

AN ASSESSMENT OF THE HSPQ AS A MEASURE OF THE PERSONALITY STRUCTURE OF IRISH POST-PRIMARY SCHOOL PUPILS

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The High School Personality Questionnaire (HSPQ) was administered to a sample of boys (N 505) and girls (N 591) in each of the five years of secondary and vocational school. The internal consistency of the 14 personality factors was determined. Mean personality factor scores were compared for (i) each of the five years of post primary school (ii) boys and girls (iii) secondary and vocational school students and (iv) Irish and British students. Doubts are raised about the suitability of the HSPQ for guidance and counselling purposes because of the low levels of internal consistency of the personality factors.

The need for more objective and valid forms of personality assessment has led to the development of extensive batteries of personality tests, questionnaires, and inventories. The fact that the number of personality tests is exceeded only by the number of achievement tests bears ample testimony to the extent of the growth in personality assessment (2).

Available evidence seems to indicate that the High School Personality Questionnaire (HSPQ) (7) is one of the most widely used personality measures in Irish post primary schools, especially at the final year of school (8). Irish norms have not been published for the questionnaire, British norms (11) based on data derived from 27 schools tend to be used. According to the test developers, the HSPQ has been designed to be of use to teachers, guidance specialists, clinicians, and researchers. The accompanying manual claims that the questionnaire is aimed at giving 'the maximum information in the shortest time about the greatest number of

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† The authors wish to express their appreciation to Fiachra O Ceallaigh, Ronan Reilly, Garvan Campbell, Tommy Murray and former students of Mater Dei Institute of Education for assistance in carrying out this study.

dimensions of personality' (3, p 4) Considerable reservations have been expressed concerning the validity of the HSPQ (1) The developers have been criticized for the deceptive misuse of the concept of validity in reporting 'supportive' data (9) and for failing to report data on a factor analysis of item relationships One reviewer has described the validity of the questionnaire as 'indeterminate' (6)

The present study was designed to determine the consistency with which the individual items in the HSPQ measure the scales for which they were constructed The type of decision to be made following the administration of the HSPQ has a bearing on the level of consistency or reliability that is deemed acceptable Where the questionnaire is to be used for individual counselling or guidance a relatively high level of consistency is required The same level would not be required for large group comparisons The second aim of the study was to compare the mean scores on the personality scales for (i) each of the five years of post-primary school, (ii) boys and girls, (iii) secondary and vocational school students, and (iv) Irish and British students

METHOD

Instrument

The anglicised version (Form A) of the HSPQ which was used in the present study has 142 items, ten items for each of 14 scales and two additional items Table 1 contains a list of the names and a description of each of the scales On each of 13 scales, five items have positive responses and five have negative responses Each of these items has three alternatives, a, b, and c The alternatives on positive items are scored 0, 1, and 2, those on negative items, 2, 1, 0 Thus, scale scores can range from zero to 20 The remaining scale, Intelligence, has one correct response for each item which is scored 1 and two incorrect responses which are scored zero Thus, scores on this scale can range from 0 to 10

The anglicised version of the test contains eleven alterations to the 1968/69 United States edition of the questionnaire Three spelling amendments, six lexical terms, and inappropriate phraseology account for the alterations British norms for the 1968/69 anglicised version were published in 1973 (11) The data for these norms were derived from a sample (N 2,429) of 13 to 15 year old school children in 27 secondary schools in England, Scotland, and Wales The norms are based on third-year secondary students (N 2,429) with a mean age of 14.4 years (11)

