

Soretha Beets, Alida Nienaber & Karel Botha

Psychological mindedness and academic achievement of psychology students in a higher education environment

First submission: 18 September 2010

Acceptance: 7 June 2011

This article aims to determine the relationship between psychological mindedness and academic achievement and whether there are differences in demographic variables in relation to both psychological mindedness and academic achievement. A cross-sectional design was used and 211 undergraduate students participated. A biographic questionnaire as well as the psychological mindedness scale was administered and the academic records of the participants were drawn. The data were analysed by calculating correlations, t-tests and an analysis of variance. Although there is a correlation between academic achievement and psychological mindedness, other factors may also play a role in the academic achievement of undergraduate university students. Limitations and recommendations were indicated.

Psigologiese indagtigheid en akademiese prestasie van psigologie studente in 'n hoëronderwysomgewing

Die doel van hierdie studie is om die verwantskap tussen psigologiese indagtigheid en akademiese prestasie te bepaal en ook of daar verskille is in die demografiese veranderlikes in verhouding tot beide psigologiese indagtigheid en akademiese prestasie. 'n Dwarsdeursnit-ontwerp is gebruik en 211 voorgraadse studente het deelgeneem. 'n Biografiese vraelys sowel as die "psychological mindedness scale" is afgeneem, en die akademiese rekords van die deelnemers is getrek. Die data is ontleed deur die berekening van korrelasies, t-toetse en 'n analise van variansie. Alhoewel daar 'n korrelasie tussen akademiese prestasie en psigologiese indagtigheid is, kan ander faktore ook 'n rol in die akademiese prestasie van voorgraadse studente speel. Beperkinge en aanbevelings is aangedui.

Ms S Beets, Africa Unit for Transdisciplinary Health Research; Dr A W Nienaber & Prof K F H Botha, School for Psychosocial Behavioural Sciences: Psychology, North-West University (Potchefstroom Campus), Private Bag X6001, Potchefstroom 2520; E-mail: soretha.beets@nwu.ac.za, alida.nienaber@nwu.ac.za & karel.botha@nwu.ac.za.



Acta Academica
2011 43(3): 32-56
ISSN 0587-2405
© UV/UFS
<<http://www.ufs.ac.za/ActaAcademica>>

SUN MODIA
BLOEMFONTEIN

The main objective of this study is to determine the relationship between academic achievement and psychological mindedness. Traditionally, educational institutions have viewed intelligence to be the best predictor of academic achievement. According to O'Connor & Paunonen (2007: 973), the relationship between academic achievement and intelligence is weaker than expected, especially in a higher education environment. In addition, Diseth (2002: 228) found a lack of relationship between intelligence and academic achievement. Academic achievement may thus depend on more than just intelligence¹ as students with high cognitive abilities are often outperformed by students with lower cognitive abilities. Kapp (2000: 152) mentions that “as work becomes more complex and collaborative, emotional competence will distinguish those who flourish from those who falter”.

As an important part of the psychology of emotion and inter- and intrapersonal awareness, psychological mindedness may be used to measure emotional competence. According to Beitel *et al* (2009: 370), psychological mindedness has wide-ranging appeal and utility as a result of it being not only a basic psychological construct but also perhaps the most important psychological strength.

Appelbaum (1973: 36) initially defined psychological mindedness as “a person’s ability to see relationships between thoughts, feelings and actions, with the goal of learning the meanings of the experience and behavior”. This definition includes cognitive, affective and motivational components (Hall 1992: 132) as well as interest and ability (Hall 1992: 134, Shill & Lumley 2002: 132), with the focus on the individual (Conte *et al* 1996: 250) and thus self-awareness (Beitel *et al* 2004: 740).

Farber’s (1985: 170) definition differs from the above in that psychological mindedness is viewed as an interest in or disposition to think about phenomena in psychology, rather than an ability to understand it accurately (Hall 1992: 135), and that “others” are included (Beitel *et al* 2004: 740, Conte *et al* 1996: 250-1).

1 Cf Farsides & Woodfield 2002: 1238, Kapp 2000: 151, Naderi *et al* 2009: 110, Ochse 2003: 67, Zeegers 2004: 53-4.

Hall's (1992: 139-40) definition includes both interest and ability, but the latter is limited by interest, and interest and ability limit the occurrence of behaviour that is psychologically minded (Hall 1992: 135-6). In line with Appelbaum's (1973: 36) definition, Hall (1992: 139-40) only focuses on the individual.

Conte *et al* (1996: 258) view psychological mindedness as

an attribute of an individual that presupposes a degree of access to one's feelings, a willingness to try to understand oneself and others, a belief in the benefits of discussing one's problems, an interest in the meaning and motivation of one's own and others' thoughts, feelings, and behavior, and a capacity for change.

