

STUDENT BURNOUT, STUDENT ENGAGEMENT AND LEARNING OUTCOMES IN UNIVERSITY EDUCATION

A systematic review

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Introduction

Successfully completing a university education is a project that takes several years and requires substantial levels of effort and motivation, the outcome of which may substantially improve one's chances in the labour market (Du Toit et al., 2022). Unfortunately, the age at which people attend higher education – most students are in their late teens or early twenties – comes with challenges to well-being, mental health and academic performance, including high levels of stress due to “intense academic demands, social expectations, and professional challenges” (Zhang et al., 2024, p. 1; cf. Amanvermez et al., 2024; Eisenberg et al., 2013; Lipson et al., 2022). Low student well-being is often believed to be an important predictor of low academic performance and dropout from college (Cuijpers et al., 2019; Du Toit et al., 2022; Zhang et al., 2024). Based on these notions, the present chapter provides a systematic review of recent research into the relations between university students' well-being and academic achievement/learning outcomes, focusing on outcomes such as dropout intentions and indicators of academic performance, especially grade point averages (GPAs).

Previous research on this association has already provided evidence on the associations between general types of well-being (such as depression, anxiety and satisfaction with life) and student academic achievement/learning outcomes, generally showing that lower levels of well-being are associated with lower student academic achievement. For instance, Eisenberg, Golberstein and Hunt (2009) showed that higher levels of depression and anxiety and the presence of eating disorders were associated with lower GPA and higher dropout. Zhang et al. (2024) largely replicated these findings, focusing on exam scores, coursework performance and participation in extracurricular activities. Du Toit et al. (2022) reviewed 62 longitudinal studies on the antecedents and consequences of university students' well-being. While studies involving performance-related concepts were rare and measures of well-being varied widely, their review again showed that lower levels of well-being were associated with lower levels of student performance. Given that there is already considerable evidence for a positive

association between general (i.e., non-study specific) types of well-being and academic performance among university students, the present review focused on the associations between two specific indicators of student well-being (student burnout and student engagement) and student achievement/learning-related outcomes.

Student well-being: burnout and engagement

Subjective well-being is usually construed as a primarily affective state (e.g., Diener et al., 1999). However, over the past 50 years, broader conceptualizations of well-being have been proposed, including not only affect but also behaviour and motivation (among others, Ryff, 2024; Ryff & Keyes, 1995; OECD, 2013). The key question that is involved here is how subjective well-being should be understood. Specifically, does it primarily refer to an affective experience regarding the events that occur in people's lives (Diener et al., 1999) or should it be considered a broader phenomenon that involves additional, non-affective aspects as well? And should happiness basically be studied as a combination of the state of affairs across all areas of life (e.g., as "life satisfaction" in general), or can it also be studied in relation to a specific domain (e.g., work, education or personal relationships)?

Drawing on the work of Ryff and Keyes (1995), Van Horn et al. (2004) studied occupational well-being as a multidimensional concept involving indicators of affective, cognitive, professional, social and psychosomatic well-being in the work context. Their results supported the distinction among the indicators of these five dimensions, also showing that these dimensions load onto a more general underlying well-being concept. Their analyses thus suggest that (a) well-being can be measured in specific contexts, e.g., work; and (b) well-being can be construed as a multidimensional concept, going beyond the simple "well-being-as-affect" approach. In the present chapter we build on this conceptualization in studying student well-being, by focusing on two study-specific indicators of student well-being: *student burnout* and *student engagement*. Both concepts focus on the affective and motivational aspects of studying and have been studied empirically as possible antecedents of academic performance.

Student burnout

The term *burnout* emerged in the 1970s in the work context. Burnout is construed as an affective-motivational psychological syndrome that occurs in response to chronic stressors on the job (Maslach et al., 2001, for an historical overview). The three key dimensions of this response are (1) exhaustion (the feeling of being overextended and exhausted by one's work), (2) depersonalization/cynicism (holding a cynical and distant attitude towards one's work and the people one works with) and (3) reduced personal accomplishment/professional efficacy (the tendency to evaluate one's achievements at work negatively). Exhaustion and, to a lesser degree, depersonalization/cynicism are considered the central qualities of burnout and the most obvious manifestations of the syndrome (Taris et al., 2005). Burnout is usually measured in terms of the three dimensions described above, using a version of the Maslach Burnout Inventory (MBI: Maslach et al., 1996): e.g., there is a version for human services professionals, for teachers and a version for general purposes in which its dimensions are defined more generally and do not refer to people as the source of feelings of burnout. Burnout has been related to a wide variety of antecedents (such as high job demands, time pressure, lack of feedback, lack of autonomy and lack of social support) and outcomes (including adverse job performance) (Schaufeli, 2023; Taris, 2006, for reviews).

Table 13.1 Examples of items tapping student burnout and student engagement

<i>Student burnout: MBI-SS (Schaufeli, Martinez et al., 2002)</i>	
Exhaustion	• Studying or attending a class is really a strain for me. • I feel used up at the end of a day at university.
Cynicism	• I doubt the significance of my studies. • I have become less interested in my studies since my enrolment at the university.
Professional efficacy	• In my opinion, I am a good student (<i>reversed</i>). • I can effectively solve the problems that arise in my studies (<i>reversed</i>).
<i>Student engagement: UWES-S (Schaufeli, Salanova et al., 2002)</i>	
Vigour	• I feel strong and vigorous when I'm studying or going to class. • When I get up in the morning, I feel like going to class.
Dedication	• I am proud of my studies. • My study inspires me.
Absorption	• I feel happy when I am studying intensively. • Time flies when I am studying.
<i>Student engagement: USEI (Maroco et al., 2016)</i>	
Behavioural engagement	• I usually participate actively in group assignments. • I pay attention in class.
Emotional engagement	• I don't feel very accomplished at this school (<i>reversed</i>). • I am interested in the school work.
Cognitive engagement	• When I read a book, I question myself to make sure I understand the subject I'm reading about. • I try to integrate the acquired knowledge in solving new problems.

