Burnout and engagement in university students: A psychometric analysis of the MBI SS and UWES S

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Abstract

The objectives of this study were firstly to investigate the construct validity, construct equivalence and reliability of adapted versions of the Maslach Burnout Inventory Student Survey (MBI SS) and the Utrecht Work Engagement Scale Student (UWES S), secondly to determine the relationship between burnout and engagement, and thirdly to determine whether differences in burnout and engagement exist for different demographical groups. A cross sectional survey design was used with an availability sample of Afrikaans and Setswana speaking students at a tertiary institution (n = 353). The MBI SS and UWES S as well as a biographical questionnaire were administered. Structural equation modelling confirmed a two factor structure (as opposed to a one factor structure) for each instrument. The two factor structure for burnout and engagement was also largely equivalent for the two language groups. All four scales were found to be reliable. The burnout and engagement scales were moderately negatively related to each other, with stronger relationships between exhaustion and vigour and between cynicism and dedication. Demographic variables that appear to be predictive of differences in student burnout include home language, while engagement was related to home language and academic year of study.

INTRODUCTION

Although the general notion was that burnout could only occur in working individuals, recently it has become clear that students could also experience burnout (Balogun, Helgemoe, Pellegrini and Hoeberlein 1996; Gold and Michael 1985; Pienaar and Sieberhagen 2005) and that it is important to study this phenomenon among university students. Burnout among students can be
considered to be an erosion of academic engagement (Schaufeli, Martínez, Pinto, Salanova and Bakker 2002), may influence their future relationship with their university (Neuman, Finaly-Neuman and Reichel 1990) and may be an important indicator in predicting professional burnout when they become professionals after graduation (Yang and Farn 2005). Furthermore, the phenomenon of student burnout may affect the general attractiveness of the university for new students, with potential ramifications for present and future enrolment. Student burnout can also have a significant effect on the effectiveness of the universities, which may in turn have distinct policy implications for higher education institutions (Neuman et al. 1990).

Although it is important to investigate student burnout, it is of equal importance to study the opposite pole, namely engagement. The concept of engagement could explain why certain students engage in their studies with enthusiasm and energy, without becoming burned out. In general, engaged individuals seem to show positive behaviour such as personal initiative and learning motivation (Sonnentag 2003), extra-role behaviour (Salanova, Agut and Peiró 2005), and proactive behaviour (Salanova et al. 2005). There are also some indications that engagement is positively related to health, including low levels of depression, distress (Schaufeli and Bakker 2003) and psychosomatic complaints (Demerouti, Bakker, Janssen and Schaufeli 2001). Finally, it seems that engagement is positively related to performance (Salanova et al. 2005).

Burnout among students refers to feeling exhausted because of study demands, having a cynical and detached attitude towards one’s studies, and feeling incompetent as a student (Schaufeli, Martínez et al. 2002). Usually, burnout is characterised by three dimensions, namely exhaustion, which refers to fatigue but does not make direct reference to other people as the source of those feelings; cynicism, which reflects indifference or a distant attitude towards work in general, not necessarily with other people; and reduced professional efficacy, which encompasses social and non-social aspects of occupational accomplishments (Schaufeli, Maslach, Leiter and Jackson 1996). Engagement is conceptualised as a persistent and pervasive affective-motivational state that is not focused on any particular object, event, individual, or behaviour, and can be characterised by three dimensions, namely vigour, dedication and absorption (Schaufeli, Salanova, González-Romá and Bakker 2002). Vigour is characterised by high levels of energy and mental resilience, the willingness to put effort in one's work, and having persistence even in times of difficulties. Dedication is characterised by feelings of significance, enthusiasm, inspiration, pride, and challenges. Absorption is characterised by being fully concentrated on and deeply engrossed in one's work, where the time passes quickly and people have difficulty detaching themselves from their work.

However, several researchers regard exhaustion and cynicism as the ‘core’ components of burnout, which is illustrated by the relatively low correlations of professional efficacy with exhaustion and cynicism, the seemingly independent
and parallel development of professional efficacy, and the weak relationship with other variables (for overviews, see Cordes and Dougherty 1993; Green, Walkey and Taylor 1991; Lee and Ashforth 1996; Leiter 1993). It also seems that professional efficacy reflects a personality characteristic rather than a genuine component of burnout (Cordes and Dougherty 1993; Shirom 1989). Analogously, vigour and dedication are considered the 'core' dimensions of engagement, while absorption is considered to be a relevant aspect of engagement that most likely plays a less central role in the engagement concept (Schaufeli 2005; Schaufeli and Bakker 2001), rather resembles 'flow' (a state of optimal experience; Csikszentmihalyi 1990) and seems to act as a consequence of work engagement (González-Romá, Schaufeli, Bakker and Lloret 2006; Schaufeli 2005; Schaufeli and Bakker 2004). Consequently, researchers are inclined to use the core dimensions of burnout and engagement when conducting research (e.g. Langelaan, Bakker, van Doornen and Schaufeli 2006). Therefore, this study will focus on these core dimensions of burnout (exhaustion and cynicism) and engagement (vigour and dedication) of students.

