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ABSTRACT

This study examines the accuracy of the self-scoring efforts of 306 eighth-graders on the Kuder General Interest Survey (GIS), and suggests possible methods to improve self-scoring accuracy. The GIS is widely used to assist junior high school students with their educational and vocational planning. After the administration of the test by English teachers (not aware of the research), the students' self-scored sections were checked for accuracy by an independent counter. Analysis results indicated sizable student error (94 counting errors were of magnitude 10 or more) that could definitely change the shape of a student's interest profile. Factors contributing to scoring error were not isolated. Suggestions for survey administrators to reduce self-scoring error include: provide adequate time; carefully supervise the students' pin hole placements and scale use; have students recheck their counts; or use the machine scored version. (BS)

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Self-Scoring Accuracy of the Kuder General Interest Survey

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Abstract

Self-scoring efforts of 306 eighth-graders on the Kuder General Interest Survey were found inaccurate. Scope, possible causes and suggestions for counselors are presented.

Self-Scoring Accuracy of the Kuder General Interest Survey

A variety of instruments have been developed to assist students with their educational and vocational planning. The Kuder General Interest Survey (Kuder, 1976), GIS, is widely used for this purpose, with its author recommending applications at the junior high school level. (Kuder, 1975) A popular version of the GIS is self-scored. Using this option, students indicate their preferences by pin-punching holes in the answer sheet and on through a folded series of pages, which, when separated, yield charts for scoring the various scales of the GIS. Kuder himself warns that in the case of younger children, scoring and profiling of scores should be supervised closely because of possible errors. (1975) However, a review of literature regarding the GIS and its predecessor, the Kuder Preference Record--Vocational, Form C (Kuder, 1948), reveals a lack of research regarding the accuracy of the self-scoring procedure used. A serious problem, particularly in light of the popularity of the GIS, is that its validity and reliability may be affected by self-scoring errors. The purpose of this article is to examine the accuracy of eighth-grade students' self-scoring efforts and to suggest possible methods of improving self-scoring accuracy.

METHOD

Sample

There were 306 subjects in the study. This included all eighth-grade students in a mid-Texas school except those placed in special MR or ED classes.

Test Administration and Scoring Supervision

The school's three eighth-grade English teachers served as test administrators during two regularly scheduled English periods. The teachers were given copies of the "Administration" and "Scoring and Profiling" sections of the General Interest Survey Manual (Kuder, 1975), along with a general explanation of the instrument by a school counselor. The teachers involved were not aware that the accuracy of the students' scoring was being studied, nor were they aware that the results were being used in a research study. They were simply asked by the counselor to follow the manual's instructions.

Verification of Scores

Following the students' self-scoring, the self-scored sections of the surveys were collected and checked for accuracy by an independent counter. Any discrepancies between a student's obtained score and the counter's result were rechecked until a correct score was verified twice. To check the accuracy of the counter's verifications, 5% of the scores were rechecked by a third counter. No verification errors were found.

ANALYSIS

Magnitude of students' counting errors was the variable in question. For each of the ten interest scales and a verification scale of the GIS, discrepancies between the students' obtained scores and the independent counter's results were computed. For each scale, the hypothesis tested with a one-tailed t-test was that the sample was drawn from a population whose mean counting error magnitude is zero on that scale. A one-tailed test was employed because use of magnitude of counting error, without concern for the sign of the error, eliminated all negative values. To describe the size and scope of errors, a frequency distribution of the counting errors on each scale was developed.

RESULTS

t-tests

The critical value for a one-tailed t at the .0005 level of significance, d.f. = ∞, is 3.291. The obtained t for the verification scale was 4.47, and the obtained t's for the 10 interest scales ranged from 5.28 to 9.70. Thus, the magnitudes of the counting errors on all scales were large enough for statistical significance at the .0005 level.

Frequency Distribution

The frequency of errors of each magnitude on each scale is presented in Table 1. For example, on scale 1, fifteen subjects had a counting error of three; and on scale 4, one subject made a counting error of 35.

CONCLUSIONS

The obvious conclusion which can be drawn from this study is that many of the eighth-grade subjects were inaccurate in their self-scoring efforts on the GIS. An examination of the frequency data presented in Table 1 indicates that sizable errors were made--94 counting errors were of magnitude 10 or more.

To emphasize the implications of the 10-point errors mentioned above, Table 2 was constructed using percentile conversion data from the GIS Profile Section for boys, grade six through eight. (Kuder, 1976) The table presents percentiles corresponding to raw scores at the endpoints of ranges from five raw score points below the approximate median to five raw score points above. For example, on scale O, a raw score of 27 corresponds to a percentile of 51 (approximate median), and the 10-point range centered on 27 corresponds to percentiles from 32 to 71, a 39 percentile point difference. A similar analysis for girls reveals percentile differences ranging from 26 to 36 points. A counting error of 10 could thus definitely change the shape of a student's interest profile. An even more drastic effect would occur if a student overcounted on one scale and undercounted on another, further magnifying the percentile difference.

