assessing program needs and determining appropriate responses to improve a schools' writing program. A holistic scoring system based on a scale of zero to 100 and using 100 percent model answers was selected. Five writing assignments were administered in May and June of 1981 to several thousand Putnam, Suffolk, and Westchester County third and sixth grade students. Two reviews resulted in the selection of four responses per grade level for each assignment to be used as model answers in rating. This paper includes illustrations of the PAM in Writing Monitor Report and actual data which appears in the PAM Program Analysis Report. (PN)

# Program Analysis and Monitoring (PAM) in Writing: Practical Implementation*

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Program Analysis and Monitoring (PAM) in Writing: Practical Implementation

## Program Analysis and Monitoring--Rationale

Whether or not it is now a cliché to say that the public has become unprecedentedly critical and demanding of our schools while simultaneously tightening the educational purse strings, it is nonetheless incumbent upon those in the business of educating children to improve education wherever possible and to see that schools perform to their maximum capabilities.

To assure such improvement and performance requires a clear perception of the educational (i.e., instructional) process, an understanding of the locus of responsibility for the implementation of instructional programs, and the willingness and ability to assume and act on that responsibility.

If there are shortcomings in substantive instructional practices (e.g., purveyance of inaccuracy, confusion of procedures, subversion of skills), teachers may themselves need remedial instruction. The diagnosis of such shortcomings would entail observation within the classroom. But such misinstruction would of course be rare. Where such problems are minimal, students' acquisition of the basic skills involved in reading, writing, and arithmetic (and by extension the basic concepts and skills in such subjects as social studies and science) is a matter of exposure and practice. This involves time. To the extent that sufficient time is devoted to exposure and practice in the use of a skill or concept, acquisition will occur. Rates of acquisition vary, but all learners require some time for acquisition. The most effective school is the one which optimizes acquisition time for the greatest proportion of its students.

It behooves schools, then, to pursue within-classroom practices which improve the way time is spent. Such practices of course exclude consideration of factors external to the school or beyond the school's control. The school, after all, serves the community and is in some sense an extension of that community. It is therefore vain to expect the school to transform the community. But it is not vain to expect self-transformation by the school. To do so, however, requires useful and timely information and the capacity to use that information.

That capacity entails someone in a position of responsibility for the school's instructional programs. In a typical school that person is not a teacher; it is usually the principal, a department chairman, or a subject area supervisor or coordinator. The reason why such a person is only rarely a teacher is clear: The teacher's perspective--not to mention physical and temporal restrictions--is his own classroom. No matter how excellent a given teacher's classroom practices, nothing in the nature of classroom teaching assures the permeation of a teacher's influence beyond his own classroom. There is no assurance that the students of an excellent teacher would encounter teaching excellence in other classrooms or will encounter it in subsequent years. Even assuming an excellent teacher possessed of a reformer's zeal, there is scant opportunity for any teacher to evaluate another teacher's performance. Further, even given such evaluative opportunity, one teacher is not usually in a position to ask or require another teacher's reform.

Someone, then, usually the principal and almost never a teacher, must be in the position of program manager. Someone must have access to or the capacity to acquire information about the program plus the authority to act, to make decisions in response to such information and to require the implementation of those decisions. It must be emphasized that mere occupation of such a position is not equivalent to management of a school's instructional program: Management involves the willingness to carry out the functions implicit in the position. This raises two issues. The first is the issue of willingness and the second is the issue of capability. To some extent willingness to be a program manager, to do the job, is a matter of personal temperament, character, experience, and motivation. Where the first three of these militate against or discourage action, where, in other words, there is no intrinsic motivation in the person, external motivation will be required, for instance in the form of encouragement from the school board or central administration. But motivation may exist uncoupled with any awareness of how to manage educational programs. Here is where willingness alone is insufficient. Helpful tools and/or training are also required. One such tool is PAM--Program Analysis and Monitoring--in Writing.

## PAM in Writing and Decision-Support

PAM in Writing is a decision-support tool which provides the principal with an informative report, the Program Analysis Report, that helps identify needs and suggests solutions to problems in writing programs. The information provided by this report enables the principal involved in program management to make programmatic decisions. For the principal less involved in program management but interested in acquiring and developing management skills, the PAM Program Analysis Report is useful in building awareness of how to think about the instructional program.