Although research regarding student engagement is relatively scarce, many international studies have focused on the experience of students' burnout, including studies among nursing students (Deary, Watson and Hogston 2003), management information system students (Yang and Farn 2005), medical students (Murphy 2006) and gifted students (Kaplan and Geoffroy 1993). However, there seems to be a lack of research regarding burnout and engagement in higher education students in South Africa. Only one study could be found that investigated burnout of student leaders in a higher education institution (Pienaar and Sieberhagen 2005). Besides investigating the relationship between burnout/engagement and demands, resources, optimism and commitment, Pienaar and Sieberhagen also investigated the construct validity and reliability of the MBI-SS\(^1\) (Maslach Burnout Inventory-Student Survey; Schaufeli, Martínez et al. 2002) and the UWES-S\(^1\) (Utrecht Work Engagement Scale-Student; Schaufeli, Martínez, et al. 2002), and found these instruments to be valid and reliable for the measurement of burnout and engagement of student leaders.

Although the study of Pienaar and Sieberhagen (2005) is an important initiative, the study had two important limitations. Firstly, the sample was very homogeneous, in that only student leaders were included. The implication is that the results can not be generalised to other student groups. Secondly, only students from a specific ethnic and language group participated in the study (all except two students were from the white population group and Afrikaans speaking). In light of the fact that membership of different language and cultural groupings can influence the manner in which individuals perceive the world, Van de Vijver and Leung (1997) advise to account for these differences by measuring construct equivalence (or invariance) and bias of instruments in multicultural research settings. Construct equivalence indicates the extent to which the same construct is measured across the cultural groups under study. Item bias concerns aspects of measurement validity in
intercultural group comparisons (Van de Vijver and Leung 1997). Therefore, it is important to determine whether the MBI-SS and UWES-S are valid and reliable measuring instruments to measure burnout and engagement of students in different language groups.

Based on the above discussion, the general objective of this study was to investigate the psychometric properties of the adapted versions of the MBI-SS and UWES-S. More specifically, the first objective was to determine the construct validity of the instruments by comparing a one-factor and two-factor model for each instrument. Schaufeli, Martínez et al. (2002) and Pienaar and Sieberhagen (2005) confirmed the three-factor structure of the MBI-SS and the UWES-S. Although this study only focuses on the ‘core dimensions’ of burnout and engagement, it is expected that a two-factor structure will fit the data better than a one-factor structure for the MBI-SS (Hypothesis 1) and the UWES-S (Hypothesis 2).

The second objective of the study was to determine the construct equivalence of the MBI-SS and UWES-S for two language groups, namely Afrikaans and Setswana. Schaufeli, Martínez et al. (2002) failed to demonstrate complete factorial invariance of the MBI-SS between different European countries (e.g. Spain, Portugal and The Netherlands). However, since the professional efficacy scale proved invariant across samples and this scale is not included in this study, it is expected that the MBI-SS will be equivalent for the two language groups (Hypothesis 3). Regarding the equivalence of the UWES-S, Schaufeli, Martínez et al. (2002) demonstrated only partial support for the invariance of the factor structure. More specifically, some of the factor loadings of the vigour and dedication scales were invariant across samples (VI1, DE2, and DE5). It is therefore expected that the factor structure of the UWES-S will be largely equivalent across the two language groups, but that some specific items may be problematic (Hypothesis 4).

The third objective was to determine the reliability of the MBI-SS and UWES-S. Schaufeli, Martínez et al. (2002) reported Cronbach alpha coefficients of between 0,74 and 0,80 for exhaustion, between 0,79 and 0,86 for cynicism, between 0,65 and 0,79 for vigour, and between 0,77 and 0,86 for dedication. Pienaar and Sieberhagen (2005) also found acceptable reliability coefficients for all the scales (exhaustion: $\alpha = 0,79$; cynicism: $\alpha = 0,73$; vigour: $\alpha = 0,77$; dedication: $\alpha = 0,85$). It is therefore expected that all the scales of the MBI-SS and UWES-S will be reliable (Hypothesis 5).

