

DEVELOPMENT OF AN INDIGENOUS JOB KNOWLEDGE TEST[#]

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The purpose of the present study was to develop an indigenous and psychometrically sound instrument for objectively measuring the job knowledge of Pakistani students at high school level. From a study on a group of 240 students of grades eight to ten, a 46-item test, namely Job Knowledge Test (JKT) was developed. The internal consistency reliability was .84, while the evidence for validity was substantial. The significant gender differences were also found on JKT ($p < .000$). The girls of all grades scored high as compared to boys.

Occupational information is considered as an important aspect of career development. Individuals having a broad-based knowledge of the work are better suited to make career-related decisions. The dimensions of occupational information that are considered as important include knowledge of occupations (i.e., awareness about the nature of occupations), their current outlooks (i.e., their demand in the world of work), and the information related to education and training needed to obtain jobs (Holland, 1973; Holland & Holland, 1977; Walsh & Osipow, 1983). The knowledge of occupational alternatives/job knowledge is important for career decision making (Guthrie & Herman, 1982; Holland, 1985a; Loesch & Sampson, 1978; Multon, Heppner, & Lapan, 1995; Noeth & Prediger, 1978; Sampson & Loesch, 1981). A variety of possible career alternatives increases the probability of an individual for choosing a realistic and rewarding occupation, whereas the lack of knowledge limits the possibilities for occupational choices (Blustein, 1990; Greenhaus, Hawkins, & Brenner, 1983; Super, 1990; Taylor, 1985).

Occupational aspirations and choices are determined by knowledge of occupations (Rich, 1979). The knowledge of occupations are also related to gender as the sex differences in occupational aspirations, choices, interests, and preferences appear among all ages

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(Hansen, Collins, Swanson, & Fouad, 1993; Khan, 1992; Stockard & McGee, 1990; Subich, Cooper, Barrett, & Arthur, 1986).

The effect of the general environment on occupational knowledge has been widely discussed by Wehrly (1973) and recently by Hershberger, Lichtenstein, and Knox (1994) as the most important learning source concerning occupational knowledge. Fadale (1975) reported the influence of community environment when she stated that "students demonstrated greater accuracy with clusters of careers that are normally within the experience of this age group" (p. 82).

Despite the importance of the job knowledge factor, Noeth, Roth, and Prediger (1975) found that "many students may be making career decisions with the aid of only a limited knowledge of the world of work" (p. 216). Other studies that have investigated the level and amount of occupational information found that the young people need greater occupational information than they usually possess. For example, Prediger, Roth, and Noeth (1974) found that most students were of the view that they could use better occupational informations and greater assistance in making career decisions, and they also expressed the need for assistance in making career plans from eighth to the eleventh grade.

Studies conducted on vocational choices, interests, aspirations, and preferences of the students in different parts of Pakistan indicate that most of the students are unaware about the various occupations except the stereotype ones, as they are not vocationally aware and mature (Ansari, 1981; Chowdhri & Shah, 1981; Zaidi, 1979). A review of the literature on job knowledge in high school settings revealed that so far, no instrument has been developed to specifically measure the job awareness in our cultural set up. Thus, the primary purpose of the present study was to construct a psychometrically sound instrument for the assessment of job knowledge at high school level, and to examine the gender differences on job knowledge.

METHOD

Sample

A sample of 240 students equally divided between the two genders was taken. There were 80 students each from grades eight to ten, belonging to federal schools of Islamabad.

Instrument

The model followed in the development of JKT was the Assessment of Career Development (ACD) prepared by American College Testing Programme (1974). The basic format was taken from ACD but the items were constructed in accordance with Pakistani cultural conditions. Based on the review of relevant literature and tests (e.g., Gordon, 1967; Holland, 1985b; Khan, 1986, 1989; Syed & Abbasi, 1969) 70 multiple-choice items were generated for initial item pool. These items were then analyzed by judges with expertise in different fields of psychology having masters to doctoral degrees. The judges reviewed the items for clarity, appropriateness, and content validity. There was a general consensus among the judges about the items included in the initial pool, however, those items that appeared somewhat ambiguous were rewritten. The content of the items relates to the different job aspects such as: (a) nature of work (e.g., job duties and functions); (b) qualifications required for the job (e.g., the amount and type of necessary education and training); (c) workers' attributes associated with different jobs (e.g., abilities, interests, skills); and (d) psychological aspects (e.g., working conditions, work schedules, job values associated with occupations).

