

## **Adult Students' Personalities and Behaviours towards Examinations: A Study of Universiti Sains Malaysia's (USM) Distance Education Students**

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### **Abstract**

This article presents a study to measure some personality styles among adult distance education students. In particular, these aspects refer to their expressional, emotional, intellectual, interpersonal, working and religiousness traits. The purpose of the study is to see how these traits *vis-a-vis* their demographic data contribute to their attitude towards examinations. Mailed self-rating questionnaires were used as to collect information from the respondents. The findings of this study showed that most adult distance education students of USM possess personality traits that contribute towards their well-being and success. Some of the personality traits are correlated with their behaviour toward examinations. Their interpersonal style and religiousness showed a moderate correlation with examination motivation and strategy. Lastly, their work and emotional styles show a weak correlation with examination preparations.

Keywords: interpersonality style, behaviour, well-being

### **Introduction**

The final examination is one of the most important assessment components in almost all educational institutions including those with distance education systems. It is an established method by which institutions assess and grade their students. The School of Distance Education (SDE) of Universiti Sains Malaysia (USM) maintains its final examination component which contributes between 60% to 70% towards the overall grade in many subjects.

In the conventional setting, it has always been the interest of educationists to understand how the relationship between demographic factors, such as

social backgrounds, and psychological factors, such as personality traits, in combination affect the study process or the outcomes of the students (Banks, 1989; Schultz and Schultz, 1994).

Practitioners in the distance education arena are interested to see the relationships between these factors with learning within the scope of differences and similarities of the two systems. Peculiar to the SDE of USM is that it can be regarded as distance teaching for adults who are mostly in full-time employment. Being adults mean that they have some experiences specific to them, such as being married or having previous learning experiences; being full-time employees means that they only study on a part-time basis. Many facets of the personality have been studied by correlating them with variables other than distance education (Schultz and Schultz, 1994).

Many studies have reported the relationship of personality traits with academic performance, preference for academic assessment and examination grades but none of the work has used distance education students as samples (Furnham, Chamorro-Premuzic and McDougall, 2002; Chamorro-Premuzic and Furnham, 2003a; Chamorro-Premuzic and Furnham, 2003b; Furnham and Chamorro-Premuzic, 2004; Furnham et al., 2005). Around the same time, sampling on undergraduate conventional university students, Phillip, Abraham and Bond (2003) produced a model that tried to illustrate how personality traits might affect examination performance by means of mediators such as intention, autonomous intrinsic motivation and so on.

Rovai and Grooms (2004) reported their findings on the relationship between personality-based learning styles and learning among graduate students enrolled in online doctoral programmes. The relationship between personality types and other variables with learning strategies among secondary school pupils has been studied by Liyanage (2004). In short, the academic success of students, especially adult students, not only depends on academic aptitudes and study habits but also on personality factors. The religiousness dimension was included in the study as part of the personality factor because it has long been considered an important agent in the moulding and shaping of individuals as well as group personality characteristics.

The aim of the study was, therefore, to explore the general patterns of behaviour among adult Distance Education (DE) students towards examinations and to see whether personality characteristics and demographic factors have some bearing on student behaviour toward examinations. To explain further, the objectives of the research were:

1. The level of preparedness, strategies, motivation and shortcomings that distance students have toward examinations as a method of assessment.
2. The kinds of collective scores distance students exhibit on the five-dimension Berkeley Personality inventory – expressional style, interpersonal style, working style, emotional style, intellectual style as well as on the religiousness style.
3. The likely pattern of relationship existing between the aspects of students' personalities and demographic data with their behaviour toward examinations.

### **Methodology**

The study, using postal self-completed questionnaires, was started ten days after the distance students of the SDE, USM had taken the final examination of the 2003/04 academic year. A sample of 1,500 correspondents was chosen among students from the science, humanities and social science programmes.

The questionnaire contained three parts: Part A on personal data, Part B on students' behaviour towards examinations and Part C on their personality characteristics.

Part B comprised 50 questions (items) that reflected the kind of activities the students had undergone or the feelings they experienced or conditions they were under. Some of the items in Part B have been adapted from Brown-Haltzman (1967). Students were asked to provide responses to each item from the multiple choices of four Likert scales defined as: 1 = very seldom, 2 = frequent, 3 = very frequent and 4 = almost every time. Part C which contained 42 items described some important aspects of the students' personal characteristics. Students were asked to circle the

numbers that corresponded to the conditions that they felt best described them. For each statement, the respondents were given four choices to agree or disagree with: 1 = strongly disagreeing, 2 = disagreeing, 3 = agreeing and 4 = strongly agreeing.