The fourth objective was to determine the relationship between burnout and engagement. According to Schaufeli, Martínez et al. (2002), student burnout is considered to be an erosion of academic engagement and therefore, the burnout and engagement scales are likely to be (at least) moderately negatively related, where correlations between burnout and engagement scales should exceed 0,40 (according to the rule of thumb proposed by Cohen and Holliday 1982). Therefore,
it is expected that negative relationships exist between the burnout and engagement scales, particularly between exhaustion and vigour, as well as between cynicism and dedication (since these scales are antithetical) \((Hypothesis\ 6)\).

Finally, the fifth objective was to determine if there are differences in burnout and engagement levels of various demographic groups (including gender, language and academic year). In general, much more research attention has been paid to studying biographical differences with regard to burnout than engagement. Van Horn, Schaufeli and Enzmann (1999) found that men are more prone to suffer from depersonalisation than women are. Home language may also be a complicating factor in studying burnout among students in modern-day multicultural and multilingual South Africa. Salanova and Schaufeli (2000) concluded that translation of items containing uncommon words could affect the responses of participants. In previous South African research, Van der Linde, Van der Westhuizen and Wissing (1999) indicated that biographical variables such as years of experience and language were related to educators’ burnout. It could be hypothesised that differences in students’ experiences of burnout and engagement may be related to their academic year of study (similar to years of experience). Therefore, it is expected that differences in burnout and engagement will be related to gender, language and academic year \((Hypothesis\ 7)\).

**METHOD**

**Research design**

A survey design was utilised to obtain the desired research objectives. The specific design was a cross-sectional design, whereby a sample was drawn from a population at one point in time (Shaughnessy and Zechmeister 1997).

**Participants and procedure**

Samples from a recently merged university were randomly selected \((n = 353)\) and included Afrikaans- and Setswana-speaking students from different year groups enrolled in various courses in the Economic and Management Sciences Faculty of the two campuses of the university. After students agreed to participate in the study, the measuring battery was compiled and questionnaires were distributed after contact sessions. The items from the burnout and engagement subscales were randomised in order to prevent answering bias and response sets. The questionnaires were accompanied by a letter introducing the goal of the study and the confidentiality and anonymity of the answers were emphasised. Students were kindly requested to fill out the questionnaire and hand it in before they leave. Questionnaires were administered in English. In total, 57,2 per cent of the sample were females, while 52,97 per cent were Afrikaans speaking and 43,34 per cent
Setswana speaking. With regard to academic year of study, 36.30 per cent were in their first year, while 28.60 per cent were in their second year and 24.60 per cent in their third year of study.

**Measuring instruments**

The following questionnaires were utilised in the empirical study:

- The *Maslach Burnout Inventory-Student Survey* (MBI-SS) (Schaufeli, Martínez et al. 2002) was used to measure the burnout levels of participants. The MBI-SS consists of three subscales, namely Exhaustion (five items, e.g. ‘I feel emotionally drained from my studies’), Cynicism (four items, e.g. ‘I have become less enthusiastic about my studies’) and Professional Efficacy (six items, e.g. ‘I feel stimulated when I achieve my study goals’). In this study, the ‘core dimensions’ of burnout were used, namely Exhaustion and Cynicism. All items were scored on a seven-point frequency rating scale ranging from zero (*never*) to six (*always*). The questionnaire has been validated internationally (Schaufeli, Martinez et al. 2002), as well as in South Africa (Pienaar and Sieberhagen 2005).

- The *Utrecht Work Engagement Scale-Student Survey* (UWES-S) (Schaufeli, Martínez et al. 2002) was used to measure the levels of engagement and includes three dimensions, namely Vigour (five items, e.g. ‘When I study, I feel like I am bursting with energy’), Dedication (five items, e.g. ‘I am enthusiastic about my studies’) and Absorption (four items, e.g. ‘I can get carried away by my studies’). Items of the UWES-S are similarly scored to those of the MBI-SS. Again, the ‘core dimensions’ of engagement were used, namely Vigour and Dedication. The UWES-SS has also been validated internationally (Schaufeli, Martinez et al. 2002), as well as in South Africa (Pienaar and Sieberhagen 2005).

- A biographical questionnaire was administered to gather information on participants. This information includes gender, home language and academic year of study (number of years relevant to the particular degree course that the student has completed).

**Statistical analysis**

The statistical analysis was carried out with the SPSS Program (SPSS 2003) and the AMOS program (Arbuckle 1999). Cronbach alpha coefficients were used to assess the reliability of the measuring instrument (Clark and Watson 1995). Descriptive statistics (e.g. means and standard deviations) were used to analyse the data. Product-moment correlations were used to test the relationship between the scales.