The PAM Program Analysis Report is timely as well as useful. Since the report is available in the fall or winter, and then again in the spring of the year, it can be used for both formative and summative evaluation. For example, if the fall report reveals potential problems in the program, steps may be taken immediately to specify the problem as exactly as possible and then to attempt to correct it with appropriate program modifications. Receipt of the spring report is an opportunity to determine the efficacy of earlier corrective measures as well as to evaluate the year's efforts.

The utility of the Program Analysis Report lies in the nature and juxtaposition of its information. The report relates information on student achievement in writing to information on how resources are distributed and used for classroom instruction.

DISTRICT
BUILDING
GRADE
DATE

| | Class 1 | 2 | 3 | 4 | 5 | 6 | Average |
|---|---|---|---|---|---|---|---|
| PUPIL ACHIEVEMENT INFORMATION | | | | | | | |
| PROGRAM | | | | | | | |
| RESOURCES | | | | | | | |

PAM PROGRAM ANALYSIS REPORT--BASIC STRUCTURE

For PAM in Writing, the achievement information in the Program Analysis Report is of two types: average holistic scores and diagnostic indicators of classroom needs. Both indicators are based on the PAM Writing Test. This test requires students to respond to one writing assignment. Student responses are holistically scored by two raters who compare the responses to model (100%) answers. There are five alternative PAM writing assignments with, typically, four model answers for each at grades 3 and 6. Thus, students in grades 3 and 6 respond to identical assignments, but their responses are rated against model answers for their own grade levels. The average of the two raters' assessments is the student's score.

Diagnostic indicators are also based on the PAM Writing Test. Indicators are expressed as the percent of students in a class with instructional needs in any of five categories of writing-related skills: Rhetorical Task, Relation of Parts to a Unified Whole, Word Choice, Syntax, and Mechanics. Classroom diagnostic indicators are derived from the classroom teacher's assessment of individual student weaknesses or needs.

Schools also have the options of receiving student performance information based on Statewide writing measures. These include The Preliminary Competency Test (for grades 8 and 9) and an elementary-level test which is presently under development. Additional diagnostic indicators are also available at the school's discretion for more detailed, precise analyses of writing needs.

Regarding information on the distribution and use of programmatic resources, the PAM Program Analysis Report is quite comprehensive. It reports use and relative importance (by classroom) of a number of resources for student placement, assessment, and evaluation; frequency and variety of writing-related activities; and time allocations by instructional modes or configurations.

Information reported on these programmatic variables is collected from teachers by means of a survey instrument, the PAM Teacher Questionnaire. Though comprehensive, the questionnaire may be completed in less than one hour.

The achievement and program resource information juxtaposed in the PAM Program Analysis Report facilitate decision-making at the program level. If student achievement is not up to expectations, decisions must be made about appropriate action. If goals have been set regarding the use or distribution of program resources, the PAM Program Analysis Report will show compliance with or departure from such goals. Again, decisions must follow in response to this information. Varying combinations of satisfactory and unsatisfactory results on both achievement and resource use and distribution will of course give rise to many kinds of decisions. If, for example, achievement is satisfactory but program resources are apparently being squandered, the program manager is faced with decisions. Decisions are also required if resources appear to be used efficiently but achievement is disappointing. Sometimes the information in the Program Analysis Report will function as the beginning of a process of diagnosing program needs or problems which will in time result in decisions to modify the program. The point is this: Rational decision-making requires an information base, and the PAM Program Analysis Report provides such a base very systematically and comprehensively.

The PAM Program Analysis Report, then, provides the principal with an agenda for assessing program needs and determining appropriate responses. Regarding a school's writing program, responses to needs might involve modification in the use or distribution of the resources analyzed in the PAM report. For example, a decision might be made to increase or decrease the amount of time allocated for writing instruction. Perhaps students might be grouped differently for writing instruction. Or perhaps the types of writing assignments might be varied. Such decisions could be made on the bases of the PAM report and discussion with instructional staff. Other kinds of decisions would require more intensive investigation and, ultimately, greater intervention in writing classrooms. Such investigation might determine the existence of instructional staffing needs in the areas of general instructional techniques and instructional planning, classroom management procedures, or content-specific techniques or information. Again, such needs could only be discovered through rather intensive investigation or diagnostic effort by the program manager. Responses are available to all such needs, but needs identification must precede correction.

With the PAM Program Analysis Report, the principal can take the lead in improving his school's writing program.