These 70 items of the test were then divided into two parts. Part I consisted of 60 items. These are related to knowledge about different jobs with reference to education/qualification, the nature and condition of work, personality, and salary, etc. The professions covered in the test are related to every field of life, which ranges from draftman, nurse, receptionist to those requiring higher qualification e.g., doctor, geologist, statistician, engineer, architecture, etc. Part II consisted of remaining 10 items about jobs, where people have to work with reference to things or machines, people, ideas or theories, and data or records. For example, electricians work mainly with things or machines; sales clerks or social workers with people; writers or scientists with ideas or theories; while the accountants or store keepers with data or records.

Procedure

The 70 items test was administered to groups of students at their school. Before administering, the researchers explained the procedure for marking responses on the answer sheet attached with the test booklet.

RESULTS

Phase I: Item Selection

During the first phase item-total correlation of the 70 items test was carried out. On the basis of this, 24 items were dropped, leaving a total of 46 items. The item-total correlations for the remaining 46 items ranged from .21 to .48 ($p < .01$). These 46 items are included in the final test.

Phase II: Reliability and Validity of the Final Test

In order to determine the reliability and validity of the final version of the test consisting of 46 items, the following analyses were carried out.

Reliability

To determine the reliability of the JKT, the approach of internal consistency (Kuder & Richardson, 1937) was adopted. It was found as .84 ($N = 240$) for total JKT, and .71 to .85 for various groups which is quite satisfactory (see Table 1). These levels suggest that subjects responded to the individual items in a consistent manner throughout the test.

Table 1

Kuder-Richardson reliability of JKT by grade and gender

Groups	<i>n</i>	K-R 20
Total	240	.84
Boys	120	.85
Girls	120	.82
Grade 8	80	.71
Grade 9	80	.83
Grade 10	80	.73

For the determination of test-retest reliability coefficient, JKT was administered on a sample of 36 students of grade 9, and readministered

after a period of two weeks. The results indicate a significantly positive correlation ($r = .70, p < .000$) between the scores of two administrations.

Validity

For the purpose of establishing validity, one-way analysis of variance was calculated to see if the overall differences between the mean scores obtained by students belonging to various grades were significantly different from each other (Table 2). The overall increase in the mean scores between various grades is found highly significant.

Table 2

Grade-wise differences among total sample on JKT

Grades	<i>n</i>	<i>M</i>	<i>SD</i>
8	80	20.85	5.67
9	80	26.80	7.25
10	80	31.59	5.48

$F(2, 237) = 60.55, p < .000$

JKT also has both face validity and logical content validity. A test has content validity if the substance of the items included in the instrument tap the construct of interest to be measured, and if the items are representative of the content area. The items of JKT were selected after an extensive research of empirical research literature. The contents of the instruments were also examined by different judges having at least masters in psychology.

Phase III: Gender differences

The gender differences were also determined on JKT. The differences between boys and girls of the total sample were found significant (Table 3). Their mean scores indicate that girls have more job knowledge as compared to boys.

Table 3

Gender-wise differences among total sample on JKT

Gender	<i>n</i>	<i>M</i>	<i>SD</i>
Boys	120	24.45	7.79
Girls	120	28.38	6.82

$F(1, 238) = 17.23, p < .000$

The gender differences were further estimated on the sample from grades 8, 9, and 10 separately. The significant gender difference was found among all the grades. There is a successive increase in mean scores among boys as well as girls which indicate that within boys and girls the job knowledge increases with the increase in school grades. The girls of all grades scored high as compared to boys indicating they have more job knowledge as compared to boys (see Table 4).