Construct validity and equivalence was tested with structural equation modelling (SEM) analyses, using the AMOS software package (Arbuckle 1999).
The construct validity of the two measuring instruments was tested with confirmatory factor analysis (CFA) by comparing two competing models (a one-factor versus a two-factor model) for the relationships among the items of each instrument. Before performing SEM, the frequency distributions of the MBI-SS and UWES-S were checked for normality and multivariate outliers were removed. Testing for equivalence across the two most represented language groups (Afrikaans and Setswana) was done according to the procedure suggested by Byrne (2001). According to this procedure, sets of parameters are put to the test in a logically ordered and increasingly restrictive fashion. The factor loading paths, factor variances/covariances, and structural regression paths are most commonly of interest in answering questions related to group equivalence.

As a prerequisite for testing for factorial equivalence, it is customary to consider a baseline model, which is estimated for each group separately. This model represents the one that best fits the data from the perspectives of both parsimony and substantive meaningfulness. Given that the $\chi^2$ statistic and its degrees of freedom are additive, the sum of the $\chi^2$ values derived from the model-fitting process for each individual group reflects the extent to which the underlying structure fits the data across groups when no cross-group constraints are imposed. Because measuring instruments are often group specific in the way they operate, baseline models are not expected to be identical across groups. The following goodness-of-fit-indices were used as adjuncts to the $\chi^2$ statistics:

(a) $\chi^2$/df ratio;
(b) The Goodness-of-Fit Index (GFI);
(c) The Incremental Fit Index (IFI);
(d) The Tucker-Lewis Index (TLI);
(e) The Comparative Fit Index (CFI);
(f) The Root Mean Square Error of Approximation (RMSEA).

Multivariate analysis of variance (MANOVA) was used to determine the significance of differences between the burnout and engagement levels of different age, language and academic year groups. MANOVA tests whether mean differences among groups on a combination of dependent variables are likely to have occurred by chance (Tabachnick and Fidell 2001). In MANOVA, a new dependent variable that maximises group differences is created from the set of dependent variables. Wilk’s Lambda was used to test the likelihood of the data under the assumption of equal population mean vectors for all groups, against the likelihood under the assumption that the population mean vectors are identical to those of the sample mean vectors for the different groups. When an effect was significant in MANOVA, one-way analysis of variance (ANOVA) was used to determine which dependent variables had been affected. Because multiple
ANOVAAs were used, a Bonferroni-type adjustment was made for inflated Type 1 error. The Games-Howell procedure was used to determine whether there were statistical differences between the groups.

RESULTS

The construct validity of the MBI-SS and UWES-S was tested with SEM, using the maximum likelihood method. For each instrument, two competing models were tested. Model 1 proposes that all the items load on the same underlying latent dimension (i.e., burnout or engagement). Model 2 is a two-factor model, and distinguishes between items that refer to either exhaustion or cynicism (in the case of burnout) or to vigour and dedication (in the case of engagement). The results are presented in Table 1.

Table 1: Goodness-of-fit statistics for the comparison of models

<table>
<thead>
<tr>
<th>Model</th>
<th>( \chi^2 )</th>
<th>( \chi^2/df )</th>
<th>GFI</th>
<th>IFI</th>
<th>TLI</th>
<th>CFI</th>
<th>RMSEA</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBI SS (Burnout)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M1 One factor model</td>
<td>108,70</td>
<td>4,03</td>
<td>0,93</td>
<td>0,87</td>
<td>0,82</td>
<td>0,87</td>
<td>0,09</td>
</tr>
<tr>
<td>M2 Two factor model</td>
<td>46,58</td>
<td>1,79</td>
<td>0,97</td>
<td>0,97</td>
<td>0,95</td>
<td>0,97</td>
<td>0,05</td>
</tr>
<tr>
<td>M3 Final model</td>
<td>40,89</td>
<td>2,15</td>
<td>0,97</td>
<td>0,97</td>
<td>0,95</td>
<td>0,96</td>
<td>0,06</td>
</tr>
<tr>
<td>UWES S (Engagement)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M1 One factor model</td>
<td>92,48</td>
<td>2,64</td>
<td>0,94</td>
<td>0,94</td>
<td>0,92</td>
<td>0,93</td>
<td>0,07</td>
</tr>
<tr>
<td>M2 Two factor model</td>
<td>57,23</td>
<td>1,68</td>
<td>0,97</td>
<td>0,97</td>
<td>0,97</td>
<td>0,97</td>
<td>0,04</td>
</tr>
</tbody>
</table>