RECOMMENDATIONS

Although no attempt was made in this study to isolate factors which contributed to the scoring errors, suggestions can be made which possibly could reduce the problem. Below are several such suggestions, centering primarily on actions of the survey administrator.

Of course, the survey administrator should follow all directions and allow adequate time for completing and scoring the instrument. Student work should be checked periodically to insure that the pinholes are carefully being placed in the center of the space allowed, because a hole which is off the mark on the answer sheet is more easily misread on the scoring section pages. Also, a hole which is not punched clearly through all scoring sheets will be more easily overlooked during counting.

In addition, the administrator needs to give careful attention to the procedure used by students to change a response. To retract an already punched choice, the student is instructed to make two additional holes near the first, and any such triad is not to be counted during scoring. However, three holes, too close together on the answer sheet, sometimes blend into one large hole on the later scoring sheets beneath, and some of the students in this study counted these large holes as one.

The suggestion given in the GIS manual to have students hold their answer section up to the light should definitely be followed. By doing this before the answer section is separated to reveal the scale scoring sections, students could identify and correct potential problems caused by incomplete hole punches or crowded triad corrections.

Careful supervision is especially important on the pages where two scales are scored on overlapping and crossing series of circles and line segments. With the subjects in this study, several large errors were made on these pages because the student wrote the count for one scale in the space allocated for the other scale. Other students appeared to begin counting on one scale and transfer, either at a point of overlapping circles or crossing line segments, to the other scale measured on the same page.

An obvious method of reducing student counting errors is for someone to recheck each count. On a large scale, this is too time consuming for one person; however, students could be required to verify their own work by recounting until the same count is obtained at least twice.

A final suggestion, in view of the number and size of errors made, is to use the machine-scored version of the GIS. Because of its additional expense and time delay for score results, plus the possibility that it may be less intriguing for students, the machine-scored option will not always replace the conventional version. Too, because of incomplete erasures or stray marks or otherwise inappropriately completed answer sheets, the machine-scored GIS will not eliminate scoring errors.

A noteworthy observation is that this study did not explore errors made during the students' efforts to construct an interest profile from the counted scores. This profiling involves transferring numbers from the scoring pages to a separate page and then plotting these scores on a raw score/percentile chart. It is likely that transferring and incorrect plotting are further possible sources of error.

It is hoped that this study will cause users of the self-scored version of the GIS to exercise considerable effort to reduce scoring errors. A further hope is that these results will prompt similar studies with other self-scored instruments.

TABLE 1

Frequency of Counting Errors of Various Magnitudes for Each GIS Scale

Error Magnitudes	Scales										
	V	0	1	2	3	4	5	6	7	8	9
0	255	131	159	150	166	164	146	107	189	145	178
1	32	84	75	72	79	72	72	82	65	63	71
2	11	51	34	36	27	29	29	49	24	42	15
3	5	17	15	20	10	12	18	24	9	16	4
4	1	15	10	7	6	7	15	8	4	10	6
5		4	1	3	5	1	7	6	4	6	3
6		1	5	4	2	3	1	7	1	2	3
7	1		2	1		2	2	4	1	3	6
8			1	3		2	5	2		3	3
9			3	2	4	2	1	2	1	3	
10				3		2	1	2	2	3	1
11				2	2	1	1	4	2	1	4
12							2	1		1	2
13		1				2	1			1	2
14						1	3	1			1
15								1		2	
16						2	1	2		1	1
17				1	1		1				
18	1										
19										1	1
20					1						
		(22)* 1	(24) 1	(27) 1	(21) 2	(21) 1		(21) 1	(21) 1	(23) 2	(22) 1
		(32) 1		(34) 1	(25) 1	(26) 1		(22) 1	(26) 1	(35) 1	(24) 1
						(35) 1		(29) 1	(31) 1		(32) 1
						(44) 1		(33) 1	(47) 1		(35) 1
											(36) 1

*Magnitudes greater than 20 are indicated in parentheses.

TABLE 2

Mid-Range 10-Point Raw Score Differences and Corresponding Percentiles

Scale	Raw Score	Corresponding Percentile	Percentile Difference for 10-point Raw Score Difference
0	22	32	39
	27	51	
	32	71	
1	40	30	39
	45	48	
	50	69	
2	24	26	47
	29	50	
	34	73	
3	34	34	31
	39	49	
	44	65	
4	50	30	37
	55	49	
	60	67	
5	25	28	44
	30	50	
	35	72	
6	23	30	43
	28	51	
	33	73	
7	4	21	52
	9	50	
	14	73	
8	40	33	32
	45	49	
	50	65	
9	48	33	40
	53	50	
	58	73	

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