International students’ burnout and self-efficacy profiles and their relation to writing conceptions

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Abstract
International students are at risk of burnout during their studies and face challenges in their writing. This study explores the burnout and self-efficacy profiles of international students and how these profiles differ in writing conceptions. Participants were 162 international students at a research-intensive Finnish university. They completed the HowULearn Questionnaire and the Writing Process Questionnaire. Latent profile analysis identified three profiles combining students’ burnout and self-efficacy: high burned-out students (16.0%), moderate burned-out students (45.1%), and low burned-out students with high self-efficacy (38.9%). The profile membership was not significantly related to students’ demographic, linguistic, or writing-related characteristics. The results showed that the combination of a lower level of study-related burnout and relatively higher self-efficacy led to fewer blocks, less procrastination and perfectionism, and more positive conceptions of knowledge transforming and productivity in writing. Overall, the study indicated that study-related burnout and self-efficacy contributes to understanding international students’ writing processes.

Keywords
Study-related burnout, self-efficacy, writing conceptions, international students, higher education

Introduction
Research has found that international students are at risk of burnout in the new learning contexts (Jin et al., 2021; Rönkkönen et al., 2022). For international students, acculturative stress and heavy workload contribute to an increased risk of experiencing burnout (Jin et al., 2021; Küçüksüleymanoğlu, 2021). Although most of international students in Finnish context report that the learning contents are close to their own experiences and evoke their learning interests, sometimes the aims of teaching are unclear to them or not in line with the learning content or assessment methods, that is, insufficient alignment (Rönkkönen et al., 2022; Yin et al., 2022). Such
negative perception of alignment has been found to increase the risks of burnout (Yin et al., 2022). Moreover, international students who are better at time and effort management tend to experience lower risks of burnout in their studies (Yin et al., 2022). Although international students’ burnout has been examined along with psychological and sociocultural adjustment (Jin et al., 2021; Küçüksüleymanoğlu, 2021), research on their burnout in relation to their learning and writing processes remains limited.

International students have been found to face challenges in their writing processes (Küçüksüleymanoğlu, 2021; Phakiti and Li, 2011; Öozoğlu et al., 2015). Among non-international students, writing apprehension and anxiety have proven to be related to the complexity and difficulty of writing and the stress of assessment (Bayat, 2014; Kelly et al., 2022). Thus, the difficulties encountered by international students in their writing processes are assumed to be partly related to their risk of burnout. Writing conceptions have been used to explore the whole process of writing, regarding both challenges and strengths (Castelló et al., 2017). International students face writing-related difficulties such as blocks, procrastination, and perfectionism, which have found to be related to how they process information and manage time and effort in their studies (Yin et al., 2023). Although writing conceptions have been found to be related to burnout among PhD students (Lonka et al., 2014, 2019), research on international students’ writing conceptions in relation to their burnout is still scarce at the bachelor’s and master’s level.

Undergraduate students have been identified as profiles with different combinations of self-efficacy (Kim et al., 2015; Mei et al., 2022; Paciello et al., 2016; Wang et al., 2021). With the higher level of self-efficacy, they tend to apply self-regulated learning strategies better (Kim et al., 2015), less depression and more satisfaction (Paciello et al., 2016) and better language proficiency (Wang et al., 2021). Self-efficacy has proven to be one important factor in supporting both student well-being (Bulgan and Çiftçi, 2017) and their writing (Hen and Goroshit, 2014; Mendoza et al., 2023; Sun and Wang, 2020). It is known that non-international students with lower academic self-efficacy are at a greater risk of study-related burnout (Hu and Yeo, 2020; Kong et al., 2021; Özhan, 2021). Such students are more likely to experience procrastination in their writing process (Hen and Goroshit, 2014; Niazov et al., 2022). Nonetheless, burnout, writing experiences, and self-efficacy have not been examined in the same study, let alone in the context of international students. Previous research shows that students may have individual variance in the different configurations of burnout components. This implies the need to examine burnout among higher education students using a person-oriented approach (Asikainen et al., 2022; Salmela-Aro and Read, 2017). Thus, the present study aims to identify burnout and self-efficacy profiles among international students and to explore how these profiles differ in terms of writing conceptions. Since the target group tend to be heterogeneous regarding the levels of the studied phenomena, this study focuses on individual variation and thus applies the person-centred approach (Laursen and Hoff, 2006; Muthén and Muthén, 2000). For this reason, investigating burnout and self-efficacy profiles and their relation to writing conceptions may produce new insights to support international students’ well-being and writing experiences.

