

Having an "Assistant" makes better teaching

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Abstract

This paper presents a theory of assessment and appraisal in school curriculum for improving teaching and achieving the school's educational goals. The problem of assessment created by the wide range of tests is how to design them and to implement them in schools on one hand and how to evaluate them afterwards, on the other. This paper describes software especially designed to solve the second problem. The software of "Assistant" and "Hameaged" was built for teachers and other educators who have no previous experience with computers or in statistic. It is user-friendly, making test analysis easy and reducing the need for professional handling. Teaching also improves using this software.

Keywords Codes: K.3.1; J.4; D;

Keywords: Computer uses in education, Social and behavioral sciences, Software.

1. INTRODUCTION

An educational system is constantly looking for new ways to improve itself. As students' achievements are the main purpose of a school's existence, means of assessment should be found in order to improve teaching and studying and thus to make the school function better. According to Eisner [1] "Assessment in schools is sometimes used to help teachers provide remedial help to students who need it and sometimes to provide feedback to teachers on the quality of their professional work. The assessment of teaching can help a teacher become more reflective about his or her own performance so that it can be improved. Assessment can focus on the quality of the program that is being provided. If the program's quality is poor to begin with, the quality of teaching does not matter much. All the functions can be reduced to the assessment of the program that is provided, the quality of teaching, and outcomes that result from the interaction of the first two. Program evaluation, teacher evaluation, and student evaluation are the major areas of focus for any form of educational assessment."

* "ASSISTANT" and "HAMEAGED", are products of "RENANIT" Software 22 Havradim st. Yehud 56275 Tel/Fax: 972 3 5363212

2. ASSESSMENT IN SCHOOL

According to Levi [2] good assessment and feedback should be curriculum embedded and planned for the most part by the classroom teacher who knows exactly what was taught and how. On the other hand, the classroom and the teacher are part of an entire system. Therefore, there must be a way to assess the classroom as a unit that is a part of the school system and the school as part of the educational system in the district or the country. It is essential that these tests do not become "psychometric imperialism".

For a test to be "holistic and rich" it must be designed to fit the right discipline and the right demands. Tests should be designed so that there will be a significant difference between academic tests and practical tests. A test should check cognitive, effective, and practical behavior. A test can be disciplinary or interdisciplinary and take into account daily life and practice. A test can be based on scholastic material, basic skills, or other performances. In any case there should be a certain proportion among all these, and each test should provide a means of determining the effectiveness of the teaching strategy that was chosen in order to serve the school's educational ideology.

A teacher who plans strategies for teaching and for testing accordingly should be able to analyze the tests quickly and objectively in order to make the right decisions and to use this information for future planning. Test analysis can be done manually, but this takes a lot of time and effort. On the other hand, appropriate software could do this much faster and easier. This paper will present some software that makes test analysis possible: the "ASSISTANT" for a teacher in the classroom and "HAMEAGED" ("Combiner") for headmasters or supervisors in administration.

3. "ASSISTANT"—AN AID FOR THE TEACHER IN THE CLASSROOM

As mentioned above, planning and designing the test according to the school's educational goals is the first and most important step in test analysis. There is a wide range of test procedures for appraisal: oral tests, written tests, multiple-choice tests, wide range tests, performance tests, individual tests, group tests, self-esteem (portfolio), and peer-esteem. All of them must be analyzed in order to serve their intended purpose of showing achievements, group difficulties, and curriculum problems.

Using the "ASSISTANT" software makes teacher interacts with the computer in order to get his or her tests analyzed. He or she decides what kind of test is needed and writes it into the software. The teacher must decide how many subordinate subjects are to be checked in the test, what kind of test it will be, and then decide accordingly how many questions or tasks the students are to perform, what is the expected outcome of the tasks, and how to score each task. The computer will show a table like the one shown below, and the teacher will fill in all the necessary details.

School: _____	Class: _____
Test subject: _____	No. of questions: _____ Date: _____ No. of subordinate subjects _____
Subordinate Subjects:	
No.1 _____	No. 4 _____
No.2 _____	No. 5 _____
No.3 _____	

Subordinate subjects:	1	1	4	5	4	3	2	1	3	5
Value of question:	5	2.5	8	5	20	4	5	2.5		
No. of question:	1	2	3	4	5	6	7	8	9	10...	

There are several other details that the teacher will be asked to add, such as teacher's name and the type of class. The teacher can assign any amount of points (from 5 to 100) for the test, and the software will change it to percentages.