Regarding the factor structure of burnout, it is clear that a one-factor model did not fit the data well (\( \chi^2 = 108,70_{(n = 353)} \), \( df = 27 \), \( p < 0,001 \); IFI, TLI and CFI < 0,90 and RMSEA > 0,08), while the two-factor model explained the associations among the items significantly better than Model 1 (M2 vs. M1: \( \Delta \chi^2 = 62,12_{(N = 353)} \), \( df = 1,00 \), \( p < 0,001 \)). However, inspection of the regression weights revealed that one parameter which represents the loading of the item ‘I have become more cynical about the potential usefulness of my studies’, was statistically insignificant (\( p = 0,10 \)) and did not contribute to the cynicism factor. It was therefore decided to delete this item. After this item was deleted, the fit statistics indicated a good fit for the re-specified model. No further modifications of this model were deemed necessary. These results provide support for Hypothesis 1 postulating that student burnout is a two-factor construct consisting of exhaustion and cynicism. Similar results were found for the factor structure of engagement, where a two-factor model fitted the data significantly better than a one-factor model (M2 vs. M1: \( \Delta \chi^2 = 35,25_{(N = 353)} \), \( df = 1,00 \), \( p < 0,001 \)). Therefore, student engagement can be seen as a two-factor construct consisting of vigour and dedication, providing support for Hypothesis 2.
Next, the hypotheses relating to the equivalence for factor loadings, factor variances and covariances of the two-factor structures of the MBI-SS and the UWES-S were tested for Afrikaans- and Setswana-speaking students. At the statistical level, the test for the equivalence of factor loading and covariances involves using the $\chi^2$ statistics to determine the difference in statistical fit between the unconstrained and constrained models. Non-significant differences between models indicate statistical support for the hypotheses being tested. Equivalence can also be examined by comparing the other indices (e.g. GFI, IFI, TLI, CFI, and RMSEA) of the models compared. Such comparisons provide a test for equivalence at the practical level, where small differences are allowed and are indicative of equivalence for groups compared. In general, before testing for measurement and structural equivalence, and differences in latent mean scores, it is necessary to ensure well fitting models for the groups involved (Byrne 2001). Therefore, baseline models were tested for each language group. The results are presented in Table 2.

Table 2: Testing for equivalence of the MBI-SS and the UWES-S

<table>
<thead>
<tr>
<th>Model</th>
<th>$\chi^2$</th>
<th>$\chi^2$/df</th>
<th>GFI</th>
<th>IFI</th>
<th>TLI</th>
<th>CFI</th>
<th>RMSEA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MBI SS (Burnout)</strong></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Baseline model (Afrikaans)</td>
<td>48,57</td>
<td>2,56</td>
<td>0,94</td>
<td>0,94</td>
<td>0,90</td>
<td>0,93</td>
<td>0,09</td>
</tr>
<tr>
<td>Baseline model (Setswana)</td>
<td>16,25</td>
<td>0,86</td>
<td>0,97</td>
<td>1,01</td>
<td>1,02</td>
<td>1,00</td>
<td>0,00</td>
</tr>
<tr>
<td>Unconstrained model</td>
<td>64,80</td>
<td>1,71</td>
<td>0,95</td>
<td>0,96</td>
<td>0,94</td>
<td>0,96</td>
<td>0,05</td>
</tr>
<tr>
<td>Constrained model</td>
<td>89,73</td>
<td>1,91</td>
<td>0,93</td>
<td>0,93</td>
<td>0,92</td>
<td>0,93</td>
<td>0,05</td>
</tr>
<tr>
<td><strong>UWES SS (Engagement)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline model (Afrikaans)</td>
<td>104,18</td>
<td>3,06</td>
<td>0,89</td>
<td>0,89</td>
<td>0,86</td>
<td>0,89</td>
<td>0,11</td>
</tr>
<tr>
<td>Baseline model (Setswana)</td>
<td>49,57</td>
<td>1,46</td>
<td>0,94</td>
<td>0,94</td>
<td>0,91</td>
<td>0,94</td>
<td>0,06</td>
</tr>
<tr>
<td>Final baseline model (Setswana)</td>
<td>38,16</td>
<td>1,47</td>
<td>0,95</td>
<td>0,95</td>
<td>0,93</td>
<td>0,95</td>
<td>0,06</td>
</tr>
<tr>
<td>Unconstrained model</td>
<td>100,43</td>
<td>1,93</td>
<td>0,94</td>
<td>0,94</td>
<td>0,92</td>
<td>0,94</td>
<td>0,05</td>
</tr>
<tr>
<td>Constrained model</td>
<td>114,50</td>
<td>1,85</td>
<td>0,93</td>
<td>0,94</td>
<td>0,92</td>
<td>0,93</td>
<td>0,05</td>
</tr>
</tbody>
</table>

Regarding the equivalence analysis for the MBI-SS, the results of the confirmatory factor analysis showed good fit for the two-factor baseline models (Afrikaans: $\chi^2 = 48,57_{(187)}, df = 19,00, p < 0,01$; Setswana: $\chi^2 = 16,5_{(153)}, df = 19,00, p < 0,001$). After testing the measurement and structural equivalence across language groups, the non-significant difference in the $\chi^2$ statistics ($\Delta \chi^2 = 24,93_{(353)}, df = 9,00, p < 0,001$) provided statistical support that the two-factor structure of the MBI-SS is equivalent for both language groups. On a practical level, the small difference between the other indices (GFI, IFI, TLI, CFI, and RMSEA) provides further support for the equivalence of the factor structure. These results provide support for *Hypothesis 3*. 