The person-centred approach to study-related burnout and self-efficacy

Study-related burnout has been defined as a combination of exhaustion, cynicism, and a sense of inadequacy in an educational context (Salmela-Aro et al., 2009; Schaufeli et al., 2002). More specifically, study-related exhaustion is defined as chronic fatigue, tiredness, and a lack of emotional energy (Salmela-Aro et al., 2009). Cynicism involves the absence of interest, indifference to studying, and a sense of meaninglessness and sense of inadequacy refers to diminished feelings, and
loss of the sense of accomplishment and achievement (Salmela-Aro et al., 2009). Because burnout is a multi-component phenomenon, different combinations of exhaustion, cynicism, and a sense of inadequacy can emerge. The person-centred approach takes the individual as the unit of analysis and is able to reveal individual variation and the heterogeneity of burnout among students (Asikainen et al., 2022; Salmela-Aro and Read, 2017). For example, among studies investigating university students’ study-related burnout, the variable-centred approach generalises the relations between variables (Kok et al., 2023; Salmela-Aro et al., 2022; Schaufeli et al., 2002), while the person-centred approach identifies different combinations of burnout dimensions (May et al., 2020; Rönkkönen et al., 2022; Turhan et al., 2022). For example, burnout students, or high burnout, have been depicted as students with relatively high risks on all three dimensions of burnout (May et al., 2020; Rönkkönen et al., 2022), while engaged students, or well-functioning students, are portrayed as those at relatively low risk of burnout (Salmela-Aro and Read, 2017; Turhan et al., 2022). Burnout profiles have also been identified by combining constructs found to be related to burnout, such as engagement (Salmela-Aro and Read, 2017; Tuominen-Soini and Salmela-Aro, 2014) and interest and relevance (Asikainen et al., 2022).

A negative correlation has been found between burnout and self-efficacy, and these two factors have been used together to explore non-international students’ well-being (Maricutoiu and Sulea, 2019; Silva-Lorente et al., 2023; Yu et al., 2016), learning process (Hu and Yeo, 2020), and learning outcomes (Bulfone et al., 2022). Research on the direction and nature of the relationship between burnout and self-efficacy is inconsistent. Longitudinal research has found that non-international students’ self-efficacy exerts a direct effect on burnout (Maricutoiu and Sulea, 2019). Nevertheless, others hold that exhaustion has direct and indirect effects on self-efficacy (Hu and Yeo, 2020; Özhan, 2021). Thus, this cross-sectional study focuses on their combinations rather than causes and consequences, and use self-efficacy as a profiling variable along with study-related burnout. In addition, self-efficacy has also been regarded as a measure of well-being (Huang et al., 2021; Paciello et al., 2016; Silva-Lorente et al., 2023) apart from a measure of learning.