This comprehensive definition includes the self and others, as well as cognitive, affective and motivational components. Although psychological mindedness may lead to certain desired outcomes, this model also includes both interest and ability.

The latest definition by Nyčlíček & Denollet (2009: 32) is in line with Hall's definition, according to which the affective component is more important than the intellectual component (Nyčlíček & Denollet 2009: 32) as understanding behaviour intellectually is usually at the expense of learning about it in an affective manner (Hall 1992: 137). Nyčlíček & Denollet (2009: 32) state that psychological mindedness is thus a personal (individual) characteristic that reflects not only interest but also ability, and that it can be changed by meaningful external sources.

Psychological mindedness thus includes cognitive, affective and motivational components and may be viewed as a characteristic, an interest and an ability, with a focus on both the individual and others.

According to Fagan & Squitiera (2002: 101), academically strong students may possess characteristics that may be associated with psychological mindedness. There might thus be a relationship between psychological mindedness and academic achievement.

Academic achievement can be viewed as success in the academic environment. This success may have different meanings

and can vary from merely passing a module to obtaining a degree with distinction, in other words, to fulfil one's potential. In higher education, various factors can have an impact on students' academic achievement (Zeegers 2004: 35) as students differ in various ways (Kaighobadi & Allen 2008: 427). They will, for example, have various intelligence levels, behaviours, lifestyles, study skills and habits, experiences, backgrounds and demographics. Although intellectual variables (previous grades) significantly predict academic achievement, the inclusion of non-intellectual variables such as demographics (for example, gender, race, age, degree/diploma enrolled for), behavioural factors (for example, the amount of time spent for preparation), and personality (for example, motivation and confidence) are important, as it increases predictability (Kaighobadi & Allen 2008: 427-8). While this article investigates demographics in relation to academic achievement, behaviour factors and personality fall outside the scope of this study. As demographics may have an influence on academic achievement which, in turn, may be influenced by psychological mindedness, this article will investigate the relationship between demographics and psychological mindedness. The focus on demographics could also indicate the extent to which psychological mindedness is context-sensitive, that is, if the context of gender, race and age influence psychological mindedness.

The correlation between psychological mindedness and academic achievement as well as the differences in demographics in relation to both psychological mindedness and academic achievement will thus be investigated. This study is significant and important, as no previous research was found that investigated the relationship between psychological mindedness, academic achievement and demographics. Increased knowledge regarding the factors influencing academic achievement may be beneficial in pointing students in the right direction, identifying students who need assistance, and helping them as needed to enable them to achieve academic success.

1. Aims

This study aims to determine first whether there is a relationship between psychological mindedness and measures of academic achievement, and secondly whether students' psychological mindedness and academic achievement differ on the grounds of demographics.

2. Methodology

2.1 Design

A cross-sectional design was chosen for this study. According to Field (2009: 784), this type of design observes natural occurrences, without interfering with these directly.

2.2 Participants

The participants consisted of 211 undergraduate students (degree/diploma) enrolled for a psychology module/modules at the Potchefstroom Campus of the North-West University (*cf* Table 1). From this sample 67 (31.75%) were first years, 61 (28.91%) were second years and 83 (39.34%) were third years. This classification was purely academic and the students' historical year was not taken into account. Students who were simultaneously enrolled for modules falling into various academic years were classified according to the academic year in which they were enrolled for the majority of their modules. The majority of the students were in the age groups 19 years (17.06%), 20 years (23.22%) and 21 years (33.65%). Of the students participating in the study, 166 (78.67%) were females and 45 (21.33%) were males. Regarding race, the participants were classified as follows: 170 (80.57%) were white, 34 (16.11%) were black and 7 (3.32%) were coloured. Of the participants 133 (63.03%) were enrolled for the Bachelor of Arts (BA) degree, 43 (20.38%) for the Bachelor of Science (BSc) degree, 17 (8.06%) for the Bachelor of Social Work (BSW) degree, 8 (3.79%) for the Bachelor of Education (BEd) degree, and 10 (4.74%) for other Bachelors degrees/diplomas.

2.3 Data collection

Data on psychological mindedness was obtained by means of the psychological mindedness scale, while data on academic achievement was obtained from the academic records of the participants. Each participant also completed a biographical questionnaire.

2.3.1 The psychological mindedness scale

The psychological mindedness scale (Conte *et al* 1990) consists of 45 items and is a self-report measure of psychological mindedness. Items include statements such as “I am always curious about the reasons why people behave as they do” and “Usually, if I feel an emotion, I can identify it”. On each item participants were required to choose between four possible options: strongly agree, agree, disagree, and strongly disagree, with a higher score indicating greater psychological mindedness.