The students' personalities were viewed in six important aspects: self-expression, interpersonal style, work-related characteristics, intellectual style, emotional style and religiousness. The first five measures were taken from the Berkeley Personality Inventory (Harary and Donahue, 1994) and that of religiousness was compiled from my own experience. The Berkeley Personality Inventory (BPI) is very similar to the so-called "Big Five" personality factors of extraversion, agreeableness, conscientiousness, neuroticism and openness; the BPI uses different terminology to express the full continuum of each personality dimensions. Each aspect personality was gauged by seven items.

On the religiousness attribute, students were asked about their commitment to these questions: I love my religion wholeheartedly; I love all human beings sincerely because of my religion; I am ready to contribute money, energy or ideas for my religion; I obey all obligations in my religion; I refrain from all kind of vices and unlawful deeds; I perform good deeds, forbid evil ones and I always perform my prayers to God (as prescribed by one's religion).

## **Results and Discussion**

The rate of returned answers was very satisfactory (746 respondents or 49.7%) compared with those of previous postal questionnaire surveys which yielded 30% to 40% (Ab. Rasid Mat Zin and Mustafa Fadzil Farid Wajidi, 2000). The demographic details of the respondents were as follows:

### ***Students' Personal Data***

#### **1. Gender**

Male	402 (53.9%)
Female	344 (46.1%)

<b>2. Marital status</b>	
Married	608 (81.5%)
Unmarried	138 (18.5%)
<b>3. Ethnicity</b>	
Malay	526 (70.5%)
Chinese	155 (20.8%)
Indian	51(6.8%)
Others	14(1.9%)
<b>4. Religion</b>	
Islam	532(71.3%)
Buddhist	135 (18.1%)
Hindu	43 (5.8%)
Christian	32 (4.4%)
Others	3 (0.4%)
<b>5. Age groups</b>	
< 25 years	27 (3.6%)
26–30 years	118 (15.8%)
31–36 years	314 (42.1%)
37–40 years	180 (24.1%)
> 41 years	107 (14.3%)
<b>6. Programmes of studies</b>	
Science	209 (28.0%)
Humanities	312 (41.6%)
Social Science	225 (30.2%)
<b>7. Employment</b>	
Public sector	685 (91.8%)
Private sector	58 (7.8%)
Self-employed	3 (0.4%)
<b>8. Level of studies (number of years in the system)</b>	
Year 1	183 (24.5%)
Year 2	115 (15.4%)
Year 3	187 (25.1%)
Year 4	225 (30.2%)
Year 5	36 (4.8%)

## 9. Examination centres

Pulau Pinang	164 (22.0%)
Alor Star	74 (9.9%)
Kuala Lumpur	67 (9.0%)
Ipoh	99 (13.3%)
Shah Alam	30 (4.0%)
Kota Bharu	107 (14.3%)
Kuala Trengganu	30(4.0%)
Kuantan	39 (5.2%)
Melaka	76 (10.2%)
Johor Bahru	53 (7.1%)
K. Kinabalu/Kuching/Sibu	7 (0.9%)

## 10. Distance from house/accommodation to the examination centres

< 25 km	297 (39.8%)
25–50 km	199 (26.7%)
51–70 km	83 (11.1%)
72–100 km	71(9.5%)
>101 km	96 (12.9%)

## 11. CGPA categories

< 1.99	19 (2.5%)
2.00–2.49	206 (27.6%)
2.50–2.99	430 (57.6%)
3.00–4.00	91 (12.2%)

***Students' Behaviour towards the Final Examination***

Findings were summarised in the form of range scores, counts (percentage), mean and standard deviations, association (Cramer's V) and correlation (Pearson's r).

***Students' Preparedness for the Examination***

Consisting of 12 items, this subsection has a reliability value of 0.7396 (Cronbach's alpha). This section basically asked students about the amount of time they had given, the kind of study materials they used and the way they studied (alone or in groups). The cumulative scores of the students' preparedness for the examination are listed in Table 1.

The cumulative values were obtained by adding the individual scores on each item (Harary and Donahue, 1994). For a twelve-item instrument on a Likert's scale of 1 to 4, it gives the minimum score of 12 and the maximum of 48 with the midpoint value of 30. As can be seen from Table 1, the mean was 32.86, nearly three units above midpoint.