### Group differences of study-related burnout and self-efficacy

The variable-centred research findings on how demographic characteristics lead to differences in study-related burnout are inconsistent. Risk of burnout does not differ according to gender among international students in Croatia (Gradiski et al., 2022) and among non-international nursing students in China (Kong et al., 2021). Nevertheless, female experience higher levels of study-related exhaustion and sense of inadequacy than male among international students in Turkey (Küçüksüleymanoğlu, 2021). As for length of study, international students in more senior years are more likely to be cynical about their studies than those students with less academic year (Gradiski et al., 2022). Similar findings emerge among non-international students in US (Allen et al., 2020) and Spain (Fernández-Castillo and Fernández-Prados, 2021). Furthermore, some longitudinal studies have found that non-international students’ the risks of burnout increase from the beginning to the end of their first academic year (Kok et al., 2023). By contrast, another research found that non-international students’ risks of burnout are negatively related to academic year (Kong et al., 2021; Küçüksüleymanoğlu, 2021). Another longitudinal research has found that burnout remain steady over time (Rios-Risquez et al., 2018). Regarding educational level, undergraduate students have been found to be more burned-out than graduate students among international students (Küçüksüleymanoğlu, 2021). As for disciplines, students in natural-applied disciplines (e.g. engineering and health sciences) experience the higher risks of exhaustion, while students in social-applied disciplines (e.g. business, education, and law) experience the lower risks of inadequacy than
those in other disciplines (Allen et al., 2020). The division within (neighbouring) disciplines tend not to explain the differences in burnout. For example, medical students’ risks of burnout do not differ from each other no matter their majors are surgical specialities, people-oriented primary care or others (Gradiski et al., 2022). As the findings above are contradictory, the person-oriented focus may bring new knowledge showing that students may score high and low on different dimensions of burnout.

Most of the existing research on international students’ study-related burnout and stress in relation to linguistic and writing-related characteristics is qualitative. International students in Turkey regards language as barriers when they write assignments (Küçüksüleymanoğlu, 2021). However, English as native language does not lead to differences in risks of burnout among international students in Croatia (Gradiski et al., 2022).

Longitudinal research finds no gender differences in self-efficacy among Chinese university students (Huang et al., 2021). Self-efficacy decreases during the second academic year and then increases in the third year (Huang et al., 2021). By contrast, another longitudinal research reveals that in Italian university, female nursing students had the lower self-efficacy than male students at the beginning of the first year, and then their self-efficacy increase over time (Bulfone et al., 2021). At the end of the third year, male and female students have similar levels of self-efficacy (Bulfone et al., 2021). Undergraduates’ self-efficacy for writing increases when they intensively learn new writing skills in their writing practice (Van Blankenstein et al., 2019). Moreover, academic self-efficacy has been found to be positively related to language proficiency among English-as-a-foreign-language (EFL) undergraduates (Wang et al., 2021). Furthermore, students in high self-efficacy profile have the higher total scores in standardised language test than their counterparts, while no group difference has been found regarding scores in writing section (Wang et al., 2021).

**Writing conceptions and their associations with study-related burnout and self-efficacy**

Students may feel anxiety and apprehension during or even before writing if they perceive difficulties or the risk of failure, even though they might possess the required writing skills (Bayat, 2014; Kelly et al., 2022; Phakiti and Li, 2011). Such writing apprehension emerges particularly among students who regard writing as an innate ability, for they are more likely to underestimate their writing skills (Palmquist and Young, 1992; Sanders-Reio et al., 2014). As a tool of assessment, writing has been found to be related to academic achievement (Keith et al., 2020). Meanwhile, students with a lower GPA suffer from a higher risk of burnout (Asikainen et al., 2019; Hyytinen et al., 2022). Furthermore, poor lecturing, such as boring or disorganised delivery of course material, creates a tendency among students to avoid writing, which then becomes another source of burnout (Kelly et al., 2022). Based on these studies, writing conceptions are assumed to be related to study-related burnout, and the present study examines their relationship. Moreover, this relationship is especially interesting in the context of international students, who may face challenges in their academic writing and well-being in a new teaching-learning context (Gradiski et al., 2022; Phakiti and Li, 2011).