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The results of the confirmatory factor analysis of the two-factor baseline models of the UWES showed excellent fit for the two language groups (Afrikaans: $\chi^2 = 104.18(n = 187), df = 34,00, p < 0.01$; Setswana: $\chi^2 = 49.57(n = 153), df = 34,00, p < 0.01$). However, inspection of the regression weights in the Setswana group revealed that one parameter which represents the loading of the item ‘When I’m studying, I feel mentally strong’ (VI1) was statistically insignificant ($p = 0.10$) and do not contribute to the vigour factor. After this item was deleted, the fit statistics indicated a good fit for the re-specified model ($\chi^2 = 38.16(n = 153), df = 26,00, p < 0.01$). Therefore, this model was used as the baseline model for the equivalence analysis. After testing the measurement and structural equivalence across language groups, differences between the models based on the $\chi^2$ value were non-significant ($\Delta \chi^2 = 14.07(N = 353), df = 10,00, p < 0.001$), providing statistical support that the two-factor structure of the UWES-S is equivalent for both language groups. Table 2 also shows that the practical fit indices of the unconstrained models were very good. The indices for the constrained models also showed good fit, and their values were very close to those for the unconstrained model, supporting the invariance for the two factors. These results provide support for the invariance in the pattern of factor loadings of the UWES-S across language groups (Hypothesis 4).

The descriptive statistics, internal consistencies, and product-moment correlations between the constructs are reported in Table 3.

Table 3: Means, Standard Deviations, Internal Consistencies (Cronbach’s Alpha Coefficients) and Product-Moment Correlation Coefficients between the MBI-SS and UWES-S

<table>
<thead>
<tr>
<th>Item</th>
<th>M</th>
<th>SD</th>
<th>$\alpha$</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Exhaustion</td>
<td>2.78</td>
<td>1.27</td>
<td>0.74</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Cynicism</td>
<td>1.73</td>
<td>1.37</td>
<td>0.68</td>
<td>0.46</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Vigour</td>
<td>3.77</td>
<td>1.24</td>
<td>0.70</td>
<td>0.33</td>
<td>0.32</td>
<td></td>
</tr>
<tr>
<td>4. Dedication</td>
<td>4.50</td>
<td>1.12</td>
<td>0.78</td>
<td>0.21</td>
<td>0.44</td>
<td>0.60</td>
</tr>
</tbody>
</table>

All correlations are statistically significant, $p < 0.01$
All correlations $0.30 \leq r \leq 0.49$ are practically significant (medium effect)
All correlations $\geq 0.50$ are practically significant (large effect)

Table 3 reveals that the Cronbach alpha coefficients of the scales are acceptable (Kline 1999; Nunnally and Bernstein 1994). Therefore, these findings provide support for Hypothesis 5, which postulates that the scales of the MBI-SS and UWES-S are reliable. Regarding the relationships between the variables, it was found that the burnout scales are positively, statistically and practically significantly (medium effect) related to each other, while the engagement scales are positively, statistically and practically significantly (with a large effect) related to each other. Furthermore, Exhaustion is negatively, statistically and practically significantly (with a medium effect) related to Vigour and negatively and statistically significantly related to Dedication, while Cynicism is negatively,
statistically and practically significantly (with a medium effect) related to Vigour and Dedication. Therefore, Hypothesis 6, stating that Exhaustion and Vigour, and Cynicism and Dedication, are moderately and negatively related, is largely supported.

Next, MANOVA was used to determine differences between demographic groups with regard to burnout and engagement. Demographic groups included are gender, language and year of study. Results were first analysed for statistical significance using Wilk’s Lambda statistics. ANOVA was then used to determine specific differences whenever statistically significant differences were found. The results of the MANOVA analysis are presented in Table 4.