**Table 1** Cumulative scores on students' preparedness for the examination

Score	Count (%)
12-18	7 (0.9)
19-26	80 (10.7)
27-34	350 (46.9)
35-41	284 (38.1)
42-48	25 (3.4)
mean 32.86	sd 5.40

About 11.6% of the respondents scored low on preparedness; as adults, they might probably be busy with other responsibilities. However, there did not appear to be a significant association between occupation and examination preparedness (Table 12). Examination preparedness seemed to correlate well with examination strategies and to a lesser extent, with examination motivation and the cumulative grade point average (CGPA) value (Table 13).

***Strategies taken by students before and during the examination***

The reliability value of this 12-item subsection was 0.7154 (Cronbach's alpha). The questions that were asked in this section included: taking quality time for revisions, having appropriate study materials, taking care of health, arriving early at the examination centre and using the right techniques to answer the examination questions.

Table 2 displays the cumulative data of the strategies adopted by students for the examination. Here again, the midpoint of the scale was 30. The mean was respectable, that is, 40.23, substantially far above the midpoint.

Less than 1% of the students scored low on strategies. This showed that most students had already equipped themselves with some examination skills. No significant difference was found between the numbers of years

the students had been in the system with regard to examination strategies (see Table 12). Moderate positive correlation existed between examination strategies and examination motivation (Table 13).

**Table 2** Students' strategies for the examination

Score	Count (%)
12–18	1 (0.1)
19–26	6 (0.8)
27–34	82 (11.0)
35–41	316 (42.4)
42–48	341 (45.7)
mean 40.23	sd 3.97

***Students' motivation to sit for the examination***

The students' motivation was measured using 13 items which had a reliability value of 0.6030 (Cronbach's alpha). The items dealt with, for instance, students aiming for good grades and the satisfaction that came with these grades, avoiding cheating in the examination and so on. Table 3 gives the cumulative scores for the students' motivation.

This was a thirteen-item instrument that gave a range from 13 to 52 with the midpoint on the 32.5 mark. The mean score was high (41.32); it was 8.8 units above the midpoint, better than the mean for the students' strategies. Less than 0.5% scored low on the motivation factor which again showed that as adults, the DE students were highly motivated learners.

**Table 3** Cumulative scores for students' motivation

Score	Count (%)
13–20	1 (0.1)
21–28	2 (0.3)
29–36	102 (13.7)
37–44	445 (59.6)
45–52	196 (26.3)
mean 41.32	sd 4.12



***Shortcomings in relation to the students' weaknesses toward the examination***

These factors were observed using 13 types of weaknesses which produced a Cronbach's alpha value of 0.8396. Among the weaknesses being observed were the fear towards the examination, bad hand-writing, forgetting memorised points and difficulty in expressing ideas in writing. The cumulative data for the students' weaknesses in the examination are given in Table 4.

**Table 4** Students' weaknesses in the examination

Score	Count (%)
13–20	100 (13.4)
21–28	265 (35.5)
29–36	291 (39.0)
37–44	83 (11.1)
45–52	7 (0.9)
mean 28.42	sd 2.51

As anticipated, weaknesses should always fall below the midpoint (32.5) – the lower the better since the students' achievement in the examination (CGPA) is negatively correlated with the weaknesses, although small (see Table 13). It seemed that the neuroticism type of students had many weaknesses during the examination, thus affecting their performance. Here the mean value was 28.42; it was only 3.6 units lower than the midpoint value. Twelve (12%) of the respondents scored high on examination shortcomings. This suggests that some form of support should be given to this group of students who were obviously having serious difficulties with the academic examination especially with regard to the assessment method.

***Students' personality traits***

Each aspect was gauged by seven items and the overall reliability of this instrument was 0.7655 (Cronbach's alpha).

***The self-expressional styles***

To measure personality characteristics, the scale of a similar range (7 to 28) was used throughout with the midpoint at 17.5. The cumulative scores for self-expression are shown in Table 5. The mean value of the self-expressional style was 19.83, only 2.33 above the midpoint. The results

suggest that more students were the outgoing type, this being in line with adults who have had experience socialising within the family and at work places. The students' expressional styles had a moderate positive correlation with the work and emotional styles (see Table 13).