TABLE 1
DESCRIPTION OF HSPQ PERSONALITY FACTORS

Low Score	Titles	High Score
reserved, detached aloof critical stiff	A	warmhearted outgoing easy going participating
dull less intelligent concrete thinking of lower scholastic mental capacity	B	bright more intelligent abstract thinking of higher scholastic mental capacity
affected by feelings emotionally less stable easily upset changeable of lower ego-strength	C	emotionally stable mature faces reality calm of higher ego strength (not the same as egotistical)
undemonstrative, deliberate inactive stodgy phlegmatic	D	excitable impatient demanding overactive unrestrained
obedient mild, easily led accommodating, submissive	E	assertive, competitive aggressive stubborn dominant
sober taciturn serious	F	enthusiastic heedless happy go lucky
disregards rules expedient has weaker superego strength	G	conscientious persistent moralistic staid has stronger superego strength
shy timid threat sensitive	H	venturesome thick-skinned socially bold
tough minded rejects illusions	I	tender minded sensitive clinging over protected
zestful likes group action	J	circumspect individualism reflective internally restrained
self assured placid secure complacent untroubled	O	apprehensive self reproaching insecure worrying guilt prone
socially group-dependent a joiner and sound follower	Q ₂	self sufficient prefers own decisions resourceful
uncontrolled lax follows own urges careless of social rules has low integration	Q ₃	controlled, socially precise self disciplined compulsive has high self concept control
relaxed, tranquil, torpid unfrustrated composed	Q ₄	tense driven overwrought frustrated fretful

The mean age of students in the American standardization was 14.5 years (3)

Sample

Practising post primary teachers (N 21) who were pursuing a one-year diploma course in counselling and guidance administered the HSPQ in their own post primary schools. The support of two further guidance counsellors was obtained to ensure that boys and girls from each of two types of post primary school (secondary and vocational) and from each grade level within these types of schools would be represented in the sample. In assigning counsellors to grade levels within schools, an effort was made to approximate national enrollment figures with regards to type of school, sex, and grade level. A cross-section of schools (N 29) from different geographical areas was represented in the sample. On the basis of the sampling procedures, it cannot be claimed that the selected schools represent the population of Irish post primary schools. Details of the sample are summarized in Table 2.

The HSPQ (Form A) was administered to 1,096 students (505 boys and 591 girls) in each of the five post primary grades in secondary and vocational schools. The mean age of the students was 14.9 years.

TABLE 2
NUMBERS OF STUDENTS IN SAMPLE
BY TYPE OF SCHOOL, GENDER AND GRADE

Grade	Secondary		Vocational		Total
	Girls	Boys	Girls	Boys	
1	106	89	52	48	295
2	120	89	33	52	294
3	95	75	35	26	231
4	64	55	10	9	138
5	71	47	5	15	138
Total	456	355	135	150	1096

RESULTS

Reliability

A total of 874 (79.7%) students answered all of the 142 items of the HSPQ. Reliability indices (Cronbach's alpha coefficient), based on the data obtained from these students were calculated for each of the 14 factors (Table 3). The procedure used was a conservative one and in

TABLE 3
INTERNAL CONSISTENCY RELIABILITY INDICES
FOR HSPQ FACTORS

Factor	Coefficients	Factor	Coefficients
A Sociability	43	H Venturesome	56
B Intelligence	46	I Sensitivity	73
C Ego-strength	52	J Individualism	24
D Excitability	52	O Apprehensiveness	46
E Dominance	39	Q ₂ Self sufficiency	38
F Enthusiasm	51	Q ₃ Will power	37
G Conscientiousness	47	Q ₄ Tension	47

general results in a lower-bound estimate of reliability (10). The mean reliability index was 47. Fewer than half of the factors had coefficients which exceeded 5. Factor I (Sensitivity) had the highest index (73) and J (Individualism) the lowest (24).

Relationship among factors

The correlations among the 14 factors are presented in Table 4. Slightly over two thirds of the individual correlations are less than .20, a finding which suggests that many of the factors are relatively independent of each other. Ten of the coefficients are higher than .40. These are C with D, H, O, and Q₄, D with O and Q₄, E with I, F with O and Q₄, and O with Q₄. In terms of the set of 14 factors, C, O, and Q₄ are relatively less independent