In a sample of 256 psychiatric outpatients the psychological mindedness scale revealed good internal consistency (Cronbach *alpha* = 0.87) and temporal stability ($r(20) = 0.92$).² In a non-clinical sample Shill & Lumley (2002: 142) found that the psychological mindedness scale had acceptable internal consistency (Cronbach *alpha* = 0.8). As these samples may not be relevant to this study, a Cronbach *alpha* coefficient for the psychological mindedness scale was also calculated for the sample used and the internal consistency was found to be acceptable (Cronbach *alpha* = 0.87). According to Spatz & Kardas (2008: 108), a Cronbach *alpha* must be 0.8 or higher in order for a measure or scale to have acceptable reliability.

2.3.2 Academic achievement

Participants' academic achievement was measured in three ways: the average of the final marks obtained by participants in their first core module; the average of the final marks obtained by participants in their second core module; and the average of the final marks obtained by participants over all their modules.

2 Cf Beitel & Cecero 2003: 167, Beitel *et al* 2004: 743, Cecero *et al* 2008: 109, Conte *et al* 1996: 252.

Students usually take two core modules. These modules depend on the students' curricula, and it is indicated on their academic records. For purposes of this study, psychology was used as core module 1 and the remaining core module as core module 2. For participants who did not take psychology as core module, either one of the two core modules taken was used as core module 1 (this was the case for 7% of the participants) and the remaining core module as core module 2. Some participants did generic degrees (for example, BEd) where almost all the modules taken were core modules from the same subject group, while others did degrees/diplomas with only one core module. For these participants there is thus only one core module. The average for these core modules was included under the average for core module 2 as the researchers wanted the average of core module 1 to reflect to a large extent the averages obtained for psychology.

2.3.3 Biographical data

A biographical questionnaire was developed to obtain information regarding the participants' age, gender, race, degree/diploma enrolled for, and academic year.

2.4 Ethical considerations and procedure

The ethics committee of the North-West University (approval no 06K20) approved this study. Questionnaires were administered during the scheduled class times for undergraduate psychology modules. At the start of the lectures students were asked to participate in the study and they were briefly informed on the objectives of the study and what participation entailed and on how the data obtained will be used. Participation was voluntary and the students who agreed to participate received a consent form, a biographical questionnaire and the psychological mind-edness scale. Signed consent forms served as an indication that participants had not only agreed to participate given the objectives of the study and the nature of participation, but also granted permission to the researchers to access their academic records. The questionnaires took approximately 20 minutes to

complete. Participants failing to provide all the information required were excluded from the study. Academic records of the participants were drawn from the North-West University's student administration system, by using student numbers. The data obtained from the questionnaires, as well as the relevant data from the academic records were captured in a Microsoft Office Excel spreadsheet, by coding it, for purposes of confidentiality.

2.5 Data analysis

Data were analysed by the Statistical Consultation Service at the Potchefstroom Campus of the North-West University with the STATISTICA computer program (StatSoft 2009). Descriptive statistics were calculated for psychological mindedness and the biographical variables.

Correlations were calculated between age, the number of modules taken, the average of core module 1, the average of core module 2, the average over all modules and psychological mindedness. According to Steyn (2009: 3), a correlation of 0.1 is considered small, whereas a correlation of 0.3 is considered medium and a correlation of 0.5 as large.

For this study only the largest two groups in the variables race and degree/diploma enrolled for, were used for analyses as the remaining groups were rather insignificant with regard to frequency. The students' independent t-tests, where the means of two groups are compared, were thus performed for gender (female and male), race (white and black) and degree (BA or BSc). A one-way analysis of variance (ANOVA), where the means of the number of modules, the average for core module 1, the average for core module 2, the average over all modules, and psychological mindedness of more than two groups (first-, second- and third-year students) are compared, were performed for the various academic years. The above tests were done in order to obtain p values (statistical significance of the difference between groups) and d values (practical significance of the differences between groups). Practical significance is also referred to as effect size or Cohen's d. Cohen (1988: 25-6) classified effect sizes as follows: a

d value equal to approximately 0.2 indicates a small effect, while a d value of approximately 0.5 indicates a medium effect, and a d value of 0.8 or larger indicates a large effect.

3. Results

Table 1 presents the Cronbach *alpha* coefficient as well as the frequencies and the means, range and standard deviations of psychological mindedness for all the biographical variables.