**Table 5** Cumulative scores for students' self-expressional styles

Score	Personality type	Count (%)
7–11	Tend to keep to themselves in social situations	0 (0.0)
12–17	Do not feel comfortable around others	131 (17.6)
18–23	Enjoy being active at parties/social gatherings	539 (72.2)
24–28	Animated and outgoing in social situations	76 (10.2)
mean 19.83		sd 2.73

None of the students who responded to this factor could be considered as keeping to him/herself in social situations.

#### *Students' Interpersonal Styles*

The interpersonal inclinations of the respondents were found to be the following: mean score at 22.91, which was a 5.41 point above the midpoint (17.5), indicating that the majority of the respondents were caring about other people (Table 6). It correlated moderately and positively with the work, emotional and religiousness styles; with the examination strategies and examination motivation, it correlated at smaller values (Table 13).

**Table 6** Interpersonal styles of the respondents

Score	Type of interpersonal style	Count (%)
7–11	Difficult to trust others	0 (0.0)
12–17	Generally cooperate with other people	9 (1.2)
18–23	Genuinely care about other people	444 (59.5)
24–28	Extremely concerned about the welfare of others	293 (39.3)
mean 22.91		sd 2.64

Again, none of the correspondents agreed that he/she was one who did not trust others.

***Working Styles of the Students***

As shown in Table 7, the mean score of the students’ work style was 20.62, a little higher than 3 points above the midpoint; the results indicating that the majority (76.3%) of the respondents were achievement oriented. Not even one respondent preferred the situation where they were not connected to plans or schedules. The work style correlates most strongly with the emotional style and less strongly with the intellectual style and with examination preparedness (Table 13). This indicates that a person who is conscientious at work can also be calm and put more effort into studying before an examination.

**Table 7** Reflection of students’ personality while working

Score	Work-related personality	Count(%)
7–11	Prefer not to be tied down by plans and schedules	0 (0.0)
12–17	Sometimes have difficulty accepting/completing responsibility	74 (9.9)
18–23	Generally achievement-oriented and tend to finish job	569 (76.3)
24–28	Value commitment and responsibility highly	103 (13.8)
mean 20.62		sd 2.6

***Students’ Emotional Styles***

Respondents who were essentially stable and calm comprised 80.4% of the sample; the remainder experienced or expressed rather strong emotions (see Table 8). The mean score, being 2.33 units higher than the midpoint, appeared at 19.83. Although most of the respondents in this study were stable emotionally, a large percentage (19.3%) showed that they experienced strong emotions with a few individuals who experienced very strong emotions.

**Table 8** Cumulative scores for students’ emotional styles

Score	Type of emotional style	Count(%)
7–11	Experience and express very strong and passionate emotions	2 (0.3)
12–17	Experience rather strong emotions	144 (19.3)
18–23	Essentially stable	520 (69.7)
24–28	Calm, cool and collected	80 (10.7)
mean 19.83		sd 2.93

A significant association seemed to exist between the emotional style with ethnic group, marital status and examination centre (Table 11). A small correlation, however, seemed to exist between the emotional style with the intellectual style (positively), and with examination weaknesses (negatively) (Table 13).

### *Students' Intellectual Styles*

The least difference between the mean score and the midpoint was observed here, that is 1.9, with a big majority (72.2%) of the respondents scoring in the range of 18–23, being open to new approaches. Only 10.2% of respondents actually preferred to challenge tradition. A very small positive correlation existed between intellectual openness with both examination preparedness and examination strategies (Table 13).

**Table 9** Cumulative scores for students' intellectual styles

Score	Type of intelligence	Count(%)
7–11	Prefer simple things in life	0 (0.0)
12–17	Prefer simple things but entertain less conventional ideas/values	131 (17.6)
18–23	Open to new approaches	539 (72.2)
24–28	Prefer to break new ground and challenge tradition	76 (10.2)
mean 19.40		sd 2.72

### *Students' Religiousness Styles*

Table 10 depicts the cumulative scores for the religiousness of the respondents.

**Table 10** Cumulative scores for students' sense of religiousness

Score	Category of religious commitment	Count(%)
7–11	Weak religious commitment	1 (0.1)
12–17	Moderate religious commitment	10 (1.3)
18–23	Strong religious commitment	228 (30.6)
24–28	Very strong religious commitment	507 (68.0)
mean 24.75		sd 2.65

It has been found that 98.6% of respondents were in the category of being strong and very strong in their religious commitment. The mean value of 24.75 was indicated, 7.25 units above the midpoint, the largest difference

compared to those of other personality styles so far. A small positive correlation seemed to exist between the religiousness style with examination motivation and examination strategies (Table 13).