## PAM in Writing -- Development and Implementation

PAM in Writing is an extension of PAM in Reading. In other words, PAM in Writing is an outgrowth, both conceptually and technologically, of Program Analysis and Monitoring in Reading. The principal features of PAM in Reading are a Program Analysis Report relating achievement and instructional variables, a classroom-level achievement report (the Monitor Report), Literal Comprehension Achievement Monitors (a battery of 24 multiple-choice, paraphrase-based reading tests levelled by reading passage difficulty), and a Teacher Questionnaire for gathering process information. A major strength of PAM in Reading is its scale of reading achievement, permitting measurement on the same metric across grades. The analogues of these components in PAM in Writing are the Program Analysis Report,

the Monitor Report on student writing achievement at the level of the classroom, the PAM Writing Test, and a Teacher Questionnaire.

PAM in Reading was developed within the New York State Education Department from 1977 to 1979; from 1979 to early 1981 PAM in Reading was extended and improved (as Title I PAM) under a contract with the U.S. Department of Education. PAM in Writing has been under development since 1980 as a cooperative effort involving State Education Department support of the Putnam-Northern Westchester BOCES. To date the PAM Writing Test, the Teacher Questionnaire, model answers, directions for raters, and the computerized Monitor Report are complete. The computer software for the Program Analysis Report is under development.

The major problem in developing a tool which would yoke writing achievement information with writing program practices was the creation of an acceptable measure of writing achievement. The measure would have to be valid, which ruled out any objective-type or non-performance measure. The students to be rated would have to produce writing samples. Available rating options included teacher-assigned grades, primary trait scoring, holistic scoring without model answers, and holistic scoring with model answers. The last of these options was chosen because of its advantage over all the others. Teacher-assigned grades were ruled out as too idiosyncratic. Primary trait scoring, as illustrated by the work of the National Assessment of Educational Progress, was rejected because of its great complexity and associated high cost. Standard holistic scoring, where raters assign papers to one of several categories, for example on a 4-3-2-1 basis, was rejected, even when models were employed, because of the relative grossness of the categorization or attempted scaling and the difficulty of generalizing or averaging from individual performance to group performance.

Holistic scoring based on a scale of zero to 100 and using 100% model answers was selected for two main reasons: (1) The scoring which would result would have very attractive properties for program analytic purposes, and (2) the State Education Department, as part of its Regents Competency Testing program, had succeeded in refining this methodology to a very high degree. In a word, it worked very well. Additionally, detailed, though not overwhelmingly lengthy, guidelines were available as a basis for the slightly modified rating directions which were eventually developed for PAM in Writing.

Development of the five writing assignments was guided mainly by the desire to assure that students would respond, would be able to produce a writing sample. Accordingly, one concern was to avoid the use of topics which would be unfamiliar to students (and many potentially interesting and stimulating topics run the risk of being foreign to some students) and would, hence, stifle their output. In other words, the PAM measure of writing achievement was not to be a measure of invention of imaginative fertility. Further, topics were to be developed on which students in different grades could have an equal chance to respond. Consequently, the five PAM writing assignments feature the mundane and familiar (e.g., describe your favorite game, describe your favorite person). In addition to the familiar topics, the five assignments are quite specific in their directions. Again, the aim was to assure a response if possible. The following illustrates the typical structure of a writing assignment from the PAM Writing Test:

"Tell me about your favorite animal. Write three paragraphs. Be sure to tell me--what it looks like, how big it is, where it lives, what it likes to eat, and why it is your favorite."

Once the assignments were constructed, they were administered, in May and June of 1981, to several thousand grade 3 and 6 students representing school districts in Putnam, Suffolk, and Westchester counties. All responses were reviewed, and the best ten or twenty responses from each grade and for each assignment were selected for a second review. This review resulted in the selection of an average of four responses per grade level for each assignment. The responses selected in this final review underwent minimal editing (nearly all related to mechanics): they are now the model answers used in rating. In other words, the model answers are high-quality student responses.