Importantly, acknowledging that students can experience burnout as well, Schaufeli et al. (2002) developed a version of the MBI for use among students (the MBI-Student Survey, MBI-SS), in which its three dimensions refer to feeling exhausted because of *study* demands, having a cynical and detached attitude toward one's *study* and feeling incompetent *as a student* (see Table 13.1 for example items). Although Schaufeli et al. (2002) reported relatively low and not always statistically significant associations between the dimensions of the MBI-SS and academic success (defined as the ratio of the number of passed exams in the previous term relative to the total number of exams taken in this period), since its inception, the MBI-SS has taken a prominent place in research on the antecedents and consequences of student well-being.

Student engagement

In the middle of the 1990s, the concept of work engagement was developed in the work context as the antipode of burnout. Initially, work engagement was construed as the direct opposite of burnout (energy instead of exhaustion; involvement instead of depersonalization/cynicism; and efficacy instead of ineffectiveness, cf. Maslach & Leiter, 1997), implying that work engagement could be assessed using the Maslach Burnout Inventory (with high scores on burnout implying low scores on engagement and vice versa). As this approach made it impossible to study the association between burnout and engagement (a situation considered to be unsatisfactory, if only because the *absence* of burnout does not imply the *presence*

of engagement, Schaufeli et al., 2002), an alternative view that construes work engagement as a concept that can be measured independently from burnout (using the Utrecht Work Engagement Scale – UWES) has become dominant. In this approach engagement is defined as a positive, fulfilling, work-related state of mind that is characterized by (1) vigour (high levels of energy and mental resilience while working and the willingness to invest effort in one's work), (2) dedication (a sense of significance, enthusiasm, inspiration and pride) and (3) absorption (being fully concentrated on one's work, where time passes quickly and detaching from work is difficult) (Schaufeli et al., 2002).

Like burnout, work engagement has been related to a range of antecedents and outcomes, including high performance (Taris, 2023, for a review) and, similar to burnout, a student-specific version of the UWES (the UWES-S) was created by Schaufeli et al. (2002) (see Table 13.1 for example items). The resulting scale was found valid and reliable, with especially vigour being predictive of students' academic success.

Although the UWES-S has frequently and successfully been applied in educational settings and is “generally accepted” in this context (Meng & Jia, 2023, p. 6), Maroco et al. (2016) developed an alternative measure of student engagement (the University Student Engagement Inventory, USEI). Mirroring the ideas of Nystrand and Gamoran (1992) and building on Chapman's (2003, p. 2) definition of student engagement as “students' willingness to participate in routine school activities, such as attending classes, submitting of required work, and following teachers' directions in class”, Maroco et al. (2016) construed a novel measure of engagement, incorporating a cognitive, emotional and behavioural dimension. *Cognitive engagement* refers to students' willingness to invest effort for the comprehension of complex ideas and skills. *Emotional engagement* is about the positive and/or negative reactions to teachers' instructions, classmates and school, perceptions of belonging and beliefs about the value of schooling. Finally, *behavioural engagement* is defined in terms of participation in classroom tasks, conduct and participation in school-related extracurricular activities (Table 13.1, for example items).

Ultimately, Maroco et al. (2016) define student engagement as “students' involvement and motivation towards his or her course work and academic activities within the university” (p. 4). Compared to the UWES-S, the USEI focuses more strongly on behaviours, effort expenditure, compliance with procedures and extrarole behaviours, rather than on more psychologically-flavoured concepts like energy, enthusiasm, pride and flow-like experiences. In a sense, the behaviours that are part of the USEI could *result* from the sort of engagement measured by the UWES-S, thus covering different but related steps in the process that results in high levels of academic achievement.

The present chapter. Based on the notions above, the present chapter aims to examine the associations between student burnout and student engagement (as two forms of student well-being) on the one hand, and academic/learning-related outcomes, on the other (including regular indicators of learning performance such as GPA as well as dropout intentions), with dropout being the ultimate consequence of low learning achievement. We focus on three related questions:

- 1 How consistent are the presumably adverse associations between student burnout and academic/learning-related outcomes across studies?
- 2 How consistent are the presumably beneficial associations between student engagement and academic/learning-related outcomes?
- 3 Are there joint effects of student burnout and engagement when it comes to academic/learning-related outcomes?

In addressing the first two questions, we focus on the consistency of findings across studies, rather than on the size of the effects reported in these studies: i.e., this is not a meta-analysis. Regarding question 3, authors in this area sometimes assume that student burnout and student engagement interact in affecting achievement/learning outcomes (Maroco et al., 2020). Although it is conceivable that high effort expenditure (as implied in the behavioural type of study engagement measured by the USEI) leads to high levels of exhaustion (the core dimension of burnout, as measured by the MBI-SS), the reasoning here is that the adverse effects of study burnout on achievement/learning outcomes become weaker when students are highly engaged.