**Some Observations on the Association and Correlations between Variables**

*Nominal associations (Cramer’s V) (Elifson, Runyon and Haber, 1998)*

The results strongly show that there were significant associations (0.200 and above) existing amongst some nominal variables with the cumulative scores of the students’ personality styles and their behaviour toward the examination (see Table 11 and 12).

**Table 11** The association among nominal variables of the students’ personalities

Nominal variable	Aspects of students’ personalities					
	exprsn	interp	work	emotn	intel	reign
gender	–	–	–	–	–	–
ethnicity	–	–	.235***	.291***	–	.289***
religion	–	–	–	–	–	.231***
programme taken	–	–	–	–	–	–
occupation	–	–	–	–	–	–
marital status	–	–	–	.200*	–	.229**
year of studies	–	–	–	–	–	–
examination centre	–	–	–	.200***	–	–
distance	–	–	–	–	–	–
CGPA category	–	–	–	–	.218**	–

\* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$

(exprsn = expression style, interp = interpersonal style, work = work style, emotn = emotional style, intel = intellectual style, reign = religiousness style, distance = distance from the place of stay or house to exam centre, CGPA = cumulative grade point average)

There were personality differences amongst DE students across ethnic groups, religious affiliations, marital status, examination centres and the CGPA categories. Also, no significance or only a very low association existed between gender, age, programme taken, occupation, year of study and distance *vis-a-vis* personality characteristics. The self-expressional

and interpersonal styles of the students had no association with all the nominal variables (see Table 11).

As shown in Table 12, ethnic groups, religious affiliations, ages, programmes taken, occupations, marital status, examination centres and CGPA categories had significant association with some behavioural aspects of distance education students towards the examination. Gender, year of study and distance has no significance or only a very low association with their behaviour towards the examination. Students' weaknesses do not have any association with any of the nominal variables.

**Table 12** Association among nominal variables with the students' behaviour towards the examination

Nominal variable	Behaviour towards the examination			
	Preparedness	Strategies	Motivation	Weaknesses
Gender	–	–	–	–
Ethnicity	.266***	.215*	.231**	–
Religion	–	–	.283***	–
Age	–	.238*	–	–
Programme taken	–	–	.219*	–
Occupation	–	.233**	–	–
Marital status	–	.271**	–	–
Year of study	–	–	–	–
Exam centre	.240**	–	–	–
Distance	–	–	–	–
CGPA category	.284**	–	.253*	–

\* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$

(Distance = distance from house to exam centre; CGPA = Cumulative Grade Point Average).

#### *Correlation Constants (Pearson's $r$ )*

Table 13 displays some of the correlations that exist amongst ratio scale variables across personality and behaviour measures.

Notice that there were moderate correlations (0.4–0.6) between the following variables: interpersonal styles with work styles, emotion styles and religiousness styles; work styles with emotional styles; examination preparation with examination strategy; and examination strategy with

examination motivation. A possible explanation for this would probably be that as adults, students who had already acquired certain desirable work styles and also adhered to praiseworthy religious values and practices were certainly expected to be stable emotionally. Socialisation at the work place would lead them to desire some form of paper qualification for which they had to pass specific examinations. In order to pass an examination, of course, they had to prepare some examination strategies which they had previously learned at colleges or schools.

**Table 13** Correlation among interval scale variables (Pearson's *r*)

	1	2	3	4	5	6	7	8	9	10	11
exprsn	1										
interp	.265	1									
work	<b>.317</b>	<b>.554</b>	1								
emotn	<b>.360</b>	<b>.509</b>	<b>.601</b>	1							
intel	.235	.289	<b>.323</b>	<b>.335</b>	1						
reliqn	.182	<b>.423</b>	.271	.254	.139	1					
prep	.170	.278	<b>.337</b>	.272	.206	.189	1				
strtg	.164	<b>.322</b>	.286	.258	.200	<b>.302</b>	<b>.537</b>	1			
motivn	.068 <sup>^</sup>	<b>.324</b>	.231	.183	.124	<b>.353</b>	<b>.337</b>	<b>.440</b>	1		
weakns	-.180	-.128	-.277	<b>-.313</b>	-.122	.019 <sup>^</sup>	-.122	-.062 <sup>^</sup>	.061 <sup>^</sup>	1	
CGPA	.016 <sup>^</sup>	.053	.110	.076*	.096	-.073*	<b>.217</b>	.147	.006 <sup>^</sup>	<b>-.252</b>	1

All values were significant at 0.001 except: \* $p < 0.05$  and <sup>^</sup> insignificant.