Table 1: Descriptive statistics for psychological mindedness and the biographical variables (n=211)

Item	Category	Frequency	Percentage	Psychological mindedness	
				Mean (Range)	Standard deviation
Total for psychological mindedness (Cronbach α = 0.87)				131.59 (95.00-166.00)	11.84
Academic year	First	67	31.75	130.21 (95.00-161.00)	12.30
	Second	61	28.91	131.41 (102.00-166.00)	12.83
	Third	83	39.34	132.84 (111.00-157.00)	10.67
Age	18	10	4.74	128.33 (111.00-145.00)	11.62
	19	36	17.06	128.44 (106.00-148.00)	9.71

Beets *et al*/Psychological mindedness and academic achievement

Item	Category	Frequency	Percentage	Psychological mindedness	
				Mean (Range)	Standard deviation
	20	49	23.22	133.31 (102.00-166.00)	13.78
	21	71	33.65	133.35 (109.00-157.00)	11.14
	22	17	8.06	130.82 (114.00-161.00)	11.44
	23	12	5.69	124.00 (95.00-143.00)	13.99
	24 and older	16	7.58	134.19 (119.00-152.00)	9.15
Gender	Female	166	78.67	132.09 (102.00-166.00)	11.51
	Male	45	21.33	129.76 (95.00-161.00)	12.96
Race	Black	34	16.11	129.03 (95.00-152.00)	9.69
	White	170	80.57	132.19 (102.00-166.00)	12.09
	Other	7	3.32	129.57 (109.00-150.00)	14.97
Degree	Bachelor of Arts (BA)	133	63.03	130.99 (95.00-165.00)	12.42

Item	Category	Frequency	Percentage	Psychological mindedness	
				Mean (Range)	Standard deviation
	Bachelor of Science (BSc)	43	20.38	133.90 (106.00-166.00)	11.82
	Bachelor of Social Work (BSW)	17	8.06	131.82 (111.00-147.00)	10.16
	Bachelor of Education (BEd)	8	3.79	131.88 (120.00-146.00)	10.25
	Other	10	4.74	128.78 (120.00-137.00)	6.32

As the data were normally distributed ($p > 0.2$ according to the Kolmogorov-Smirnov test and $p = 0.0337$ according to the Shapiro-Wilk test), Pearson correlations (*cf* Table 2) were calculated.

Table 2: Correlations between age, the number of modules, academic achievement and psychological mindedness

	Age	NM	ACM1	ACM2	AAM	PM
Age	1.00					
NM	-0.04	1.00				
AMM1	-0.04	-0.28**	1.00			
AMM2	-0.00	-0.15*	0.67***	1.00		
AAM	-0.01	-0.22*	0.81***	0.90**	1.00	
PM	0.08	-0.09	0.37**	0.20*	0.31**	1.00

NM = Number of modules

ACM1 = Average of core module 1

ACM2 = Average of core module 2

AAM = Average over all modules

PM = Psychological mindedness

r = correlation - * if $r \geq 0.1$ (small), ** if $r \geq 0.3$ (medium), *** if $r \geq 0.5$ (large)

Age showed no significant correlations with any variables (*cf* Table 2) and was thus not included in further analysis. As the number of modules showed negative correlations with all the other variables (*cf* Table 2), its effect needed to be partialled out in order to obtain more accurate results. Partial correlations between only the average of core module 1, the average of core module 2, and the average over all modules and psychological mindedness were thus calculated in the next step (*cf* Table 3).

Table 3: Correlations between academic achievement and psychological mindedness

	ACM1	ACM2	AAM	PM
AMM1	1.00			
AMM2	0.66***	1.00		
AAM	0.80***	0.90***	1.00	
PM	0.36**	0.19*	0.30**	1.00

ACM1 = Average of core module 1

ACM2 = Average of core module 2

AAM = Average over all modules

PM = Psychological mindedness

r = correlation - * if $r \geq 0.1$ (small), ** if $r \geq 0.3$ (medium), *** if $r \geq 0.5$ (large)

Psychological mindedness correlated positively with the average of core module 1, the average of core module 2 and the average over all modules. The highest correlation was between psychological mindedness and the average of core module 1 ($r=0.36$), followed by the correlation between psychological mindedness and the average over all modules ($r=0.30$), and the correlation between psychological mindedness and ($r=0.19$) the average of core module 2. While the correlations between psychological mindedness and both the average of core module 1 ($r=0.36$) and the average over all modules ($r=0.3$) were medium, the correlation between psychological mindedness and the average of core module 2 ($r=0.19$) was low. From all the variables tested, the average of core module 1 (mostly psychology) thus correlated the best with psychological mindedness.

Table 4 indicates the differences between the means of two groups with regard to gender, race and degree enrolled for.