Method

Study design, eligibility and search strategy

Drawing on the PRISMA guidelines for systematic reviews (Page et al., 2021), we conducted a systematic review of the literature on the associations between well-being on the one hand and academic achievement/learning outcomes (GPA and dropout intentions) on the other, among students attending university education. Student well-being was operationally defined as burnout and/or engagement. No restrictions were imposed regarding the measures used to tap the latter two concepts. Databases included in the literature search were EbscoHost (all versions), Scopus and Web of Science. The last search was conducted on 20 February 2025. Articles were considered eligible if they (1) were published in scientific journals; (2) were written in English; (3) reported the findings of a quantitative empirical study; (4) were published between 2014 and 2024; (5) included a measure of student burnout and/or student engagement and at least one indicator reflecting student achievement/learning (i.e., grades, performance, dropout); and (6) the participants were university students. Focusing on the title and/or abstract and/or key words of the records in the three databases, we used the following search string in our literature search (Scopus version): (TITLE-ABS-KEY (((“Study” OR “academic”) AND (“engagement” OR “burnout” OR “burn-out”)) AND ((“university studen*”))) AND (LANGUAGE (“english”) AND (PUBYEAR > 2013 AND PUBYEAR < 2025) AND (LIMIT-TO (LANGUAGE, “English”)))). No additional constraints (e.g., regarding study discipline/subject area, stage of studies or other contextual factors) were included in the search protocol, as preliminary searches had indicated that doing so would result in a very small number of records.

Figure 13.1 presents the article selection and screening process. Application of this search string to each of the three databases resulted in 63 records. After removal of 36 duplicates, 27 records remained, the abstracts of which were screened for eligibility by the first author. This resulted in the removal of an additional 12 records, mainly because these studies did not include any achievement or learning-related outcomes ($n = 10$). The remaining reports ($n = 15$) were retrieved and screened in full by the first author. This resulted in the exclusion of seven more studies, either because these were not written in English ($n = 1$) or because they did not include a measure of learning outcomes/academic achievement ($n = 6$). The remaining eight studies were coded and further analysed.

Data extraction

Data were extracted from these eight articles for the following variables: (a) author; (b) year of publication; (c) focus of the research question/goal/theoretical basis of the

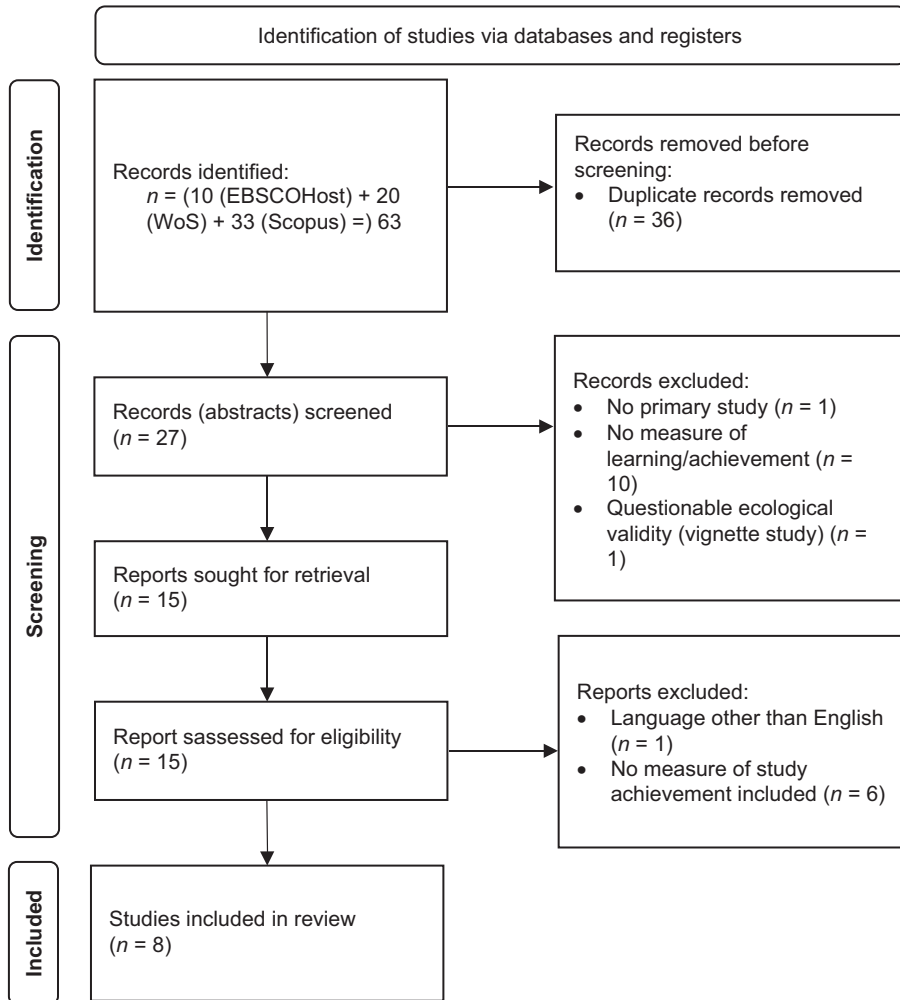


Figure 13.1 PRISMA diagram summarizing the article selection and screening process.

study; (d) country of affiliation of the first author; (e) population of interest; (f) sample size; (g) percentage of females in the sample; (h) study design (cross-sectional vs. longitudinal vs. other); (i) instruments used for measuring burnout, engagement and academic achievement, respectively; and (j) main findings, insofar as these related to the associations among burnout, engagement and academic achievement. Note that whereas not all articles in our selection included measures of burnout, engagement and academic achievement, they at least included information on the association between either burnout or engagement, on the one hand, and academic achievement on the other.