4. "OPEN" AND "MULTIPLE-CHOICE" TESTS

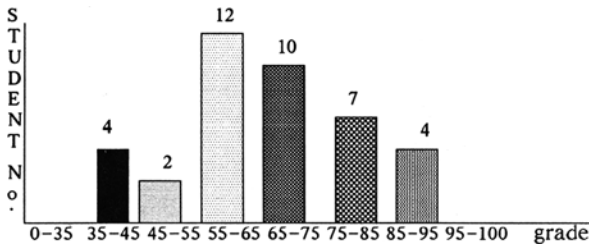
There are two possibilities for marking the tests: *multiple-choice* tests with no need to check and correct the test before entering the student's answers to the computer, and *"open"* tests where each part of the test is valued differently and the teacher has to read and evaluate each part independently. To facilitate this process the teacher estimates each task and records how many points are needed in order to mark it ideally. Later on, when the student's score is entered, the computer translates it to the exact percentages of the question or task on hand.

As mentioned above, there are all kinds of tests and means of assessment that can be analyzed by "ASSISTANT" provided the planning is carefully done. Scoring the tests and entering the results to the computer gives the teacher a wide range of information. This information includes graphs, charts, statistics and verbal information. Some of this information concerns the whole class or several classes together. It includes the following details: average marks, standard deviation, and reliability score. The graphs show the number of students in each grade. There is another graph (like the one below), showing percentages for each grade in the classroom. Other graph shows personal problems and material difficulties

Table 1.

Class profile

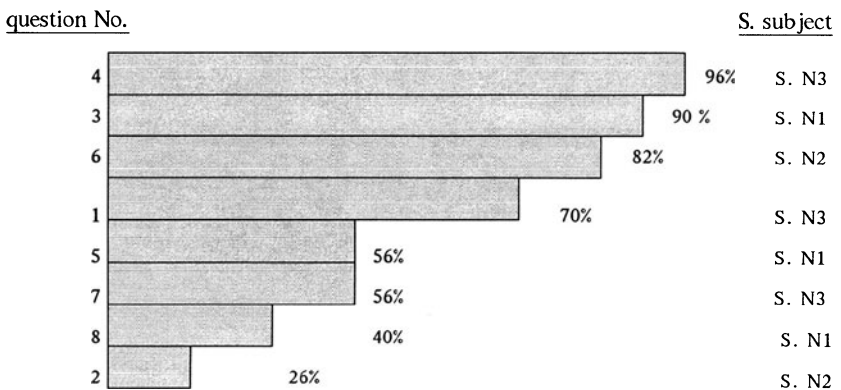
School name:	"Success"	Number of questions :	12
Class:	7th grade	Average score :	70
Test subject:	Bill of human rights	Standard deviation:	25.6
Number of students	39	Reliability:	0.78



Another graph shows the degree of difficulty of each question or task in the class.

table 2.

Degree of difficulty of tasks (questions)



The information shown above is not sufficient for decision making. In order to take definite steps the teacher has to have more details and "ASSISTANT" has to provide directions. Sometimes verbal and personal information such as names of students (and their scores) who have shown sufficient mastery of the material (the teacher decides what constitutes "sufficient mastery"), middle-level and poor students (and their scores),

is given with the report on each subordinate subject and on each task or question. The single question report gives details and names of students who did not answer the particular question.

Table no. 3

Students Achievements on task

HIGH ACHIEVERS	MEDIUM ACHIEVERS	LOW ACHIEVERS	NO ANSWER
joe gil (100)	rina tal (70)	amir ziv (55)	sal lan
ron bar (88)	meny s. (70)	zila n. (54)	miriam h.
yuval b (88)	shimi g. (66)	zvi b. (54)	yoel t.
sigal s. (80)	gil f. (62)	rimona h.(48)	
dani m.(76)			
			Mastery level: 76
			Poor level: 56

On seeing these reports the teacher will have the opportunity to ask himself or herself relevant questions: Was the test designed correctly? Did the test really reflect the material that was dealt with in class? Were there any questions that could have been phrased better? If the answer to the last question is "yes", then the teacher can change the score of such questions and get the whole test recalculated automatically.

With the answers to the above questions the teacher can start planning strategy. Should the material be reinforced for the whole class, or should the reinforcement be given to the non-high achievers? Will the help be given individually or in groups? Will the groups be homogeneous or heterogeneous?

We could stop at this point and be satisfied with what we have, but there is more. Sometimes the teacher would like to view the profile of the test in a different "mirror" that was prepared in advance. In this case there will be no problem, and the teacher will mark the questions that he or she wants to regroup and then get all the above reports on the new setting. Or again the teacher may like to give a detailed report on test achievements to the student or his or her parents. With "ASSISTANT" software a personal report can be obtained on each student showing the questions that were not mastered, subordinate subjects that should be reinforced, scores compared to class average, and the score in the preliminary test if this is a corrective test.

Each of the mentioned reports, and more, presented on screen and can be printed out as hard copy. Some reports sum up the entire information and can be obtained only as hard copy.