Writing conceptions have been investigated using six constructs: blocks, procrastination, perfectionism, innate ability, knowledge transforming, and productivity (Boice, 1993; Lonka et al., 2014). The first four consist of maladaptive writing conceptions, for they hinder the achievement of goals in the writing process (Boice, 1993; Lonka et al., 2014). They focus on losing fluency (Zorbaz, 2015), postponing (Flett et al., 2012; Solomon and Rothblum, 1984), pursuit of high standards and flawlessness (Flett and Hewitt, 2002; Hewitt and Flett, 1991), and beliefs about writing as an innate
ability (Palmquist and Young, 1992; Sawyer, 2009), respectively. By contrast, the latter two, that is, knowledge transforming and productivity, have been regarded as adaptive writing conceptions (Boice, 1993; Castelló et al., 2017). Knowledge transforming refers to generating new ideas and developing knowledge (Pyhältö et al., 2012; Tynjälä et al., 2001). Productivity concerns self-affirmation in the sense that students continue to regard themselves as active and productive authors (Castelló et al., 2017; Lonka et al., 2014; Sanders-Reio et al., 2014). For students at the bachelor and master’s level, writing conceptions have been found to be related to their writing quality (Martínez-Fernández et al., 2017) and learning processes (Yin et al., 2023). Nevertheless, limited research investigates their writing conceptions in relation to well-being.

Although writing conceptions have proven to be related to burnout (Castelló et al., 2017; Lonka et al., 2014, 2019), research in this area has primarily been conducted among PhD students and postdoc researchers. More specifically, blocks, procrastination, and perfectionism have been found to be positively related to exhaustion among these groups (Castelló et al., 2017; Lonka et al., 2014). Among postdoc researchers, procrastination and innate ability have been found to be positively related to cynicism (Castelló et al., 2017). Nevertheless, no significant relationship has been identified between their knowledge transforming, productivity, and burnout (Castelló et al., 2017). Little knowledge exists about the relationship between writing conceptions and burnout among international students at the bachelor’s and master’s level. Though studies have found procrastination and maladaptive perfectionism to be positively related to burnout among non-international undergraduates (Chang et al., 2016; Turhan et al., 2022; Yu et al., 2016; Zhang et al., 2007), they did not measure perfectionism in writing process.

In university studies, writing is a key student activity performed continuously in various courses and assignments. It is scheduled and linked both to course activities and assessment and course completion. Writing is often performed individually, and it requires constant revisions and effort (Huerta et al., 2017). Therefore, self-efficacy is important in order for students to direct their efforts and achieve their goals in this process (Huerta et al., 2017). Writing proficiency has proven to be positively related to self-efficacy for both international students (Poyrazlı et al., 2002) and non-international students (Sun and Wang, 2020). However, the relationship between writing conceptions and self-efficacy remains unknown, with the exception of writing procrastination, which has proven to be negatively related to self-efficacy among non-international students (Hen and Goroshit, 2014; Niazov et al., 2022). Furthermore, self-efficacy (or the lack thereof) has been regarded as one of the predictors of writing procrastination (Hen and Goroshit, 2014; Niazov et al., 2022). More specifically, the higher level of self-efficacy for thesis writing have been found among student profile with the combination of the lower levels of writing block, procrastination, and perfectionism (Mendoza et al., 2023).

**Aim and research questions**

This study aims to explore the burnout and self-efficacy profiles of international students and how these profiles differ in relation to writing conceptions. The research questions are as follows:

1. What profiles can be identified on the basis of international students’ study-related burnout and self-efficacy?
Hypothesis 1: Several profiles are identified with different combinations of dimensions of study-related burnout and self-efficacy (Asikainen et al., 2022; Salmela-Aro and Read, 2017).

(2) What are the differences among burnout and self-efficacy profiles in relation to demographic, linguistic, or writing-related characteristics?

Hypothesis 2: Students with different burnout and self-efficacy profiles score differently concerning the background variables such as gender (Bulfone et al., 2021; Küçüksüleymanoğlu, 2021), length of study (Gradiski et al., 2022; Huang et al., 2021; Kok et al., 2023), educational level (bachelor’s or masters’ students; Küçüksüleymanoğlu, 2021), student status (exchange or degree students), faculty (Allen et al., 2020), length in the same language of instruction (Gradiski et al., 2022; Sung, 2022), exemption from language test (Wang et al., 2021), and number of writing courses.