Upon further inspection, we found that two of these eight studies (Studies 2 and 3; see Table 13.2) were based on largely the same data set. While they addressed different study questions, they included the same concepts and presented overlapping sets of findings. Since Study 3 reported findings for eight statistically independent samples and had a

better fit with the goals of the present review, only Study 3 was retained for further analysis. Therefore, our review was based on seven studies, presenting findings for 14 independent samples.

Analytical strategy

Quality assessment

A detailed assessment of the methodological quality of the studies included in this study was deemed unnecessary, as all studies used very similar and relatively weak designs and measures. All studies employed a cross-sectional design (i.e., causal inferences are therefore not warranted, and common method bias cannot be excluded) and were mainly or fully based on self-reports (i.e., the risk of self-report bias is certainly present). The average sample size was 479 participants, and all studies achieved a post-hoc power of $>.99$ to detect medium-sized effects of $.30$ (Faul et al., 2007). That is, a small sample size was not an issue here. In spite of this positive finding, overall, the quality of the evidence presented in the studies included here remains relatively low.

Data aggregation

Some of the studies included in this review reported correlation coefficients for the associations among the concepts of interest, while others focused on standardized or unstandardized regression estimates, included or excluded covariates, and sometimes included interaction effects. This implies that the results reported in these articles cannot easily be aggregated and/or compared. However, an indication of the degree to which the findings of these studies converged is desirable. Simple “vote counting”, in which the number of studies with positive and/or negative outcomes are compared, is not considered useful (Pak et al., 2019; Van Tulder et al., 2003). Instead, below we use the Standardized Index of Convergence (SIC, Wielenga-Meijer et al., 2010) to estimate the degree of consistency of particular associations. The SIC presents the degree to which findings are *consistent* across studies rather than an indication of the average *effect size* across studies. It is calculated by subtracting the number of studies reporting a statistically significant negative relation from the number of studies demonstrating a statistically significant positive relation, then dividing this number by the total number of studies investigating this relation:

$$SIC = \frac{n(\text{positive}) - n(\text{negative})}{n(\text{total})}.$$

The SIC ranges from -1 to $+1$. Wielenga-Meijer et al. (2010) propose that values between 0 and $|.29|$ indicate an inconsistent effect (i.e., findings of studies vary strongly in terms of the direction of their effects, and no conclusion regarding their direction can be drawn). Values between $.30$ ($-.30$) and 1.00 (-1.00) provide evidence for a positive (negative) effect: the higher the SIC, the more consistent the evidence. The strength of the evidence is determined as a combination of these SIC values and the number of studies assessing the association under study, with the strongest evidence for a particular association being the combination of a high SIC ($\geq |.60|$) and many studies underlying this value (e.g., ≥ 6 studies, cf. Wielenga-Meijer et al., 2010).

Results

Overview of study characteristics (a–h)

Table 13.2 presents the characteristics of the seven studies included in this review (Study 2 was excluded from further analyses). Interestingly, despite the 2014–2024 interval used in this study, all studies were published after 2020. Four of the first authors of the seven studies (Studies 1, 3–4, 8) were affiliated with European universities (two from Portugal, one from Spain, one from Romania). The authors of the remaining three papers were affiliated with a Chinese, South-African and Canadian university (Studies 5–7). Note that the data of two studies (Study 3 and Study 8) referred to more extended, pooled databases, including data from Portugal, Finland, Serbia, the UK, the US, Brazil, Mozambique, Macau and Taiwan (Study 3), Romania and India (Study 8). Overall, the seven studies included here contain data of 6,712 participants and contained 14 independent samples (with Study 3 contributing findings for eight samples from nine countries – Macau and Taiwan were combined, see Table 13.2). Although Study 8 drew on data from two countries (Romania and India), this study did not report country-specific findings.

Apart from Study (1), which focused exclusively on medical students, all samples included participants from a variety of academic disciplines. Most studies included more female than male participants (percentage females ranging from 18 (Indian sample) to 84 (Serbian sample) per cent, mean percentage females = 59.1). Importantly, all studies employed a cross-sectional design, and most ($n = 6$) explicitly indicated to have used online data collection techniques.

As regards the foci of the eight studies included here, most of these (Studies 1, 3–5, 8) specifically examined the associations among learning outcomes and burnout and/or engagement, taking engagement and/or burnout as antecedents of learning achievement. Several studies presented evidence on these associations in a broader study on the effects of concepts such as time perspective (Study 4), strengths use (Study 6), student passion (Study 7) and psychological capital (Study 8) as predictors of student burnout, engagement, dropout intentions and/or learning achievement. Finally, Study 2 validated the USEI, with its nomological network including burnout, learning outcomes and engagement. The theoretical frameworks employed in these studies were usually simple, basically arguing that low levels of burnout and high levels of engagement are expected to lead to better achievement/learning outcomes, without elaborating on the underlying mechanisms accounting for these associations.