The PAM in Writing Teacher Questionnaire had the advantage of a successful model in the PAM in Reading Teacher Questionnaire. That questionnaire had established certain basic categories of variables which were both quantifiable (i.e., measurable) and controllable by the school. Such major categories as allocated instructional time; resources and materials for placement, assessment, and evaluation; and instructional grouping had only to be flushed out with specifics pertinent to writing instruction. To these categories of items were added a thorough list of various types of writing assignments. The questionnaire was reviewed by practitioners in writing instruction and management, and the final questionnaire was precoded to facilitate the processing of information. The major kinds of program variables covered by the Teacher Questionnaire are listed below:

- Use of instructional resources
- Methods of grading (ranked)
- Methods of assessment (ranked)
- Information used for pupil placement
- Frequency and variety of writing assignments focusing on--
  - Audience
  - Purpose
  - Form
- Frequency of writing assignments by length of assignment
- Frequency and variety of prewriting activities
- Frequency and variety of revising activities
- Number and type of evaluation strategies
- Class size
- Time allocated for writing instruction
- Time allocated by type of writing instruction:
  - One-to-one
  - Supplemental, extra-class, specialist
  - Supplemental, extra-class, aide
- Time lost for supplemental writing instruction
- Time spent in Whole Class, Spontaneous Group, and Stable Small Group Writing Instruction in the following categories:
  - Direct Instruction from Classroom Teacher
  - Other Adult Working with Pupils
  - Pupils Working Independently--Teacher Available
  - Pupils Working Independently--Teacher Unavailable
  - Pupils Working Together--Teacher Available
  - Pupils Working Together--Teacher Unavailable

## Piloting PAM in Writing

In late fall of 1981 the PAM Writing Test was administered to approximately 1,000 students in 40 classes at grades 3, 6, 7, and 8. Subsequently, teachers were brought together in groups under the direction of a consultant experienced in writing assessment and holistic scoring. The teachers were trained in the application of the rating techniques for the PAM Writing Test. Then each class set of student responses was rated by two teachers; in every case the second rater was the classroom teacher. Ratings were then averaged. Where time permitted, classroom teachers reviewed student responses for diagnostic purposes. At these sessions teachers also completed the Teacher Questionnaire.

Prior to testing, some concern had been expressed, by teachers and other educational professionals, that students in grade 3 either should not be tested at all or should only be tested toward the end of the school year. The first of these concerns seemed to assume either that some harm would come to grade 3 students through the testing or that perhaps testing grade 3 students in writing would be presumptuous in the light of common practice in writing instruction at that grade level. However, the test administration experience did not bear out this concern. No evidence of student problems, psychological or physical, was reported. The second concern, that students should be tested only at the end of the third grade, had been voiced by many third-grade teachers, typically on the grounds that students had not yet received instruction in some of the technical aspects of writing. This concern revealed a lack of understanding of the purpose of PAM in Writing. If the teachers were correct, then knowledge of certain refinements of writing would indeed not be manifested by third-graders early in the year; their responses would be rated relatively low, accordingly. But readministration of the PAM Writing Test at the end of the school year, after the relevant instruction had occurred, should then reflect the benefits of that instruction in terms of increased achievement. In fact, however, lack of instruction notwithstanding, the third-grade students were in no wise stymied by the writing assignments. They were able to produce. It is expected, of course, that a spring testing will reflect growth, no doubt resulting from instruction.

Handouts used in the presentation of PAM in Writing at the annual meeting of the American Educational Research Association include illustrations of the PAM in Writing Monitor Report and actual data which will appear in the PAM Program Analysis Report. These handouts are available from the Bureau of ESC Education Planning, 481 EBA, Albany, New York 12234. In addition, copies of the following materials are also available from the same address:

Monitor Report (mock-up)
Program Analysis Report (mock-up)
PAM Writing Test (sample)
Teacher Guide for the PAM Writing Test (sample)
Model Answers (booklet)
Rating and Score-Recording Procedure
Teacher Questionnaire

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| | CLASS | | | | |
|---|---|---|---|---|---|
| | A | B | C | D | Avg. |
| Average holistic score | 60.0 | 51.0 | 66.1 | 74.3 | 63.3 |
| Pupils | 23 | 19 | 22 | 22 | 21.5 |
| Minutes per week allocated for writing instruction | 140 | 90 | 300 | 80 | 152.5 |
| Average minutes per week received by pupils-- | | | | | |
| Whole Class Instruction Direct Instruction from teacher | 90 | 90 | 150 | 80 | |
| Other Adult Working with Pupils | 45 | 75 | 150 | | |
| Pupils Working Independently --Teacher Available | 105 | 110 | 150 | 80 | |
| Pupil Working Together-- Teacher Available | 105 | 75 | 150 | | |
| Number of in-class Writing Assignments per Month | 21 | 25 | 21 | 5 | 18 |