(3) How do burnout and self-efficacy profiles differ in their relationship to writing conceptions?

Hypothesis 3: International students with the combination of the higher risks of burnout and the lower self-efficacy have the higher levels of blocks, procrastination, perfectionism, innate ability, and the lower levels of knowledge transforming, and productivity (Castelló et al., 2017; Lonka et al., 2014, 2019; Mendoza et al., 2023).

Methodology

Research context

The research-intensive Finnish university that formed the context of this study contained 1150 registered bachelor and master’s students whose nationality was not Finnish. All bachelor’s programmes (180 ECTS, 3 years) had been taught in Finnish or Swedish before autumn 2019. Correspondingly, there were limited numbers of international degree-seeking international students at the bachelor level. By contrast, the language of instruction in most master’s programmes (120 ECTS, 2 years) was English.

Participants

A total of 162 international students at the bachelor’s and master’s level participated in the study in 2018 and 2019. They were informed of the purpose of the study and participated voluntarily. Forty-eight were male (29.6%) and 113 were female (69.8%), while one did not report their gender. The students’ age ranged from 19 to 47 (M = 26, SD = 5.2). Regarding student status, degree-seeking master’s students accounted for the largest group (48.1%), followed by master’s-level exchange students (24.7%), bachelor’s-level exchange students (22.2%), and degree-seeking bachelor’s students (4.9%). The distribution of participants mirrored that of registered international students at the faculties. Seventy-three students were from the Faculties of Science, Agriculture and Forestry, Biological and Environmental Sciences, and Medicine (45.0%), while the remainder were from the Faculties of Social Sciences, Arts, Educational Sciences, Law, and the Swedish School of Social Science (54.9%). The participants came from 46 countries with 49 languages as their first language. At this university, 90.1% of them were taught in English. Before enrolment, 32.1% of students had
studied with the same language(s) of instruction as the current one(s) for less than 1 year, while 19.1% had no such experience.

**Measures**

The data were collected using the *HowULearn Questionnaire* (Hailikari and Parpala, 2014; Parpala and Lindblom-Ylänne, 2012) and the *Writing Process Questionnaire* (Lonka, 2003; Lonka et al., 2014). The items (in English) were scored on a five-point Likert-scale ranging from completely disagree (1) to fully agree (5). The total scores of every subscale were computed by averaging the items.

Students’ study-related burnout and self-efficacy were measured by the *HowULearn Questionnaire* (Parpala and Lindblom-Ylänne, 2012). The scale measuring increased risk of study-related burnout in *HowULearn Questionnaire* was developed from the *School Burnout Inventory* (SBI; Salmela-Aro et al., 2009). It consists of nine items measuring three subdimensions of burnout in students’ studies: exhaustion (3 items; e.g. ‘I often sleep badly because of matters related to my studies’), cynicism (4 items; e.g. ‘I feel that I am losing interest in my studies’), and a sense of inadequacy (2 items; e.g. ‘I often have feelings of inadequacy in my studies’) (Parpala and Lindblom-Ylänne, 2012; Salmela-Aro et al., 2009). These items can be used to measure the risk of burnout instead of focussing on the respective subscales (Salmela-Aro et al., 2009). Five items measured students’ self-efficacy for learning and performance, for instance, ‘I expect to do well in my studies’. They were further developed from the *Motivated Strategies for Learning Questionnaire* (MSLQ; Pintrich et al., 1991).