Measures of burnout, engagement and academic achievement (i)

As regards the concepts and measures used, Table 13.2 shows that four studies (Studies 1, 3, 6 and 7) included a measure of *dropout intention*. *Learning performance/achievement* was included in five studies (3–5, 7–8). Four of these drew on GPAs and differed only in the period that was covered (either the past semester or the cumulative GPA to date); Study 3 focused on self-reported academic performance (ranging from “bad” to “excellent”). Three of these five studies focused on self-reported learning performance (Studies 3, 5, 7), with only Study 4 focusing on the objective, academic transcript of the grades obtained so far.

Student burnout was measured in five studies (Study 1, 3, 6–8), always using (a translated version of) the Maslach Burnout Inventory-Student Survey (MBI-SS, Schaufeli et al., 2002).

Table 13.2 Overview of the characteristics of the studies included in the review

<i>Study</i>	<i>Lead author</i>	<i>Publ. year</i>	<i>Focus/background</i>	<i>Country first author</i>	<i>Population</i>	<i>Sample size</i>	<i>% Fem</i>	<i>Design</i>	<i>Instruments</i>
1	Alves	2022	Burnout is associated with stress; engagement with adaptive/active coping behaviours: thus, engagement should buffer the positive effect of burnout on dropout intentions.	Portugal	Portuguese medical students	<i>N</i> = 417	71%	Online, cross-sectional	MBI-SS; USEI; dropout intention (self-constructed, two items)
2	Assunção ^a	2020	Validation study of the USEI	Portugal	University students from ten different countries (Portugal, Finland, Serbia, Italy (Study 2 only), UK, US, Brazil, Mozambique, Macau and Taiwan)	<i>N</i> = 4,479	60%	Online, cross-sectional	MBI-SS; USEI; self-reported academic performance (“bad” to “excellent”), dropout intention (single item)
3	Maroco ^a	2020	Examine associations between student burnout and engagement and academic performance/dropout intention. As engagement is associated with adaptive/active coping behaviours, it should buffer the adverse effects of burnout on dropout intentions and academic performance.			<i>N</i> = 4,061 (Italy excluded)			
4	Gonzalez	2020	Engagement is related to health-related issues (including stress, anxiety, depression) that can impact academic performance. Engaged students feel that their tasks are significant and meaningful and present enthusiasm and pride for their education.	Spain	Postgraduate Spanish university students	<i>N</i> = 298	64%	Paper-and-pen and online; cross-sectional	UWES-S; average of all course scores (obtained from academic transcript)

5	Meng	2023	Engagement is a mediator of the association between self-efficacy and academic performance, “the more the students are engaged (...) the greater their level of academic performance” (p. 4).	China	Chinese students from a Chinese public university	<i>N</i> = 258	53%	Not indicated, cross-sectional	UWES-S; self-reported GPA over their courses to date
6	Mostert	2023	Examines the associations between strengths use and student outcomes (burnout, engagement, intention to drop out).	South Africa	First-year South-African university students	<i>N</i> = 776	62%	Online, cross-sectional	MBI-SS; UWES-S; dropout intentions (self-constructed)
7	Bélangier	2021	Examines the associations between student passion and academic functioning (burnout, engagement, dropout, achievement)	Canada	French-speaking students from Quebec	<i>N</i> = 482	67%	Online, cross-sectional	MBI-SS; UWES-S; dropout intentions (two items, Vallerand et al., 1997); self-reported GPA for the past semester
8	Virga	2020	Study engagement is a mediator of the associations between psychological capital, academic performance and burnout.	Romania	Indian and Romanian undergraduate second-year university students	<i>N</i> = 420	48% (Indian sample 18% F; RO = 88% F)	Cross-sectional, paper-and-pencil (IN) /online RO	UWES-S; MBI-SS; Cumulative GPA (source unclear)

Notes. MBI-SS = Maslach Burnout Inventory-Student Survey; USEI = University Student Engagement Inventory; UWES-S = Utrecht Work Engagement Scale; GPA = grade point average.

^a Studies 2 and 3 are based largely on the same data set and include the same concepts. Study 2 was excluded from further analyses.

Note that most of these studies (Study 1, 3, 7, 8) analysed student burnout as a latent factor with three indicators (exhaustion, cynicism and efficacy), whereas Study 6 analysed exhaustion and cynicism separately (with very similar outcomes). That is, no overall burnout scores were computed in these studies.

Finally, all studies measured *student engagement*, either with (translated versions of) the Utrecht Work Engagement Scale for Students (UWES-S, Schaufeli et al., 2002: Studies 4–8) or the University Student Engagement Inventory (USEI, Assunção et al., 2020: Studies 1 and 3).

Associations among burnout, engagement and academic achievement (j)

Tables 13.3 and 13.4 present the substantive findings for the associations between student engagement, student burnout and learning/academic performance-related outcomes. Below, we first focus on the associations between student burnout/engagement and learning outcomes/achievement. Then we discuss the findings for the associations between student burnout/engagement and dropout intentions.

Learning outcomes/achievement

Table 13.3 shows that the association between *student engagement and academic outcomes* was studied in 12 of the 14 samples. In nine of these, a significant main effect of engagement on these outcomes was reported (75%, cf. Table 13.4), all of which were positive, meaning that higher levels of engagement were associated with better learning outcomes. This results in a SIC of .75, indicating that there is strong evidence for the consistency of the beneficial effect of engagement on learning outcomes.

As regards the association between *student burnout and learning outcomes*, this association was studied in 10 of the 14 samples included in this review. Eight of these were statistically significant (one positive association, seven negative associations), resulting in an SIC of $-.60$. This implies that there is strong evidence for the consistency of the adverse effect of student burnout on learning outcomes.