Table 4: T-tests for the differences in the number of modules, the average of core module 1, the average of core module 2, the average over all the modules and the psychological mindedness between gender, race and degree

	Gender					
	Female		Male		p	d
	M	SD	M	SD		
NM	13.32	3.08	13.89	2.30	0.24	0.19
ACM1	67.49	10.20	65.82	9.44	0.36	0.16
ACM2	64.80	13.14	59.91	11.19	0.02*	0.37+
AAM	65.88	11.54	60.02	10.20	<0.001*	0.51++
PM	132.09	11.51	129.76	12.96	0.24	0.18

	Race					
	White		Black		p	d
	M	SD	M	SD		
NM	13.03	2.92	15.41	2.20	<0.001*	0.82+++
ACM1	68.48	10.14	61.94	8.61	<0.001*	0.64++
ACM2	64.72	13.26	58.91	10.42	0.02*	0.44+
AAM	65.80	11.79	59.62	9.18	<0.001*	0.52++
PM	132.03	12.09	129.03	9.69	0.15	0.26+

	Degree					
	BA		BSc		p	d
	M	SD	M	SD		
NM	13.67	2.51	11.58	2.33	<0.001*	0.83+++
ACM1	66.41	10.70	70.05	7.47	0.07	0.38+
ACM2	62.07	14.24	66.95	10.50	0.04*	0.34+
AAM	62.87	12.21	69.21	9.83	<0.001*	0.52++
PM	130.91	12.42	133.91	11.82	0.18	0.23+

NM = Number of modules; ACM1 = Average of core module 1; ACM2 = Average of core module 2; AAM = Average over all modules; PM = Psychological mindedness; M = Mean; SD = Standard deviation; p = statistical significance - * if $p < 0.05$; d = practical significance - + if $d \geq 0.2$ (small effect), ++ if $d \geq 0.5$ (medium effect), +++ if $d \geq 0.8$ (large effect)

Table 4 indicates that there was no statistically or practically significant difference between male and female students regarding psychological mindedness ($p=0.24$, $d=0.18$), the number of modules ($p=0.24$, $d=0.19$) and the average of core module 1 ($p=0.36$, $d=0.16$). Male and female students differed significantly, statistically and practically, on the average of core module 2 ($p=0.02$, $d=0.37$) and the average over all modules ($p<0.001$, $d=0.51$), with female students performing better than their male counterparts on both variables. The practical significance for the average of core module 2 is of a small effect, while it is of a medium effect for the average over all the modules. These indicate that the difference between the averages of male and female students was larger for the average over all modules than for the average of core module 2.

There was no statistically significant difference between black and white students regarding psychological mindedness ($p=0.15$), while the practical significance was small ($d=0.26$). Statistically, black students took significantly more modules than white students ($p<0.001$) with a large practical effect ($d=0.82$). Statistically, white students obtained significantly higher scores than black students on the average of core module 1 ($p<0.001$), the average of core module 2 ($p=0.02$) and the average over all modules ($p<0.001$). The practical significance was of a medium effect for the average of core module 1 ($d=0.64$) and the average over all modules ($d=0.52$), and of a small effect for the average of core module 2 ($d=0.44$). These indicate that the difference between black and white students was the largest for the average of core module 1, followed by the average over all modules and the average of core module 2.

There was no statistically significant difference between students enrolled for BA and BSc degrees regarding psychological mindedness ($p=0.18$). With regard to practical significance, the effect was small ($d=0.23$). With regard to the number of modules, BA students statistically took significantly more ($p<0.001$) modules than BSc students. The practical significance was large ($d=0.83$). The difference between the means of the average of core module 1, for students who studied BA and , respectively, was

not statistically significant ($p=0.07$) and the effect size was small ($d=0.38$). Statistically, BSc students performed significantly better ($p=0.04$) than BA students concerning the average of core module 2. The effect size, however, was small ($d=0.34$). Statistically, BSc students also performed significantly better ($p<0.001$) concerning the average over all modules. The effect size was medium ($d=0.52$), indicating that the difference between the means of BA and BSc students were larger for the average over all modules than for the average of core module 2.

Table 5 indicates the differences between the means for the number of modules, the average of core module 1, the average of core module 2, the average over all modules and psychological mindedness of three groups with regard to academic year.

Table 5: ANOVA for differences in the number of modules, the average of core module 1, the average of core module 2, the average over all modules and the psychological mindedness between the various academic year groups

	Academic year 1 (mean)	Academic year 2 (mean)	Academic year 3 (mean)	MSE	p	d ₁₂	d ₁₃	d ₂₃
NM	13.72	14.64	12.34	7.75	<0.001*	0.33+	0.50++	0.83+++
ACM1	66.84	66.37	67.93	101.44	0.70	0.05	0.11	0.16
ACM2	59.33	62.58	68.07	153.13	<0.001*	0.26+	0.71++	0.44+
AAM	60.62	63.42	68.71	121.14	<0.001*	0.25+	0.73++	0.48+
PM	94.79	93.60	92.16	140.38	0.40	0.10	0.22+	0.12