Table 4: MANOVAs Differences in burnout and engagement levels of demographic groups

<table>
<thead>
<tr>
<th>Variable</th>
<th>Value</th>
<th>F</th>
<th>Df</th>
<th>p</th>
<th>Partial Eta Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burnout Gender</td>
<td>1,00</td>
<td>0,85</td>
<td>2,00</td>
<td>0,43</td>
<td>0,01</td>
</tr>
<tr>
<td>Language</td>
<td>0,94</td>
<td>10,16</td>
<td>2,00</td>
<td>0,00*</td>
<td>0,06</td>
</tr>
<tr>
<td>Year of study</td>
<td>0,97</td>
<td>1,26</td>
<td>8,00</td>
<td>0,27</td>
<td>0,02</td>
</tr>
<tr>
<td>Engagement Gender</td>
<td>0,99</td>
<td>0,98</td>
<td>2,00</td>
<td>0,38</td>
<td>0,01</td>
</tr>
<tr>
<td>Language</td>
<td>0,85</td>
<td>29,20</td>
<td>2,00</td>
<td>0,00*</td>
<td>0,15</td>
</tr>
<tr>
<td>Year of study</td>
<td>0,92</td>
<td>3,41</td>
<td>8,00</td>
<td>0,00*</td>
<td>0,04</td>
</tr>
</tbody>
</table>

* p < 0,05 statistically significant effect

In an analysis of Wilk’s Lambda values, no statistically significant differences (p < 0,05) were found between the burnout levels of males and females or between students in different years of study. No statistically significant differences were found between the engagement levels of male and female students. However, statistically significant differences (p < 0,05) were found for different language groups (regarding burnout and engagement) and for year of study (regarding engagement). The results provide partial support for Hypothesis 7, stating that significant differences exist between burnout and engagement scores, based on demographical characteristics. The relationship between burnout and engagement and those demographic variables that showed a statistically significant difference was further analysed to determine practical significance using ANOVA, followed by Tukey HSD tests.

Table 5 shows that statistically significant differences were found between the levels of Exhaustion, Cynicism, Vigour and Dedication experienced in the two language groups. Afrikaans-speaking students experienced higher burnout (Exhaustion and Cynicism) and lower engagement (Vigour and Dedication) than Setswana-speaking students.
Table 5: ANOVAs Differences in burnout and engagement levels of language groups

<table>
<thead>
<tr>
<th>Item</th>
<th>Afrikaans</th>
<th>Setswana</th>
<th>$p$</th>
<th>Partial Eta Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exhaustion</td>
<td>3,04</td>
<td>2,44</td>
<td>0,00*</td>
<td>0,06</td>
</tr>
<tr>
<td>Cynicism</td>
<td>1,87</td>
<td>1,56</td>
<td>0,04*</td>
<td>0,02</td>
</tr>
<tr>
<td>Vigour</td>
<td>3,40</td>
<td>4,22</td>
<td>0,00*</td>
<td>0,11</td>
</tr>
<tr>
<td>Dedication</td>
<td>4,13</td>
<td>4,95</td>
<td>0,00*</td>
<td>0,13</td>
</tr>
</tbody>
</table>

* Statistically significant difference: $p < 0,05$

Table 6: Differences in Engagement Levels Based on Year of Study

<table>
<thead>
<tr>
<th>Item</th>
<th>1st Year</th>
<th>2nd Year</th>
<th>3rd Year</th>
<th>4th Year</th>
<th>5th Year</th>
<th>$p$</th>
<th>Partial Eta Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vigour</td>
<td>3,78</td>
<td>4,20$^a$</td>
<td>3,50$^b$</td>
<td>3,33</td>
<td>3,14</td>
<td>0,00*</td>
<td>0,06</td>
</tr>
<tr>
<td>Dedication</td>
<td>4,57</td>
<td>4,81$^a$</td>
<td>4,18$^b$</td>
<td>4,16</td>
<td>4,20</td>
<td>0,00*</td>
<td>0,05</td>
</tr>
</tbody>
</table>

* Statistically significant difference: $p < 0,05$

$^a$ Practically significant differences from group (in row) where $^b$ (medium effect, $d \geq 0,5$)

Table 6 shows that statistically significant differences were found between levels of Vigour and Dedication experienced in the different year groups. Students in their second year experienced higher engagement (Vigour and Dedication) than students in their third year.

**DISCUSSION**

The construct validity and reliability of the MBI-SS and UWES-S were largely supported in this study. With the deletion of one burnout item (‘I have become more cynical about the potential usefulness of my studies’), construct validity for both instruments was deemed acceptable. This confirmed the conceptualisation of burnout as consisting of exhaustion and cynicism, and engagement as consisting of vigour and dedication. This finding substantiates the construct validity and reliability of the measuring instruments in assessing burnout and engagement in student samples, as found in previous research (Pienaar and Sieberhagen 2005; Schaufeli, Martínez et al. 2002).