Finally, eight studies examined the *joint effects of engagement and burnout on learning outcomes/achievement*. Only one of these was significant, $SIC = .18$ (Table 13.4). Consequently, it can be concluded that there is *no* consistent evidence for this interaction: when it comes to learning/achievement, student burnout and engagement seem to be independent.

Dropout intentions

Turning to dropout intentions, Table 13.2 shows that the association between *student engagement and dropout intentions* was studied in 11 samples. Six of these reported that this association was significant (four positive, two negative). This results in a SIC of .18 (Table 13.4), meaning that there is *no* consistent evidence for a positive or negative association between engagement and dropout intentions: only about half of the tests of this association were significant, and, if significant, they tended to be at odds with each other.

As regards the association between *student burnout and dropout intentions*, this association was studied in 11 of the samples included here. In all but one of these, a significantly positive main effect was reported, resulting in an SIC of .91. Thus, there is strong evidence for a consistently positive association between burnout and dropout intentions; students reporting a high level of burnout tend to report high levels of dropout intentions as well.

Table 13.3 Findings of the studies included in the review

			<i>Results</i>			
<i>Study^a</i>	<i>Lead author</i>	<i>Sample</i>	<i>Main effects of burnout</i>	<i>Main effects of engagement</i>	<i>Interaction effects</i>	<i>Type of effects</i>
1	Alves		BO → DI = .63***	EN → DI .47 ^{ns}	SB × EN → DI = -.28***	Unstandardized SEM estimates, effect of AE controlling for SB and vice versa
3	Maroco	Overall sample (<i>N</i> = 4,061)	BO → DI = .53*** BO → AP = -.21***	EN → DI = .06 ^{ns} EN → AP = .33***	BO × EN → DI = -.14*** BO × EN → AP = -.04*	Standardized SEM estimates, effects of SE controlling for SB and vice versa.
		Portugal (<i>n</i> = 1,067)	BO → DI = .43*** BO → AP = -.12 ^{ns}	EN → DI = -.02 ^{ns} EN → AP = .42***	BO × EN → DI = -.13** BO × EN → AP = -.01 ^{ns}	
		Brazil (<i>n</i> = 424)	BO → DI = .62*** BO → AP = -.01 ^{ns}	EN → DI = -.02 ^{ns} EN → AP = .40**	BO × EN → DI = -.20*** BO × EN → AP = -.11*	
		Mozambique (<i>n</i> = 413)	BO → DI = .32* BO → AP = -.85***	EN → DI = -.06 ^{ns} EN → AP = .33**	BO × EN → DI = -.11* BO × EN → AP = .02 ^{ns}	
		United Kingdom (<i>n</i> = 314)	BO → DI = .86*** BO → AP = -.56**	EN → DI = .35** EN → AP = .05 ^{ns}	BO × EN → DI = -.19* BO × EN → AP = .03 ^{ns}	
		USA (<i>n</i> = 316)	BO → DI = .02 ^{ns} BO → AP = -.20**	EN → DI = .02 ^{ns} EN → AP = .38**	BO × EN → DI = -.20* BO × EN → AP = -.09 ^{ns}	
		Finland (<i>n</i> = 356)	BO → DI = .13* BO → AP = -.24**	EN → DI = -.26** EN → AP = .34***	BO × EN → DI = -.09 ^{ns} BO × EN → AP = -.06 ^{ns}	
		Taiwan & Macao (<i>n</i> = 762)	BO → DI = .52*** BO → AP = -.34**	EN → DI = .09* EN → AP = .28*	BO × EN → DI = -.09 ^{ns} BO × EN → AP = -.03 ^{ns}	
		Serbia (<i>n</i> = 409)	BO → DI = .49*** BO → AP = -.22*	EN → DI = .12* EN → AP = .09 ^{ns}	BO × EN → DI = -.15* BO × EN → AP = .05 ^{ns}	
4	Gonzalez			EN → AP = .09 ^{ns} , <i>p</i> = .052		Standardized regression estimate
5	Meng			EN → AP = .79**		Correlation coefficient

(Continued)

Table 13.3 (Continued)

			<i>Results</i>			
<i>Study^a</i>	<i>Lead author</i>	<i>Sample</i>	<i>Main effects of burnout</i>	<i>Main effects of engagement</i>	<i>Interaction effects</i>	<i>Type of effects</i>
6	Mostert		BO/EX ↔ DI = .50* BO/CY ↔ DI = .61*	EN ↔ DI = -.39*		Correlation coefficients
7	Bélanger		BO ↔ DI = .54* BO ↔ AP = .20 *	EN ↔ DI = .34* EN ↔ AP = .25*		Correlation coefficients
8	Virga	Romania and India	BO → AP = -.12*	EN → AP = .17**		Correlation coefficients

Notes. BO = burnout; EX = exhaustion; CY = cynicism; EN = student engagement; AP = academic performance; DI = dropout intention, ns = not significant, * $p < .05$, ** $p < .01$, *** $p < .001$. SEM = effects obtained using structural equation modelling.

^a Study 2 was omitted as its database and findings largely overlapped with those of Study 3, the latter study being more useful for the purposes of the current review study.