TABLE 4
INTER-CORRELATIONS AMONG HSPQ FACTORS

	B	C	D	E	F	G	H	I	J	O	Q ₂	Q ₃	Q ₄
A	13	07	-13	-08	13	11	32	14	-35	-19	-37	13	-14
B		-10	07	01	11	03	-02	-02	-02	-04	-01	05	02
C			-43	23	-07	26	44	-17	-11	-49	-02	38	-49
D				-10	17	-23	-37	-02	16	42	03	-34	52
E					18	-12	24	-48	10	-23	11	02	-16
F						-28	19	-31	-03	-01	-12	-24	01
G							14	17	-10	-25	-01	38	-16
H								-19	-16	-48	-16	26	-43
I									-02	17	-08	06	08
J										11	31	-08	10
O											11	-36	41
Q ₂												-02	00
Q ₃													-27
Q ₄													

Due to missing data on individual factors the sample sizes for the correlations vary from 989 to 1037

since each correlates 4+ with at least three other factors

Changes over grade level

Mean scores for each grade level were compared to determine the extent of changes in student-factor scores over the five years of post primary school (Table 5). Analyses of variance revealed significant differences between grade level means on seven of the 14 factors

At each grade level, the mean intelligence score was higher than that for the preceding grade level. On Factor C (Ego-strength), mean scores decreased over each grade level until grade 4 and increased between grades 4 and 5. On Factor D (Excitability), mean scores increased between grades 1 and 2 and subsequently decreased over each grade level. Mean scores on Factor F (Enthusiasm) increased over each grade level up to grade 3, decreased at the following grade level and, by grade 5, had increased slightly again. Similar patterns of mean-score changes were recorded for Factors G (Conscientiousness) and I (Sensitivity), after a decrease in mean scores between grades 1 and 2, mean scores increased over each subsequent grade level. On the final factor, Q₄ (Tension), mean scores increased over each grade level up to grade 4 and subsequently decreased.

Gender

Statistically significant gender differences were recorded on 10 of the 14 factors (Table 6). Boys scored higher on C (Ego-strength, i.e., were more emotionally stable), E (Dominance, i.e., were more assertive), F (Enthusiasm), H (Venturesome), J (Individualism), and Q₂ (Self-sufficiency). Girls scored higher on A (Sociability, i.e., were more warm-hearted), I (Sensitivity), O (Apprehensiveness), and Q₄ (Tension). Differences on B (Intelligence), D (Excitability), G (Conscientiousness), and Q₃ (Will power) were not statistically significant. A very similar pattern of results emerged when the analysis was repeated at each grade level.

An examination of Eta² values (which indicate the proportion of the variance in students' scores attributable to differences in gender) suggests that there was very considerable overlap between boys' and girls' scores on these variables and that gender accounted for very small proportions of variance on the factors, with the exceptions of Factor E (Dominance) and, in particular, Factor I (Sensitivity).

TABLE 5

MEAN SCORES ON HSPQ PERSONALITY FACTORS BY POST PRIMARY GRADE LEVEL

Factor	Grade	1	2	3	4	5	Eta ²	Sig
	N	264 282	276 288	219 227	130 136	125 132		
A Sociability		12 07	11 67	12 11	12 04	12 14	00	
B Intelligence		6 64	7 14	7 47	7 54	8 06	06	***
C Ego strength		10 27	9 72	9 35	8 52	9 44	02	***
D Excitability		9 65	10 76	10 56	10 21	9 38	02	***
E Dominance		8 14	8 40	8 63	8 30	7 89	00	
F Enthusiasm		8 90	9 70	10 09	9 78	9 89	01	**
G Conscientiousness		12 07	10 89	11 28	11 36	11 66	02	**
H Venturesome		10 62	10 13	9 99	9 89	10 31	00	
I Sensitivity		10 26	9 42	9 54	10 49	11 51	02	***
J Individualism		7 45	7 42	7 67	7 88	8 24	01	
O Apprehensiveness		8 79	9 00	9 04	9 10	8 34	00	
Q ₂ Self sufficiency		8 44	8 42	9 14	8 60	9 01	01	
Q ₃ Will power		10 60	10 75	10 44	10 55	10 63	00	
Q ₄ Tension		10 46	10 81	10 82	10 91	9 69	01	*

