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Donegal Assessment Analysis Project
Staff Development Component of the Assessment Plan
in *Pathway 2000 - The Donegal School District Strategic Plan's*
Action Plan on Assessment, Graduation Requirements and Remediation

Introduction

Chapter 4 of the Pennsylvania State Education Regulations outlines the importance of mastery of educational Standards. The mastery of these standards is measured through a matrix of assessments. The assessment matrix requires local, state and national inputs so that "success" or mastery can be calibrated against a variety of populations.

The state assessment, the Pennsylvania System of School Assessment (PSSA) is a battery of tests that are calculated against state populations, which have been tweaked by each district's percentage of free and reduced lunch rates.   These scores represent both norm-referencing and criterion-referencing statistical manipulations. In a sense, these scores give us the best of both worlds; norm-referenced for comparison to large populations and criterion-reference for comparison ranking against a state-established standard performance set.

The national assessment that we intend to use is the CTB Terra Nova Achievement Test batteries. These tests, like their PA counterparts, give us comparative data for rating and ranking of local students against national counterparts and against established standards-based performance sets.

National and state assessments have shown a definite move away from reliance on "traditional" techniques. Those stress the testing of low-level cognitive content. The movement has been toward problem solving, performance-based measures and writing to confirm appropriateness of answers or explain strategies involved. Research has shown that students need to be both taught how to handle these new testing requirements and experience them in "on-demand" testing situations if they are to do well and allow their true demonstration of their mastery.

The local assessments represent an unknown quantity. Quality is based on the professional sophistication of each teacher and probably exhibits all of the qualities of any other random set of acts. Unfortunately, assessment at the local level is used to generate grades and validate mastery of standards at a level of importance that is greater (to the individual student) than those of the other two levels and yet is the least academically controlled and probably the least accurate.

Background

The Donegal strategic plan for 2000-2005, tentatively entitled *Pathway 2000*, outlines a specific action plan for assessment, graduation requirements and remediation.

That plan recommends that a study of current assessment practice be undertaken. If current practice shows need, staff development initiatives would be undertaken to train teachers in assessment creation strategies.

Collection Technique

The technique for the study was to analyze a random sample of actual teacher tests. Principals were asked to alert their teachers to turn in assessments. Special meetings were held at the Middle School and High School to inform teachers of the intent of the study and to ask for their cooperation. Elementary Principals informed their staff of the study.

The tests were collected over a seven-week period from December 9,1999 through January 27, 2000. This allowed for collection of in-course assessments as well as end-of-course tests at the high school level.

Six hundred and sixty-four tests were collected and sequentially numbered. Three of the assessments turned in were not assessments at all and were dropped from the study. Using a random number table and random number table selection procedures (outlined in **Practical Research - Planning and Design**), 20 percent of the assessments (142) were selected for analysis.

Analysis Technique

The Supervisor of Curriculum and Instruction created an analysis data-gathering form. He used the five format categorization system located in the Curriculum Guidelines: *CR – Constructed Response, SR – Selected Response, PR - Product Assessment, PE-Performance Assessments and PF – Process-Focused Assessments (see page 8 for definitions).*

This allowed for the collection of data for all types of assessments. It also allowed for decision-making on cognitive levels of the items, rubric use and quality and several other types of data. The data-collecting instrument was revised three times due to input from other educators. Data was examined in percentage terms only. No other statistical methods of central tendency were utilized.

The analysis occurred between Feb. 14 and Feb. 18, 2000 and used only one-rater. This report was written on Feb. 18-19, 2000.

Collection Data

Number of test/assessments collected during targeted collection period: 664
Number unusable for scoring: 3
Total number useable: 661

Date of this report: February 19, 2000

Percent of Total selected for sample using random number chart: 20%
Actual total selected: 142
Breakdown of sample by level: High - 61, Middle - 40, Elementary - 41

Analysis

1. Testing of low-level cognition (understanding and comprehension levels on Bloom's Taxonomy) predominates all types of testing at all levels. (75.5%)

2. Traditional formats of multiple choice, true and false, matching, fill-in-the-blank predominate all other formats. (80%)

3. Short answer writing is never scored using a rubric. (0%)

4. Essay formats are very rarely used (.05%) and when used rarely are scored with a rubric (.02%).

5. Rubrics that were available were often poorly crafted with checklist-formats sometimes (33%) being represented as rubrics.

6. Problem-solving at any level above comprehension is rarely required (.04%), never scored with a rubric (0%) and problem-solvers are rarely called upon to write to justify or explain process or appropriateness of answer to problem posed (.04%).

7. Performance items were most often score sheets for projects where students had a tangible product to be evaluated. Rubrics rarely existed for such performances (.14%).