A small correlation (0.3) existed between the expressional styles with work styles and emotional styles; interpersonal styles with examination strategy and examination motivation; work styles with intellectual styles and examination preparation; emotional styles with intellectual styles and examination weaknesses; religiousness styles with examination strategy and examination motivation and examination preparation with examination motivation.

Examination preparation and the CGPA (0.217) showed a small correlation while examination weaknesses had a small negative correlation (0.252) with the CGPA as well. Understandably, the higher the scores of examination weaknesses, the lower the values of the CGPA.

## Conclusion

A large majority of the students made adequate preparation for the examination and had taken appropriate strategies prior to and during the examination sessions. The motivation to prepare well for the examination was high for the great majority of the students while the students' weaknesses in the examination were revealed in a small number (12%); however, some form of support provision was deemed necessary for the weak students.

Almost all students had shown adequate positive characteristics in the main personality domains: expressional style, interpersonal style, emotional style, intellectual style, religious adherence style and work-related style.

There were differences in some dimensions of the personality with respect to certain aspects of the students' demography. Similarly, there were differences in certain aspects of the students' behaviour toward the examination because of demographic differences.

Moderate (0.4 to 0.6) to low (0.3) correlations existed among certain aspects of the students' personalities and their behaviours toward the examination, suggesting that personality traits play a role in the examination behaviour and the academic performance of the adult distance students.

## References

- Ab. Rasid Mat Zin and Mustafa Fadzil Farid Wajidi. 2000. Masalah-masalah yang menghalang pelajar-pelajar pendidikan jarak jauh USM daripada menghadiri kursus intensif. *Malaysian Journal of Distance Education* 2(1): 14–32.
- Banks, O. 1989. *Sosiologi pendidikan*. Trans. Robiah Sidin and Zaiton Sidin. Kuala Lumpur: Dewan Bahasa dan Pustaka.
- Blaikie, N. 2000. *Designing social research*. Cambridge, UK: Polity Press.
- Brown, W. F. and W. H. Haltzman. 1967. *Survey of study habits and attitudes (SSHA), Form C*. New York: The Psychological Corporation.
- Chamorro-Premusic, T. and A. Furnham. 2003a. Personality predicts academic performance: Evidence from two longitudinal university samples. *Journal of Research in Personality* 37(4): 319–338.



- . 2003b. Personality traits and academic examination preference. *European Journal of Personality* 17(3): 237–250.
- Elifson, K., R. P. Runyon and A. Haber. 1998. *Fundamental of social statistics*. 3rd ed. International Edition: 393–401. Boston: McGraw-Hill.
- Furnham, A. and T. Chamorro-Premusic. 2004. Personality and intelligence as predictors of statistics examination grades. *Personality and Individual Differences* 37(5): 943–955.
- Furnham, A., T. Chamorro-Premusic and F. McDougall. 2002. Personality, cognitive ability and beliefs about intelligence as predictors of academic performance. *Learning and Individual Differences* 14(1): 47–64.
- Furnham, A., T. Chamorro-Premusic, G. Dissou and P. Heaven. 2005. Personality and preference for academic assessment: A study with Australian University students. *Learning and Individual Differences* 15(4): 247–256.
- Harary, K. and E. Donahue. 1994. *Who do you think you are: The Berkeley Personality Profile*. San Francisco: Harper.
- Liyanage, J. B. R. 2004. An exploration of language learning strategies and learner variables of Sri Lankan learners of English as a second language with special preference to their personality types. PhD diss., Griffith University.
- Phillips, P., C. Abraham and R. Bond. 2003. Personality, cognition and university students' examination performance. *European Journal of Personality* 17(6): 435–448.
- Rovai, A. P. and L. D. Grooms. 2004. The relationship of personality-based learning style preference and learning among online graduate students. *Journal of Computing in Higher Education* 16(1): 30–47.
- Schultz, D. and S. E. Schultz. 1994. *Theories of personality*. Pacific Grove, California: Brooks/Cole Publishing Company.
- Woolfolk, A. E. 1995. *Educational psychology*. 6th ed. Singapore: Allyn and Bacon.