Students’ writing conceptions were measured by the *Writing Process Questionnaire* (Lonka, 2003; Lonka et al., 2014). The statements that students described their writing experiences concerned blocks (5 items; e.g. ‘my previous writing experiences are mostly negative’), procrastination (4 items; e.g. ‘I find it difficult to start writing’), perfectionism (4 items; e.g. ‘I find it difficult to hand over my texts, because they never seem complete’), innate ability (2 items; e.g. ‘the skill of writing is something we are born with; it is not possible for all of us to learn it’), knowledge transforming (6 items; e.g. ‘writing develops thinking’) and productivity (4 items; e.g. ‘I am a regular and productive writer’).

The last section of the survey was background information, including age, gender, faculty, and length of study. Linguistic background was represented by first language, the language test (exempt or required for enrolment) and years spent in schools or countries where the major language was the same as the current study programme). This was because English was not the language of instruction for all participants, and students possibly attain the required language proficiency through time spent in a particular linguistic environment. Their experience of writing courses was measured by the number of writing courses in which they had participated, consisting of ongoing courses, courses completed at their current university, and courses in previous institutions.

**Data analyses**

Confirmatory factor analysis (CFA) was conducted to test the factorial structure of the study-related burnout and self-efficacy using SPSS AMOS 27. The model of study-related burnout achieved reasonable model fit: $\chi^2/df = 1.949$, $p = .004$, CFI = 0.967, TLI = 0.951, RMSEA = 0.077, SRMR = 0.056. The results of the model of self-efficacy and writing conceptions were $df = 5$, $\chi^2 = 38.202$, $p < .001$, CFI = 0.911, TLI = 0.823, RMSEA = 0.203, SRMR = 0.064, and $\chi^2/df = 1.884$, $p < .001$, CFI = 0.841, TLI = 0.813, RMSEA = 0.074, SRMR = 0.077. For every factor, composite reliability was
higher than 0.7 and AVE was higher than 0.5 (see Table 1), which showed that the convergent validity of the construct was adequate.

Then latent profile analysis (LPA) was performed to divide students into homogeneous groups based on their Z scores on study-related burnout and self-efficacy via the tidyLPA package in R (Rosenberg et al., 2018). We used the following statistical criteria to choose the best fitting model: the Akaike Information Criterion (CAIC), the Bayesian (BIC), sample-size-adjusted BIC (SABIC), log-likelihood (LL), approximate weight of evidence criterion (AWE), and bootstrapped likelihood ratio test (BLRT) (Nylund et al., 2007; Nylund-Gibson and Choi, 2018). The lowest value of the BIC and CAIC suggested a 3-profile solution (see Table 2 and Figure 1). Model with the lower SABIC value and the higher LL represents a better fit, whereas the SABIC of models constantly decreased and LL increased. Every model of the BLRT p value was significant, therefore no k − 1 profile solution could be supported by nonsignificant p value for a k profile solution. In addition, the p value which was most close to nonsignificant was for four profile solution, suggesting k = 3 to some degree. However, the highest entropy value emerged in the 5-profile solution (>0.80: good). To sum up, fit indices did not converge on a single solution. On the basis of interpretability, previous research, and theory, the three-profile model was chosen.

Table 1. Validity and reliability of scales.

<table>
<thead>
<tr>
<th>Factor</th>
<th>CR</th>
<th>AVE</th>
<th>Omega [95% CI]</th>
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<tbody>
<tr>
<td>Exhaustion</td>
<td>.749</td>
<td>.501</td>
<td>.752 [.675–.813]</td>
</tr>
<tr>
<td>Cynicism</td>
<td>.891</td>
<td>.675</td>
<td>.878 [.834–.909]</td>
</tr>
<tr>
<td>Sense of inadequacy</td>
<td>.803</td>
<td>.672</td>
<td>—^a</td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>.904</td>
<td>.656</td>
<td>.850 [.779–.896]</td>
</tr>
<tr>
<td>Blocks</td>
<td>.833</td>
<td>.506</td>
<td>.743 [.640–.801]</td>
</tr>
<tr>
<td>Procrastination</td>
<td>.817</td>
<td>.528</td>
<td>.759 [.688–.815]</td>
</tr>
<tr>
<td>Perfectionism</td>
<td>.806</td>
<td>.582</td>
<td>.686 [.590–.771]</td>
</tr>
<tr>
<td>Innate ability</td>
<td>.859</td>
<td>.755</td>
<td>—^a</td>
</tr>
<tr>
<td>Knowledge transforming</td>
<td>.838</td>
<td>.520</td>
<td>.637 [.500–.750]</td>
</tr>
<tr>
<td>Productivity</td>
<td>.848</td>
<td>.582</td>
<td>.796 [.738–.843]</td>
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</tbody>
</table>