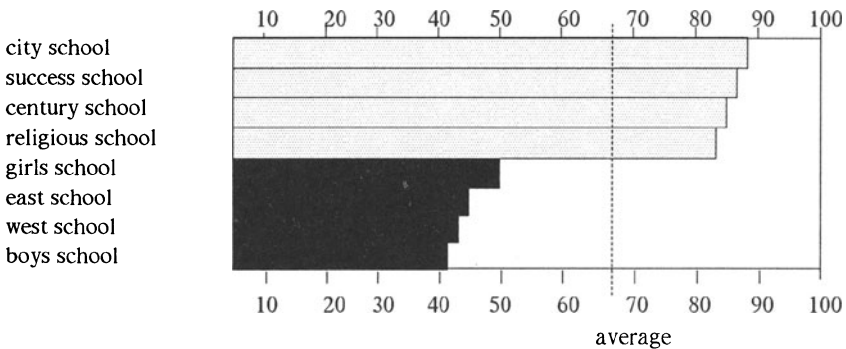
"HAMEAGED" A USEFUL DEVICE FOR HEAD MASTERS AND SUPERVISORS

We noted earlier that each class is part of a school and each school is part of a system. Therefore, those in charge of these units – a school or schools in a district need to obtain proper information in order to make decisions and have the system function optimally. We use "HAMEAGED" (Combiner) software which was designed to process the data from "ASSISTANT" for comparative information. With "HAMEAGED" information a headmaster or supervisor can get a detailed profile of the school or district. As in "ASSISTANT", the data from "HAMEAGED" is presented in graphs, statistics, and verbally. The reports from "HAMEAGED" give details of a class as a whole rather than that of an individual student. Some reports compare classes in the same school: general achievement of each class, class achievements in subordinate subjects, and class achievements in each question or task in the test. Similar reports are made for a district, the comparison is among schools as well as among classes in the same school. With this information those in charge can make decisions such as: Which school must be reinforced and by what means? Should this be accomplished by in-school teacher training, addition of academic hours, rearrangement of class attendants, discharging a teacher, or promoting a teacher? Without proper information a sensible decision cannot be made. Using "Assistant" and "Hameaged", makes it easy to have that information handy.

Table no. 4

Profile of Schools in a district

Subordinate subject results in the schools



the graph shows each schools status, and achievements it is also presents the average score of the whole district. Four out of eight schools met the demands and their achievement is high. these schools score is higher then the average of the district (68) and of the minimum required in the test. Four of the schools did not stand up to demands.

The above graph presents schools status in a district as a whole. In order to get farther details which gives the one in charge more information for better understanding and higher ability of decision making, there is another chard with detailed information, like the one showing below.

table no. 5

Profile of schools achievements in a district

Date:	10.7.94	Number of students:	1926
District name:	Galilee	Number of subordinate subjects:	4
Test subject:	Creative writing	Number of questions:	34
Number of schools:	8		
Average:	64.5	Standard deviation	22.5

School name	No. of Students	average	class	sub1	sub2	sub3	sub4	Students	ave.
City school	244	88	7c	90	86	97	89	40	92
			7b	84	89	89	90	42	88
			7a	85	80	86	88	42	86
			7d	80	86	84	89	40	86
Success school	126	86	7c	90	84	90	88	43	88
			7a	89	85	88	88	42	87
			7b	75	90	92	86	41	83
Century school	300	84	7b	87	90	95	86	43	92
			7d	80	85	90	88	43	86
			7a	76	90	77	80	43	81
			7c	55	60	65	70	43	63

This is a part of a long chard showing full details on each class and every school in the district. It is a mean of assessing the classroom as a unit and a part of the school system and the school as part of the educational system in the district or the country. This table destination is the supervisor. A headmaster will be getting the same information without other schools' identification.

Using this chard enable the supervisor to detect problems in his/her schools and try to deal with them. On the other hand, the headmasters obtaining information which shows them their school status comparing to other schools and gives them opportunity to assess their school more objectively then having only their own school's information.

Analyzing tests and assessing school performance is very important, but one must keep in mind the risks incurred in missing the aim of tests. A test should be a means of support and reflect student accomplishments. It should be authentic, assessing cognitive performance but without being too intricate. A test should indicate changes in students' scholastic progress, suggest individual differences between students and indicating their causes: cognitive, affective, or socioeconomic reasons. It is imperative that a test be based on common criteria for all students so that analyzing it will give significant evidence of the individual's ability and performance.[3]

6. CONCLUSION

The new assessment practice is intended to help all participants in the educational system: students, teachers, and administration—each one in its unique part of the delicate fabric of schooling. Learning how to learn, as the saying goes, is a fundamental educational aim, and since learning is a verb, seeing it unfold both haltingly and smoothly is a primary aim of diagnostically useful assessment, and therefore an important criterion for creating and appraising new assessment practice. Add to this the new technology, adapt the right software, and you will have a chance to make a real change in the educational system and improve it.

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