This study extends the utility of the instruments in demonstrating equivalence for an English-language measuring instrument in Afrikaans- and Setswana-speaking samples. This finding presents the first attempt to investigate the equivalence of the ‘core burnout dimensions’ with a South African student sample, and also corroborates previous international findings (Schaufeli, Martínez et al. 2002). Even though South Africa is a uniquely multicultural, multi-religious and
multi-lingual country, the environment in which tertiary students find themselves may contribute to equivalent experiences, regardless of historical background. Given the prohibitively expensive nature of tertiary education, tertiary students may be considered to be in a very privileged position in society. Entrance to tertiary education is also dependent on performance in secondary education, and it may thus be argued that, in general, tertiary students may have had better access to good quality education and developed better language proficiency than their less fortunate counterparts.

In investigating the construct equivalence of engagement, as operationalised and measured by the UWES-S, one item (‘When I’m studying, I feel mentally strong’) proved problematic in the Setswana language group. Salanova and Schaufeli (2000) concluded that translation of items containing uncommon words could affect the responses of participants, especially if the questionnaire is not formulated in their first language. The source of this bias may be attributed to item content, item formulation and/or inadequate translation (Van de Vijver and Leung 1997). The idea of feeling ‘mentally strong’ while studying may have been associated with confidence, while (most) students experience studying, especially for the purpose of evaluation, as daunting and intimidating. It may also not be culturally relevant to Setswana-speaking participants to think of a person as mentally ‘strong’ or ‘weak’.

Regarding the relationships between the variables, the expected directions were confirmed. Burnout and engagement have been conceptualised as directly opposing concepts (Maslach and Leiter 1997), implying that a person can experience one or the other. However, the constructs of burnout and engagement have also been seen as related but opposing (Schaufeli, Salanova et al. 2002), in the sense that it would be possible to experience both engagement and burnout. Findings here indicate that the burnout and engagement constructs are negatively and statistically significantly related, providing support for a continuum hypothesis of student psychological health.

In investigating differences between groups of students based on biographical variables, it was found that differences were observed for different language groups (regarding burnout and engagement) and for year of study (regarding engagement). Afrikaans-speaking students experienced higher burnout (Exhaustion and Cynicism) and lower engagement (Vigour and Dedication) than Setswana-speaking students. The finding of differences in burnout and engagement levels based on language group can be cautiously interpreted against the backdrop of the current climate of affirmative action and employment equity that characterises the South African workplace. The Employment Equity Act (South Africa 1998) has to a great extent ensured equitable access to positions in the marketplace. Afrikaans-speaking students (generally white students), may be experiencing a perception of decreased opportunities for entering the labour market, while Setswana-speaking students (exclusively black students), may hold perceptions of greater access and opportunity in the labour market. Higher engagement levels among Setswana-
speaking students substantiate a hypothesis of greater engagement in studies which may be related to a perception of greater access to employment opportunities. The deletion of one burnout item (‘I have become more cynical about the potential usefulness of my studies’) also improved construct validity. Again, the perceptions of Afrikaans- and Setswana-speaking students regarding the usefulness of their studies may differ, given the competition in securing a position post-university.

Students in their second year experienced higher engagement (Vigour and Dedication) than students in their third year. Many students in their third year of study are faced with the challenge of securing a position for the coming year. For many, this means a major change in financial status, geographic area of living, and upheaval in supportive social ties. Second-year students may also be more engaged in their studies by experiencing that they are not first-year students anymore, but are not yet faced with the reality of job-seeking.

RECOMMENDATIONS

Although the burnout and engagement constructs have proven equivalent, this only implies that the MBI-SS and UWES-S can validly be applied in studies among Afrikaans- and Setswana-speaking students. Much work remains in proving the utility of the instruments for all South African language groups. Future research should also investigate the relation of burnout and engagement to outcomes such as study success, since cultural factors and differences may deem a generic approach to management of these factors in tertiary students unsuitable.

The burnout experiences of students at the university under study should be addressed. Engagement of students should also be maintained at the third-year level, since this is the time when studying hard and obtaining good marks become most important in order to improve your marketability among potential employees. Universities may play an important role in facilitating the transition of students to the world of work, and may collaborate with industry to organise career information days or recruitment campaigns.

The two language groups under study clearly attach different meanings to the qualitative meaning associated with one engagement item (‘When I’m studying, I feel mentally strong’). Therefore, this item should be omitted from future studies among Setswana-speaking samples.

NOTE

1 The MBI SS is a modified version of the MBI GS (Schaufeli et al. 1996) that was adapted for use in student samples by Schaufeli, Martínez et al. (2002). For instance, the item ‘I feel emotionally drained from my work [italics added]’ was rephrased as ‘I feel emotionally drained from my study [italics added].’ As with the MBI, items of the UWES that refer to work or job have been replaced by studies or class in the UWES S.
REFERENCES


Murphy, J. 2006. Burnout common among medical students. *Health* 5, 6 May.