Table 4
Gender-wise differences among grades 8, 9, and 10 on JKT

Grades	Boys			Girls			<i>t</i>	<i>p</i>
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>		
8	40	19.08	5.22	40	22.63	5.59	2.93	.004
9	40	23.90	7.62	40	29.70	5.57	3.89	.000
10	40	30.38	5.84	40	32.80	4.88	2.02	.047

df = 78

DISCUSSION

This article presents the development of a JKT. It is an instrument designed to assess the knowledge of a broad range of occupations distributed across all levels of education/training (required for entering a profession or training during the job, nature of work, etc.), ranging from unskilled/semiskilled to technical professions. The items of the test represent the professions common or familiar in the Pakistani culture. The nonavailability of an indigenous measurement instrument designed to focus on job knowledge seems to be one of the major reasons why empirical exploration of these areas has not been carried out so far. The development of a scientifically valid and reliable instrument for the measurement of job knowledge i.e., JKT, therefore, constitutes the first major step toward empirical investigation in the relevant field. Overall, the results provides satisfactory evidence for validity. The test also confirmed the high internal consistency of the instrument.

The JKT in the present study also indicates gender differences as found in some other studies (Hansen, et al., 1993; Khan, 1992; Stockard & McGee, 1990; Subich et al., 1986). The results indicate the higher mean scores of girls as compared to boys. Although it appears contrary to the general concept of Pakistani society as it is thought that the boys in our society are the bread earners of their family and thus

they should have more awareness about the various occupations. But, in this study the reason that could have possibly led to better scores for the girls is that the boys have a fix liking for certain jobs e.g., the stereotype ones as doctors, engineers, armed forces, etc., and, therefore, it is assumed that they know what qualification (education and training) is required for these professions only. On the contrary due to the mass media and other resources girls also have more exposure to various occupations. The girls attitudes towards the process of career choice also matures at a faster rate than of the boys. The results here are consistent with that of Crites (1978) who noted that "longitudinal research indicates that sex differences do emerge during the high school years. At each succeeding grade level females had statistically reliable higher mean scores than males. In other words, their attitudes toward the process of career choice matured at a faster rate than that of the males" (p. 5). Johansson (1975) reported that one of the results of years of interest measurement research has been that "differences between the sexes in item responses are established fairly early in life. By the eighth grade, these differences are apparent" (p. 66). In a longitudinal study of grades 9, 10, and 12, Herr and Enderlein (1976) found that gender differences influenced the rate and level of vocational maturity. Means increased as grades increased in two of the three schools and especially among girl students.

This study also indicates that the Pakistani students of the present sample are more vocationally aware and mature as compared to the earlier studies (e.g., Ansari, 1981; Chowdhri & Shah, 1981; Zaidi, 1979). However, still these students are at a developmental stage that makes them prime candidates for career education. The high school years are a critical time in the career decision-making process because students are making decisions about college or work options that dramatically effect their lives. In grades 8, 9, and 10 students are in a stage of expanding their interests, understanding, strengths, and weaknesses more clearly. Our schools provide them little or no meaningful career education. After their school years, most will enter colleges that offer courses leading directly into the world-of-work. Students often select their courses without understanding their implications. JKT will help them to see a direction for the future, as well as instruction in choices for their remaining years of formal education.

To conclude it can be said that as JKT is the first effort of its kind in Pakistan, it is not possible to address every relevant issue in any single study. Therefore, further research is needed: (i) to see whether or not subjects scored different on sex-related jobs; and (ii) to explore its

external validity taking high and low scorers as contrast groups to reveal how much they differ on such external dimensions as age, education of parents, socioeconomic status, scholastic achievement, and class position, etc. This would contribute in the external strength/credibility of the test. On the other hand, as the internal consistency reliability of JKT seems acceptable and it also provide satisfactory evidence for its validity, therefore at the present stage, it can be used as a research instrument.

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