8. Performances never (0%) involved a written explanation of the process used or anything else.

9. No Process items were found in this 142-item sample. (0%)

10. Although not shown in the data presented
    ➢ essay writing at the elementary level does not seem to exist,
    ➢ math assessment almost always involves only comprehension of processes with problem -solving only occurring also as only a comprehension of process activity

Conclusions

If we assume that the 142 assessments were randomly selected from the 661 collected during the collection period and that they are representative of all items given at all times of the year, then -

1. Student achievement, in this sample, was measured in terms of traditional response forms to low-level cognitive questions and problems. Teachers rely on traditional forms of low-level, machine-scoreable responses almost exclusively.

2. Assessments, in this sample, do not present problem solving or performance or writing as viable alternatives to traditional assessment formats.

3. Assessment through student writing to present ideas, in this sample, is almost never done and would seem to indicate that is not valued by teachers.

Recommendations

Staff Development on assessment should be a priority. Staff development should focus on expanding teacher skills in assessment/test creation with emphasis should on:

1. writing to communicate,

2. applying skills, concepts and principles learned to problem-solving and performance tasks, and

3. using rubrics to communicate clear expectations to teachers and students alike.

4. After the Staff Development Sessions and after study-groups have had time to expand teachers' use of assessment techniques, a second study should be conducted and used as a parallel to this one.

   In that case, this study's results would serve as baseline data for a follow-up study to gauge if

   1. assessment variety use by teachers had increased,

   2. cognitive levels of traditional forms had been modulated upward

   3. assessment via extended writing had increased and

   4. rubrics for scoring performance, problem solving and extended writing had increased.

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District Data
N=142

True and False - SR	
Were there True and False questions?	Yes - 87 No - 55
Where they low or high cognitive levels?	Low - 82 High - 0 Mixed - 5
Multiple Choice -SR	
Were there M/C questions?	Yes -101 No - 41
Where they low or high cognitive levels?	Low -91 High - 0 Mixed -10
Fill in the Blank - CR	
Were there fill-in-the-blank questions?	Yes - 90 No - 52
Where they low or high cognitive levels?	Low - 78 High - 1 Mixed -11
Was a word bank included?	Yes - 50 No - 40
Completion -CR	
Were there completion questions?	Yes - 90 No - 52
Where they low or high cognitive levels?	Low - 90 High - 0 Mixed - 0
Matching -SR	
Were there matching questions?	Yes - 88 No - 54
Where they low or high cognitive levels?	Low - 88 High - 0 Mixed - 0
Writing – CR/ PR	
Was there writing required in any fashion?	Yes - 45 No - 97
Were there short answer questions?	Yes - 39 No - 6
Were they low or high cognitive levels?	Low - 44 High - 1 Mixed - 0
Was a rubric available for scoring?	Yes - 0 No -45
Was the rubric well crafted?	Yes - NA No
Was there a demand for longer (essay) level writing?	Yes -8 No - 37
Was a rubric available for scoring?	Yes - 3 No - 5
Was the rubric well crafted?	Yes - 2 No -1
Describe	Term paper (checklist w/out rubric)
Problem-Solving (heuristic devices) – SR/SR OR PE	
Was there a demand for problem solving?	Yes - 24 No - 118
Was subject math or science? Other here:	Math - 20 Sci - 4 Other
Did the problem require more than comprehension level cognition?	Yes - 1 No - 23
Was there a rubric available?	Yes - 0 No - 24
Was the rubric well crafted?	Yes NA No
Was a written explanation required to justify, explain or describe appropriateness of answer to question/problem?	Yes 1 No 23
Performance Items - PE	
Was there a demand for a performance where the teacher must see it or rate it with a rubric?	Yes - 14 No -128
Was there a rubric available?	Yes - 2 No - 12
Was it well crafted?	Yes - 0 No - 14
Was a written explanation required to justify, explain or describe appropriateness of answer to question/problem?	Yes - 0 No - 14
Process Items - PF	
Were there any process items in the assessment?	Yes -0 No - 142
Describe:	

Analysis Data-Collection Instrument

Donegal Assessment Analysis Project (Winter 1999-2000)

Staff Development Component of Assessment Plan in Pathway 2000 - DSD Strategic Plan

No of sample_____   Items on assessment_____   Organizational Level of Sample: ES   MS   HS

Directions: Check spaces on left if items were available and select a minimum of 2 questions at random for each area available.