NM = Number of modules

ACM1 = Average of core module 1

ACM2 = Average of core module 2

AAM = Average over all modules

PM = Psychological mindedness

MSE = Mean square error

p = statistical significance - * if $p < 0.05$

d = practical significance - + if $d \geq 0.2$ (small effect), ++ if $d \geq 0.5$ (medium effect), +++ if $d \geq 0.8$ (large effect)

d₁₂ = difference between academic year 1 and academic year 2

d₁₃ = difference between academic year 1 and academic year 3

d₂₃ = difference between academic year 2 and academic year 3

According to Table 5, there was no statistically significant difference between students from various academic years regarding psychological mindedness ($p=0.4$). While there was no practically significant difference regarding psychological mindedness between first years and second years ($d_{12}=0.10$) and between second years and third years ($d_{23}=0.12$), the practical significance of the difference between first and third years was small ($d_{13}=0.22$). There was no statistically or practically significant difference between students from various academic years regarding the average of core module 1 ($p=0.7$, $d_{12}=0.05$, $d_{13}=0.11$, $d_{23}=0.16$). Statistically, students from various academic years differed significantly on the number of modules ($p<0.001$), the average of core module 2 ($p<0.001$) and the average over all modules ($p<0.001$). For the number of modules, the practical significance of the difference between the first and second year was small ($d_{12}=0.33$), while it was medium ($d_{13}=0.50$) for the difference between the first and third year, and large ($d_{23}=0.83$) for the difference between the second and third year. For the average of core module 2 the practical significance of the difference between the first and second year was small ($d_{12}=0.26$), while it was medium ($d_{13}=0.71$) for the difference between the first and third year, and again small ($d_{23}=0.44$) for the difference between the second and third year. For the average over all modules the practical significance of the difference between the first and second year was small ($d_{12}=0.25$), while it was medium ($d_{13}=0.73$) for the difference between the first and third year, and small ($d_{23}=0.48$) for the difference between the second and third year.

5. Discussion

This study aimed to determine whether there is a relationship between psychological mindedness and academic achievement, and whether there are differences in demographic variables (academic year, gender, race, degree/diploma enrolled for) in relation to both psychological mindedness and academic achievement, respectively.

Psychological mindedness correlated positively with all the measures of academic achievement. The average of core module 1 (mainly psychology) showed the highest correlation with psychological mindedness, followed by the average over all modules and the average of core module 2. Psychological mindedness may correlate with academic achievement, as students with a high psychological mindedness will probably be, as indicated by Conte *et al* (1996: 258) and Nyčliček & Denollet (2009: 32), interested in and understand not only the meaning and motivation behind emotions (affective aspects), thoughts (cognitive aspects) and behaviour (motivational aspects), but also the relationships between them. As the correlations between psychological mindedness and the measures of academic achievement were of a small to medium nature it can be deduced that although psychological mindedness correlates with academic achievement, other factors may also be important.

Psychological mindedness did not differ significantly for students of various academic years, gender, race and degree/diploma enrolled for, respectively. With regard to gender, the results of this study contrast with those of Shill & Lumley (2002: 139), who found that female students obtained higher scores on psychological mindedness than male students. However, Shill & Lumley (2002: 140) also found no differences between black and white students with regard to psychological mindedness. A certain demographic characteristic is thus not an indication of either a high or low psychological mindedness.

The negative correlation between the number of modules and the measures of academic achievement indicates that the more modules students take, the lower their academic achievement. This is to be expected as less time per module is then available. As psychological mindedness and academic achievement have a positive relationship with one another, it could be argued that students with a high psychological mindedness may not enrol for an extra module/modules because they are emotionally more sensitive (Conte *et al* 1996: 285) to affectively sense that an extra module/modules may lead to a too heavy workload. However,

the fact that there is no relationship between psychological mindedness and the number of modules contradicts this notion. Further research is required to explore this.

Age showed a very low correlation with the measures of academic achievement. Likewise, a study by Frischenschlager *et al* (2005: 60) did not show any correlation between the age of students and their academic achievement. Other studies concluded that the academic achievement of older or mature students is better (Kaighobadi & Allen 2008: 433, Sheard 2009: 198, Halpern 2007: 346), while Vaez & Laflamme (2008: 191) found that younger students perform better academically. Results regarding the relationship between age and academic achievement are thus mixed and should be explored in future research.

Students' academic achievement in psychology is consistent, irrespective of their academic year. From the average of core module 2 and the average over all modules, it is clear that the higher the student's academic year, the higher his/her academic achievement as the mean of academic year 1 is the lowest for both the average for core module 2 (59.33) and the average over all modules (60.62) and the mean of academic year 3 is the highest for both the average of core module 2 (68.07) and the average over all modules (68.17). The mean of academic year 2 is between those of academic year 1 and academic year 3 for both the average of core module 2 (62.58) and the average over all modules (63.42). This may be explained by students putting in more effort as they reach the completion of their studies, and by the decreasing number of modules students take as they progress from one academic year to the next, provided that modules are not failed and thus carried over to the following year. With regard to academic year, this study found that academic achievement, excluding the achievement in psychology, increased with academic year. This is in contrast with psychological mindedness which is not affected by academic year. A possible explanation for this may be that not many of the courses are aimed at increasing psychological mindedness, while students learn more competencies that assist

them to achieve academic success as they progress from one academic year to the next.