*** p < .001 ** p < .01 * p < .05

TABLE 6
MEAN SCORES ON HSPQ PERSONALITY FACTORS
BY GENDER

		Meanst		Standard Deviations		Eta ²	Higher Sex
		Girls	Boys	Girls	Boys		
A	Sociability	12.71	11.12	3.37	3.42	.05	G***
B	Intelligence	7.29	7.18	1.73	2.01	.00	
C	Ego-strength	8.89	10.42	3.68	3.49	.04	B***
D	Excitability	10.25	10.10	3.84	3.65	.00	
E	Dominance	6.95	9.90	3.01	3.09	.19	B***
F	Enthusiasm	8.86	10.49	3.74	3.37	.05	B***
G	Conscientiousness	11.63	11.22	3.31	3.41	.00	
H	Venturesome	9.55	11.00	3.85	3.64	.04	B***
I	Sensitivity	12.97	6.60	3.86	3.66	.42	G***
J	Individualism	7.18	8.19	2.95	3.02	.03	B***
O	Apprehensiveness	9.47	8.20	3.65	3.45	.03	G***
Q ₂	Self sufficiency	8.11	9.34	3.45	3.35	.03	B***
Q ₃	Will power	10.58	10.63	3.25	3.37	.00	
Q ₄	Tension	10.92	10.21	3.74	3.49	.01	G**

†Due to missing data the sample sizes vary from factor to factor for boys the range is from 471 to 489 and for girls from 551 to 570

*** $p < .001$ ** $p < .01$

Type of School

Comparisons between secondary and vocational schools were confined to the first three grade levels, since the number of students in senior-cycle grades in vocational schools was small. Table 7 compares the data for junior cycle secondary and vocational school students. Statistically significant differences were recorded on seven factors (Table 7). Secondary school students scored higher on four factors – A (Sociability), B (Intelligence), D (Excitability), and Q₄ (Tension), while vocational students scored higher on C (Ego-strength), E (Dominance), and J (Individualism). The values for η^2 indicate that type of school was a very minor factor in terms of explaining student score differences on all but one of the factors – Factor B (Intelligence).

Irish-British differences

Since the mean age of the British sample (14.4 years) was considerably lower than the mean age of our sample (14.9 years) and also since the British sample included students from only one grade level whereas the Irish sample was spread across five grade levels, a direct comparison of the two data sets was considered inappropriate. An examination of the age structure of the Irish sample revealed that the mean age of the second-year students (14.4 years) was exactly the same as the mean age of the British standardization sample. Accordingly, the Irish second-year data were used in cross-national comparisons of student scores.

Irish students had significantly higher mean scores on four factors: Factors A (Sociability), C (Ego strength), H (Venturesome), and Q₃ (Will power). British students scored higher on four factors: E (Dominance), F (Enthusiasm), J (Individualism), and Q₂ (Self-sufficiency). Non significant mean differences were recorded on the remaining factors – B (Intelligence), D (Excitability), G (Conscientiousness), I (Sensitivity), O (Apprehensiveness), and Q₄ (Tension) (Table 8).

CONCLUSION

The HSPQ was administered to post-primary school students in a sample of Irish secondary and vocational schools. Reliability indices for the various scales were low, ranging from .24 to .73. The authors of the questionnaire also reported low reliability coefficients for scales in a single form of the HSPQ (.20–.43) but argued that high homogeneity within scales is 'by no means universally desirable' (3, p. 10). To boost reliability, they recommend that more than one form of the questionnaire be used.