Table 13.4 Consistency of the findings for the associations between student well-being (engagement and burnout) and student achievement/learning outcomes (based on the findings reported in Table 13.2)

<i>Relation under study</i>	<i>No. of samples</i>	<i>Type</i>	<i>Sign^{main}</i>	<i>SIC^{main}</i>	<i>SE × SB interactions</i>	<i>SIC^{int}</i>
Engagement – performance	12 (3.1–3.8, 4, 5, 7, 8)	Standardized as well as unstandardized regression/SEM estimates, correlations	9 (75%)	(9 – 0)/12 = .75	8 (3.1–3.8) tests, 1 sign (13%)	(0–1)/8 = – .13
Burnout – performance	10 (3.1–3.8, 6–8)		8 (80%)	(1 – 7)/10 = – .60		
Engagement – dropout	11 (1, 3.1–3.8, 6, 7)		6 (55%)	(4 – 2)/11 = .18	9 (1, 3.1–3.8) tests, 7 sign (78%)	(0–7)/9 = – .78
Burnout – dropout	11 (1, 3.1–3.8, 7, 8)		10 (91%)	(10 – 0)/11 = .91		

The joint effect of *student burnout and engagement on dropout intentions* was studied in nine of the samples (Tables 13.3 and 13.4). Seven of these were significant, $SIC = -.78$, signifying that there is strong and consistent evidence that the combination of high levels of burnout and engagement tends to be associated with lower levels of dropout intentions than would be expected on the basis of the main effects of student burnout/engagement. In the absence of consistent main effects of engagement on dropout intentions ($SIC = .18$), this finding suggests that the adverse main effects of burnout on dropout intentions are buffered by high levels of student engagement.

Discussion

This chapter presented a systematic review of the literature on the associations between two specific forms of student well-being (student burnout and student engagement) and student achievement/learning outcomes (specifically, GPA and dropout intentions). Drawing on a systematic review of 7 studies that contained data of 14 statistically independent samples we addressed three research questions, dealing with (1) the consistency of the presumably adverse associations between student burnout and academic/learning-related outcomes; (2) the consistency of the presumably beneficial associations between student engagement and academic/learning-related outcomes; and (3) the joint effects of student burnout and engagement when it comes to academic/learning-related outcomes.

Student burnout and academic/learning-related outcomes

Student burnout (as measured in terms of the MBI-SS: Schaufeli, Martinez et al., 2002) was included in 12 of the 14 samples. We found strong and consistent evidence for a negative association between burnout and academic achievement/learning outcomes ($SIC = -.60$) and a positive association between student burnout and dropout intentions ($SIC = .91$). These findings are in line with the hypotheses stated in the primary studies and mirror findings obtained in the work context for the association between burnout and performance (e.g., Taris, 2006).

Student engagement and academic/learning-related outcomes

Student engagement was included in all 14 samples, drawing on either the UWES-S (Schaufeli, Salanova et al., 2002: 5 samples) or the USEI (Maroco et al., 2016: 9 samples). Note that the samples that included the USEI were drawn from only two studies, both conducted by largely the same group of authors, i.e., the impression that the USEI is a more popular measure of student engagement than the UWES-S would be erroneous. In line with the hypotheses in the primary studies, there was strong and consistent evidence for the association between engagement and academic performance/learning outcomes ($SIC = .75$). Conversely, there was *no* consistent evidence for any association between engagement and dropout intentions ($SIC = .18$). Apparently unengaged students can intend to continue their studies, despite being likely to perform less well than more engaged students. So it might be that some students simply accept lower grades, at least as long as they pass their exams, without drawing the conclusion that they are enrolled in the “wrong” study program and should quit.

Joint effects of student burnout and engagement

Can high levels of student engagement offset the adverse effects of high levels of student burnout? This question was addressed in the two studies (including nine samples in total) employing the USEI as a measure of student engagement (i.e., Study 1, Alves et al., 2022; and Study 3, Maroco et al., 2020). With respect to academic performance, there was *no consistent* evidence for such an interaction (with only one out of eight tests being significant, $SIC = -.13$). However, when combining the samples of the underlying eight primary studies this interaction was small ($-.04$) but significant at $p < .05$, Maroco et al., 2020, which is likely due to the large, combined sample size of $n = 4,061$. This suggests that engagement is a weak buffer of the adverse effects of burnout on academic performance, such that in small-to-medium-sized samples ($n < 500$), this buffer effect is unlikely to be detected.

As regards *dropout intention*, seven out of nine tests of the joint effect of burnout and engagement were significant, providing quite consistent evidence for this effect, $SIC = -.78$. This finding agrees with the notion that high levels of student engagement (as measured with the USEI, i.e., with a focus on “good” student behaviours) can buffer the adverse effects of high levels of burnout on student dropout intention. Apparently, high levels of student engagement can mitigate the adverse effects of high levels of student burnout when it comes to dropout intention.

Additional findings and gaps in the literature

Although the findings of the present review regarding the associations between student well-being (burnout and engagement) may seem convincing and in line with common-sense notions regarding the effects of burnout and engagement on functioning (both in the academic and the work contexts), conclusions regarding the causal direction of these associations cannot be drawn due to methodological and conceptual shortcomings. In a sense, these shortcomings represent gaps in the literature on the associations between student burnout/engagement and academic achievement/learning outcomes; gaps that need to be addressed in future research to obtain qualitatively better insights into the associations among these concepts.