There is no gender difference in the averages obtained for psychology. This is in line with Leman's (1999: 234) statement that male and female students perform more or less equally in the social sciences. However, male and female students did differ significantly on the average of core module 2 and the average over all modules, with female students performing better. In this study female students thus have a tendency to achieve better academically than their male counterparts. This finding is in line with those of Sheard (2009: 198) and Kaighobadi & Allen (2008: 433). This may be explained by females having better work habits and language abilities (Dayioğlu & Türüt-Aşik 2007: 256) and higher commitment (Sheard 2009: 198). By contrast, research by Frischenschlager *et al* (2005: 59) indicates that male students are more successful. Vaez & Laflamme (2008: 191) also found that male students complete their degrees in a shorter time and thus perform better academically. Results with regard to the difference in the academic achievement between male and female students are thus mixed. According to Leman (1999: 234), the subject (course) that a student studies may play a role in explaining gender differences in academic achievement, and students of a certain gender may thus tend to perform better in some courses.

There were differences between the races with regard to all the measures of academic achievement, with white students tending to perform better academically. Similarly, Kaighobadi & Allen (2008: 433) found that the academic achievement of white students is higher than that of other racial groups. According to Leman (1999: 241), students of Indian origin perform best, while black students tend to under-perform. In this study black students might have performed poorer than white students, as they tend to enrol for more modules. With regard to race, this study found that, while white students tend to achieve better academically, psychological mindedness is not affected by race. This may be explained by the fact that the majority of white students' academic background may be more advantageous in the higher

education environment. Rushton & Skuy (2000: 263) confirm this, stating that South African blacks still have poorer schools, libraries and study facilities than whites. However, competencies associated with psychological mindedness can be learned in any environment.

Students enrolled for BA and BSc degrees, respectively, did not show any difference with regard to the average performance in psychology, but they did show differences with regard to the average for core module 2 and the average over all modules, with BSc students performing better. Students enrolled for BSc degrees thus tend to achieve better academically than students enrolled for BA degrees, excluding the academic achievement in psychology. As their psychological mindedness is not different, the better overall achievement of BSc students may be explained by them taking fewer modules than BA students or by BSc students being more motivated to work hard, in comparison to BA students, as a BSc degree is labelled as being rather difficult.

In summary: the higher a student's psychological mindedness, the higher his/her academic achievement. Psychological mindedness did not differ for students of various academic years, genders, race and degree/diploma enrolled for, respectively. Academic achievement showed correlations with academic year, gender, race and degree/diploma enrolled for, respectively. Third-year white female students studying towards BSc degrees thus tend to achieve better academically than other groups. Thus, although there is a correlation between psychological mindedness and academic achievement, other factors not related to psychological mindedness also play a role.

A limitation of this study is that the Psychological Mindedness Scale is a self-report measure of how participants view themselves and not of how others view them. Another limitation is that the results of this study cannot be generalised to the South African population as the homogeneous sample (undergraduate students from one university) used was rather small and lacked diversity.

It is recommended that further studies on psychological mindedness and academic achievement include a questionnaire that captures the participants' mood, and that a larger and more diversified sample be used. It is also recommended that the five factors included in the psychological mindedness scale be analysed separately, as this may give an indication of exactly which factors in the scale correlate the best with academic achievement. If this is known, specific attention may be paid to the development of these factors among students who are struggling academically, by for example, developing and presenting intervention programmes on psychological mindedness. As higher psychological mindedness is associated with better academic achievement, such a programme might not only assist students in developing certain beneficial psychological skills but will also help them to improve on their academic results.

Bibliography

APPELBAUM S A

1973. Psychological mindedness: word, concept and essence. *International Journal of Psycho-Analysis* 54(1): 35-46.

BEITEL M & J J CECERO

2003. Predicting psychological mindedness from personality style and attachment security. *Journal of Clinical Psychology* 59(1): 163-72.

BEITEL M, E FERRER & J J CECERO

2004. Psychological mindedness and awareness of self and others. *Journal of Clinical Psychology* 61(6): 739-50.

BEITEL M, A HUTZ, K M SHEFFIELD, C GUNN, J J CECERO & D T BARRY

2009. Do psychologically-minded clients expect more from counseling. *Psychology and Psychotherapy: Theory, Research and Practice* 82(4): 369-83.

CECERO J J, M BEITEL & T PROUT

2008. Exploring the relationship among early maladaptive schemas, psychological mindedness and self-reported college adjustment. *Psychology and Psychotherapy: Theory, Research and Practice* 81(1): 105-18.