TABLE 7
MEAN SCORES ON HSPQ PERSONALITY FACTORS
BY TYPE OF SCHOOL

		Meanst		Standard Deviations		Eta ²	Higher Type of School
		Second ary	Voca tional	Second ary	Voca tional		
A	Sociability	12 18	11 36	3 61	3 18	01	S**
B	Intelligence	7 48	6 03	1 68	1 95	12	S***
C	Ego-strength	9 56	10 43	3 74	3 38	01	V*
D	Excitability	10 49	9 85	3 69	3 86	01	S*
E	Dominance	8 22	8 77	3 40	3 33	01	V*
F	Enthusiasms	9 62	9 31	3 71	3 30	00	
G	Conscientiousness	11 51	11 20	3 49	3 19	00	
H	Venturesome	10 11	10 63	3 97	3 27	00	
I	Sensitivity	9 84	9 52	5 06	4 35	00	
J	Individualism	7 28	8 06	2 98	3 07	01	V*
O	Apprehensiveness	9 05	8 69	3 69	3 30	00	
Q ₂	Self-sufficiency	8 60	8 75	3 55	3 40	00	
Q ₃	Will power	10 74	10 27	3 42	2 76	00	
Q ₄	Tension	10 93	10 07	3 62	3 53	01	S**

† Due to missing data the sample sizes vary from factor to factor for secondary students the range is from 550 to 562 and for vocational students from 219 to 232

*** $p < 001$ ** $p < 01$ * $p < 05$

TABLE 8
MEAN SCORES ON HSPQ PERSONALITY FACTORS
OF IRISH AND BRITISH STUDENTS

		Meanst		Standard Deviations		Higher Nationality
		Irish	British	Irish	British	
A	Sociability	11.67	10.72	3.41	3.57	Ir ***
B	Intelligence	7.14	7.08	1.68	2.01	
C	Ego-strength	9.72	9.12	3.57	3.49	Ir **
D	Excitability	10.76	10.58	3.55	3.52	
E	Dominance	8.40	9.48	3.45	3.51	Br ***
F	Enthusiasm	9.70	10.28	3.47	3.60	Br **
G	Conscientiousness	10.89	10.95	3.37	3.36	
H	Venturesome	10.13	9.53	3.66	3.65	Ir ***
I	Sensitivity	9.42	9.31	4.71	5.02	
J	Individualism	7.42	8.49	3.03	3.11	Br ***
O	Apprehensiveness	9.00	8.92	3.60	3.35	
Q ₂	Self-sufficiency	8.42	9.41	3.29	3.47	Br ***
Q ₃	Will power	10.75	10.00	3.17	3.26	Ir ***
Q ₄	Tension	10.81	11.00	3.69	3.49	

+Due to missing data on individual factors the Irish sample size varied from 276 to 288

*** $p < .001$ ** $p < .01$ * $p < .05$

This procedure raises a number of problems. First, from the point of view of the individual school counsellor, it would involve additional time and expense. Second, while increasing scale length normally improves the index of internal consistency, the sizes of the present indices do not suggest that the addition of another form of the HSPQ would yield satisfactory reliability indices. Third, the estimates of parallel form equivalence are low, ranging from 21 to 54 on the anglicised version (11), suggesting that a person's score on a particular scale might be quite different on another form of the test.

The lack of appropriate Irish norms, and adequate indicators of reliability and validity leads us to conclude that users should consider seriously the advisability of using the HSPQ for individual guidance and counselling purposes.

Significant differences were recorded over the five grades of post primary school on seven of the 14 HSPQ factors. The pattern of factor score differences was not consistent, with the exception of intelligence. Mean intelligence scores increased with grade level, a finding which is not surprising given age differences between grades and the tendency for less able students to drop out of school (4).

Although sex differences were recorded on fourteen factors, the differences were small, with two notable exceptions: boys scored higher on dominance and girls scored higher on sensitivity. It is of interest to note that the pattern of results is virtually identical to that which emerged in a comparison of boys and girls on the British standardization of the HSPQ (11). Will power is the only exception to this pattern, British boys scored significantly higher than girls on this factor, whereas the mean difference was not significant in the case of the Irish sample.

Small but significant differences between secondary and vocational school pupils were recorded on six factors. On the ten item intelligence scale, however, the mean difference was larger. The finding that secondary-school pupils scored higher than vocational pupils supports the findings of studies which used other measures of ability (4, 5, 12).

Comparison of British and Irish personality scores revealed significant differences in favour of British students on dominance, enthusiasm, individualism, and self sufficiency while Irish students scored higher on sociability, emotional stability, venturesome, and will power. Because of the

nature of both samples, caution should be exercised in interpreting the cross-national differences

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