Gaps in the methods used

The strength of any review study’s findings depends on the quality of the underlying primary studies. Unfortunately, the methodological quality of the studies included in the present review was low, with *all* included studies being based on cross-sectional designs and *almost* all study concepts being measured using self-reports (with only Study 4, González et al., 2020, drawing on objective academic transcripts of GPA as a measure of academic performance). Causal inferences are not warranted, especially since the presumed outcomes were either measured concurrently (for dropout intentions) or retrospectively (with past academic performance being taken as an *outcome* of current engagement: cf. Studies 4 and 5). Badly needed in this area are high-quality prospective (full panel) studies in which current well-being (in this case, student engagement and burnout) is related to indicators of *later* academic performance/achievement, preferably controlling for past academic performance/achievement. Such prospective studies are rare but available for general indicators of

student well-being, suggesting that student well-being and performance may be reciprocally related (e.g., Du Toit et al., 2022, for a review).

Gaps in the concepts/theories/models used

Interestingly, the two instruments used to measure student engagement (the UWES-S, Schaufeli, Martinez, et al., 2002, and the USEI, Maroco et al., 2016) differ substantially in their conceptualization. Where the UWES-S focuses primarily on psychologically-flavoured affective/energetic/motivational concepts (vigour, dedication and absorption) and hence on student's *subjective experiences*, the USEI focuses on behavioural, emotional and cognitive indicators representing desirable study *behaviours*, such as active participation in class, being interested in school work and making sure one understands the subject that is being taught (with these behaviours sometimes being referred to as "procedural engagement", Nystrand & Gamoran, 1992).

These different conceptualizations of engagement might well be integrated in an overall model of student well-being (cf. Van Horn et al., 2004, for the occupational context), for example, by assuming that they are part of the same causal chain that leads to high performance/achievement at school (with the affective/motivational dimensions of vigour/dedication/absorption leading to desirable student behaviours, in turn leading to high achievement/study performance). However, from a different angle, showing desirable study behaviours (or high procedural engagement) is just one thing that can be expected from affective-motivationally engaged students. In the work context, affective-motivational work engagement also predicts innovative work behaviour (e.g., Ali et al., 2022); a type of performance that may be less likely to be displayed by *procedurally* engaged workers (or students). In this sense it would be imperative to develop a theoretical framework that specifies how different forms of student engagement and student performance relate to each other. Unfortunately, at present, no such framework exists, with even Maroco et al. (2016) treating different types of engagement as if these are interchangeable.

This points to a deeper underlying issue in current research on the associations between student engagement/burnout and academic performance; the arguments for expecting associations between student engagement/burnout on the one hand and student learning/academic performance on the other are often mainly data-driven. Introductions to the studies reviewed here tend to list previous research in which a particular association was found, without providing an explicit, clear theoretical framework as to which specific mechanisms are responsible for this association. Apparently, common sense is the most important foundation upon which much research on the associations between student burnout/engagement and student academic performance rests: student engagement is good for performance, whereas burnout is bad. Unfortunately, this implies that other mechanisms that might account for the associations among these concepts are neither considered nor tested. For instance, the possibility that high levels of academic performance could boost study motivation and self-efficacy, in turn leading to high levels of engagement, has apparently not been tested, although some studies included in the present review acknowledge that concepts can reciprocally affect each other (e.g., Virga et al., 2022). Testing such ideas requires full panel designs, and we believe that using better-quality theorizing and better-quality designs could mutually reinforce each other, leading to better models, more trustworthy findings and ultimately a better understanding of the associations among the concepts considered here.

Gaps in the knowledge/empirical studies

Overall, our discussion of the gaps in the methods used and concepts/theories/models used in this area indicates that whereas (a) the associations between student burnout/engagement and indicators of academic performance are often quite consistent and in line with the expectations concerning these associations, (b) the evidence supporting these expectations is relatively weak, to the degree that no study –the present review inclusive – has convincingly shown that academic performance is at least partly caused by differences in student burnout/engagement. The contribution of the present review is probably that we have shown to what degree the expected associations among the study concepts are present; that the mechanisms accounting for these associations still need to be elaborated upon (e.g., Reijseger et al., 2012); and that stronger empirical tests of these associations and mechanisms are imperative to bring the field further.

Practical implications

Although the number of studies included in this review is limited and the strength of the evidence presented here for causal inferences is modest at best, it is still possible to provide some tentative practical recommendations. Importantly, the main findings of this study suggest that (a) burnout has adverse effects on academic performance, while engagement has beneficial effects on performance; (b) burnout has adverse effects on dropout intentions, while engagement has considerably weaker effects on dropout intentions; and (c) although there is some evidence that engagement can mitigate the adverse effects of burnout on academic achievement and dropout intentions, from a practical point of view these interaction effects are negligibly small.

Overall, these findings imply that from a practical point of view, it is worthwhile for practitioners (especially those involved in designing and/or teaching classes, but also others who are in regular contact with students such as school counsellors) to focus on preventing student burnout and stimulating student engagement, e.g., by providing students with clear goals and rules, by enhancing personal control over one's performance (Schlenker et al., 2013), with a supportive environment and by preventing excessive study loads (e.g., Chong et al., 2025).

Conclusion

The evidence for causal associations between student engagement/burnout and academic performance in university education is not strong, yet the present study has demonstrated that findings are largely consistent and in line with common expectations regarding these associations (except for the absence of consistent evidence for an association between engagement and dropout intentions). Future research should draw on methodologically stronger designs and more extensively elaborated theories; given the findings of the present review, we believe that this will be a necessary next step in the research that is currently available in this area.

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* = studies included in the review.