True and False					
	Were there True and False questions?	Yes	No		
	Where they low or high cognitive levels?	Low	High	Mixed	
Multiple Choice					
	Were there M/C questions?	Yes	No		
	Where they low or high cognitive levels?	Low	High	Mixed	
Fill in the Blank					
	Were there fill-in-the-blank questions?	Yes	No		
	Where they low or high cognitive levels?	Low	High	Mixed	
	Was a word bank included?		Yes	No	
Completion					
	Were there completion questions?	Yes	No		
	Where they low or high cognitive levels?	Low	High	Mixed	
Matching					
	Were there matching questions?	Yes	No		
	Where they low or high cognitive levels?	Low	High	Mixed	
Writing					
	Was there writing required in any fashion?	Yes	No		
SA	Were there short answer questions?		Yes	No	
SA	Were they low or high cognitive levels?	Low	High	Mixed	
SA	Was a rubric available for scoring?		Yes	No	
SA	Was the rubric well crafted?			Yes	No
E	Was there a demand for longer (essay) level writing?		Yes	No	
E	Was a rubric available for scoring?		Yes	No	
E	Was the rubric well crafted?			Yes	No
Other	Describe				
Problem-Solving (heuristic devices)					
	Was there a demand for problem solving?	Yes	No		
	Was subject math or science? Other here:	Math	Sci	Other	
	Did the problem require more than comprehension level cognition?		Yes	No	
	Was there a rubric available?	Yes	No		
	Was the rubric well crafted?			Yes	No
	Was a written explanation required to justify, explain or describe appropriateness of answer to question/problem?	Yes	No		
Performance Items					
	Was there a demand for a performance where the teacher must see it or rate it with a rubric?	Yes	No		
	Was there a rubric available?	Yes	No		
	Was it well crafted?			Yes	No
	Was a written explanation required to justify, explain or describe appropriateness of answer to question/problem?	Yes	No		
Process Items					
	Were there any process items in the assessment?	Yes	No		
	Describe:				

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Scoring Criteria for Decision-Making

Decision on *cognitive level*: (use Bloom's taxonomy and definitions)

> Understanding or comprehension = low
> Analysis, Application, Synthesis or Evaluation - High
> For math all problem solving involving a format is comprehension; high requires a problem with no hint of a possible methodology (application) for answering.
> Mixed: high- and low-level questions both apparent

Decision on *well-crafted* rubric:

> Has at least 4 levels with discrete and definable differences per level; differences are easily understood.

Decision on *short* answer:

> Written response is one to two sentences or a phrase

Decision on *essay*:

> Word *essay* is used or the list of requirements negates a possible short-answer

Explanations of Assessment Approaches

Code	Approach	Definition	Example
SR	SELECTED RESPONSE FORMATS	Student selects correct or desired response among alternatives.	Multiple choice; true and false; matching, completion
CR	CONSTRUCTED RESPONSE FORMATS	Student generates brief written responses in the form of words, responses, usually computations	Fill in the blank, short answer, label
PR	PRODUCT ASSESSMENTS	Student generates extended written diagrams, or mathematical in the form of an essay, report, or project.	Essay, story or poem, research paper, portfolio, script for videotape; diary/journal
PE	PERFORMANCE ASSESSMENTS	Student generates other products for exhibition or display. These products are non-written.	Musical, dance or dramatic performance, oral presentation, athletic
PF	PROCESS FOCUSED ASSESSMENTS	Teacher interacts with student as the process is occurring. Teacher usually records, sometimes rates observation of the process.	Interview, process folio, assessment checklist, reflective learning log

Date of this report: February 19, 2000

Memo To: Principals

From: Dr. Gibble
Date: December 9, 1999
Subj: Assessment Analysis Project

Beginning with today, December 9, 1999 and continuing through the end of this semester (week of January 17th depending upon snow days), I would like you to collect one copy of each test/assessment given by every teacher in your school. (Sole exception -math tests given in grade K-5). I would like the answer sheet and if the test is an essay or written test I would like the scoring rubric.

I will be conducting an analysis of the types of test items used to (among others)determine:

   a. the cognitive level of the test's items
   b. the requirement for student use of problem-solving or heuristic devices
   c. the use of writing as a test form -- and the use of rubrics in the scoring of that writing
   d. and percentage of open-ended vs. closed (objective) tests
   e. type of assessment used listed according to Curriculum Guidelines categories

This data will be used in determining the needs of the faculty in terms of assessment training.

Please use the attached sheet to mark each assessment -- left side only -- and send to me, in bulk, after the end of the semester. Teachers can fill in the left side if you have given them these paper binders.

Assessment Collection Project

Teacher_____

Course_____

Date_____

School DHS   DMS   S   RV   GV   MT

Heuristics_____   Multiple-Choice_____

Open-ended_____   LLC_____   MC_____

Essay_____   With rubric _____