COHEN J

1988. *Statistical power analysis for the behavioral sciences*. 2nd ed. Hillsdale, NJ: Lawrence Erlbaum Associates.

CONTE H R, R PLUTCHIK, B B JUNG, S PICARD, B KARASU & A LOTTERMAN

1990. Psychological mindedness as a predictor of psychotherapy outcome: a preliminary report. *Comprehensive Psychiatry* 31(5): 426-31.

CONTE H R, R RATTO & T B KARASU

1996. The psychological mindedness scale: factor structure and relationship to outcome of psychotherapy. *Journal of Psychotherapy Practice and Research* 5(3): 250-9.

DAYIOĞLU M & S TÜRÜT-AŞIK

2007. Gender differences in academic performance in a large public university in Turkey. *Higher Education* 53(2): 255-77.

DISETH A

2002. The relationship between intelligence, approaches to learning and academic achievement. *Scandinavian Journal of Educational Research* 46(2): 219-30.

FAGAN R & P SQUITIERA

2002. The relationship between personality characteristics and academic success in Law School. *Evaluation and Research in Education* 16(2): 95-103.

FARBER B A

1985. The genesis, development, and implications of psychological mindedness in psychotherapists. *Psychotherapy* 22(2): 170-7.

- FARSIDES T & R WOODFIELD
2002. Individual differences and undergraduate academic success: the roles of personality, intelligence and application. *Personality and Individual Differences* 34(7): 1225-43.
- FIELD A
2009. *Discovering statistics using SPSS*. 3rd ed. Los Angeles: Sage.
- FRISCHENSCHLAGER O, G HAIDINGER & L MITTERAUER
2005. Factors associated with academic success at Vienna Medical School: prospective survey. *Croatian Medical Journal* 46(1): 58-65.
- HALL J A
1992. Psychological-mindedness: a conceptual model. *American Journal of Psychotherapy* 46(1): 131-40.
- HALPERN N
2007. The impact of attendance and student characteristics on academic achievement: findings from an undergraduate business management programme. *Journal of Further and Higher Education* 31(4): 335-49.
- KAIGHOBADI M & M T ALLEN
2008. Investigating academic success factors for undergraduate business students. *Decision Sciences Journal of Innovative Education* 6(2): 427-36.
- KAPP C A
2000. Emotional intelligence and success in post-graduate studies: a pilot study. *SAJHE/SATHO* 14(3): 151-60.
- LEMAN P J
1999. The role of subject area, gender, ethnicity and school background in the degree results of Cambridge University undergraduates. *The Curriculum Journal* 10(2): 231-52.
- NADERI H, R ABDULLAH, H T AIZAN, J SHARIR & V KUMAR
2009. Creativity, age and gender as predictors of academic achievement among undergraduate students. *Journal of American Science* 5(5): 101-12.
- NYKLÍČEK I & J DENOLLET
2009. Development and evaluation of the balanced index of psychological mindedness (BIPM). *Psychological Assessment* 21(1): 32-44.
- OCHSE C
2003. Are positive self-perceptions and expectancies really beneficial in an academic context? *SAJHE/SATHO* 17(1): 67-73.
- O'CONNOR M C & S V PAUNONEN
2007. Big five personality predictors of post-secondary academic performance. *Personality and Individual Differences* 43: 971-90.

RUSHTON J H & M SKUY

2000. Performance on Raven's matrices by African and White university students in South Africa. *Intelligence* 28(4): 251-65.

SHEARD M

2009. Hardiness commitment, gender, and age differentiate university academic performance. *British Journal of Educational Psychology* 79(1): 189-204.

SHILL M A & M A LUMLEY

2002. The psychological mindedness scale: factor structure, convergent validity and gender in a non-psychiatric sample. *Psychology and Psychotherapy: Theory, Research and Practice* 75(2): 131-50.

SPATZ C & E KARDAS

2008. *Research methods in psychology: ideas, techniques and reports*. Boston: McGraw-Hill.

STATSOFT INC

2009. STATISTICA (data analysis software system). Version 9.0.
<www.statsoft.com>

STEYN H S (JR)

2009. *Manual: Effect size indices and practical significance*. Potchefstroom: North-West University.
<http://www.puk.ac.za/opencms/export/PUK/html/fakulteite/natuur/skd/manual/Chapter_5.pdf>

VAEZ M & L LAFLAMME

2008. Experienced stress, psychological symptoms, self-rated health and academic achievement: a longitudinal study of Swedish university students. *Social Behavior and Personality* 36(2): 183-96.

ZEEGERS P

2004. Student learning in higher education: a path analysis of academic achievement in science. *Higher Education Research and Development* 23(1): 35-56.