HANDOUT 1 Data excerpted from PAM in Writing Program Analysis Report

DISTRICT
BUILDING
GRADE
DATE

| | CLASS | | | | | | |
|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | AVERAGE |
| PUPIL ACHIEVEMENT INFORMATION | | | | | | | |
| PROGRAM | | | | | | | |
| RESOURCES | | | | | | | |

HANDOUT 2 PAM PROGRAM ANALYSIS REPORT -- BASIC STRUCTURE

Use of instructional resources
Methods of grading (ranked)
Methods of assessment (ranked)
Information used for pupil placement
Frequency and variety of writing assignments focusing on--
- Audience
- Purpose
- Form

Frequency of writing assignments by length of assignment
Frequency and variety of prewriting activities
Frequency and variety of revising activities
Number and type of evaluation strategies
Class size

Time allocated for writing instruction
Time allocated by type of writing instruction:
- One-to-one
- Supplemental, extra-class, specialist
- Supplemental, extra-class, aide

Time lost for supplemental writing instruction
Time spent in Whole Class, Spontaneous Group, and Stable Small Group Writing Instruction in the following categories:

- Direct Instruction from Classroom Teacher
- Other Adult Working with Pupils
- Pupils Working Independently--Teacher Available
- Pupils Working Independently--Teacher Unavailable
- Pupils Working Together--Teacher Available
- Pupils Working Together--Teacher Unavailable

HANDOUT 3 PAM in Writing Program Analysis Report, Major Program Variables

PROGRAM ANALYSIS AND MONITORING IN WRITING TEST ADMINISTRATION # 1

MONITOR REPORT

DISTRICT(2) BUILDING(02) GRADE(07) 7 TEACHER(01)

| PUPIL | | | TEST FORM | HOLISTIC SCORE | DIAGNOSIS RHETOR TASK | PARTS/ WHOLE | WORD CHOICE | SYN- TAX | MECH- ANICS | OTHER 1 | 2 | 3 | 4 | 5 | 6 | PCT/ RCT | STATE RECOMMEN- DATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | BL | ONE AM | 64 | 075 | | - | | | | | | - | | | | | |
| 02 | C | ORE Y | 64 | 070 | | - | - | | - | - | - | | | | | | |
| 03 | C | II C CK | 64 | 075 | | | - | - | - | | - | | | | | | |
| 04 | CI | BIRE IRI | 64 | 075 | | | - | | | - | - | | | | | | |
| 05 | C | TARA ARI | 64 | 060 | | | | | - | - | - | - | | | | | |
| 06 | D | VIA NNI R | 64 | 075 | | - | | | - | | - | | | | | | |
| 07 | E | ENI Y | 64 | 070 | | - | - | | - | - | | | | | | | |
| 08 | F | H LI | 64 | 065 | | - | - | - | - | - | - | | | | | | |
| 09 | F | RITO OB | 64 | 060 | | | - | | - | - | - | | | | | | |
| 10 | G | LIOI JAI | ONY | 64 | 075 | | | | - | | - | | | | | | |
| 11 | G | MINA /M | ELLE | 64 | 080 | | | - | | - | | | | | | | |
| 12 | H | KENB G I | ID | 64 | 075 | | | - | - | - | - | - | | | | | |
| 13 | H | MOND ESI | E | 64 | 055 | | | | - | - | - | - | | | | | |
| 14 | H | ES J | | 64 | 065 | | - | | - | - | - | - | | | | | |
| 15 | K | FUT NI | | 64 | 075 | | - | | - | | - | | | | | | |
| 16 | M | CH G G | | 64 | 065 | | - | | - | - | - | - | | | | | |
| 17 | M | ROW ILI | | 64 | 070 | - | | | | | | - | | | | | |
| 18 | P | ISS LOI | | 64 | 075 | | - | | | | - | | | | | | |
| 19 | P | EY L DA | | 64 | 070 | | - | - | - | - | - | - | | | | | |
| 20 | S | ANTZ ENI | | 64 | 070 | | - | | - | | | | | | | | |
| 21 | T | MPSO IAI | | 64 | 065 | | | | - | - | - | - | | | | | |
| 22 | T | KINS AL | | 64 | 060 | - | - | | - | - | - | - | | | | | |
| CLASS AVERAGES/PERCENT DIAGNOSTICS | | | | 69.3 | .0 | 27.3 | 63.6 | 22.7 | 77.3 | 68.2 | 77.3 | 40.9 | 0 | 0 | 0 | | |

Handout 4. PAM in Writing Monitor Report