^aMcDonald’s omega was generated using Omega macro syntax (Hayes and Coutts, 2020). It did not support calculating for two-item factor sense of inadequacy and innate ability.

Table 2. Fit statistics and classification coefficients.

<table>
<thead>
<tr>
<th>K</th>
<th>LL</th>
<th>BIC</th>
<th>SABIC</th>
<th>CAIC</th>
<th>AWE</th>
<th>BLRT p</th>
<th>Entropy</th>
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<tbody>
<tr>
<td>1</td>
<td>−917.466</td>
<td>1875.633</td>
<td>1850.306</td>
<td>1883.633</td>
<td>1938.333</td>
<td>—</td>
<td>—</td>
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<tr>
<td>2</td>
<td>−842.6604</td>
<td>1751.46</td>
<td>1710.304</td>
<td>1764.46</td>
<td>1854.974</td>
<td>.010</td>
<td>.812</td>
</tr>
<tr>
<td>3</td>
<td>−813.9783</td>
<td>1719.533</td>
<td>1662.549</td>
<td>1737.533</td>
<td>1863.504</td>
<td>.010</td>
<td>.803</td>
</tr>
<tr>
<td>4</td>
<td>−805.8054</td>
<td>1728.625</td>
<td>1655.812</td>
<td>1751.625</td>
<td>1912.963</td>
<td>.040</td>
<td>.839</td>
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<tr>
<td>5</td>
<td>−794.1157</td>
<td>1730.684</td>
<td>1642.042</td>
<td>1758.684</td>
<td>1955.425</td>
<td>.010</td>
<td>.856</td>
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<td>7</td>
<td>−774.0049</td>
<td>1741.338</td>
<td>1621.039</td>
<td>1779.338</td>
<td>2047.022</td>
<td>.020</td>
<td>.823</td>
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Note. K: number of profiles; AWE: approximate weight of evidence criterion.
A Chi-square test and Cramer’s V were performed to examine the differences in demographic characteristics between the burnout and self-efficacy profiles. Then a one-way ANOVA with the Bonferroni post-hoc test was used to test whether group differences in writing conceptions between the burnout and self-efficacy profiles were statistically significant.

Results

Descriptive statistics

Study-related exhaustion correlated positively with maladaptive writing conceptions, that is, blocks, procrastination, perfectionism, and innate ability, to a statistically significant degree (see Table 3), as did a sense of inadequacy. Cynicism correlated positively with blocks, procrastination, and perfectionism, but no statistically significant association was found between cynicism and innate ability. These burnout dimensions correlated negatively with adaptive writing conceptions, that is, knowledge transforming and productivity. Self-efficacy was found to be negatively related to all three burnout dimensions. Self-efficacy displayed significant negative correlations with blocks, perfectionism, and innate ability. In turn, it correlated positively with knowledge transforming and productivity.

International students’ burnout and self-efficacy profiles

Self-efficacy differentiated the profiles, as did exhaustion, cynicism, and a sense of inadequacy (see Figure 2). Three profiles emerged and were labelled (1) high burned-out students (N = 26, 16.0%), (2) moderate burned-out students (N = 73, 45.1%), and (3) low burned-out students with high self-efficacy (N = 63, 38.9%). High burned-out students represented a typical student group with the highest score on exhaustion, cynicism, and a sense of inadequacy. While their scores on self-efficacy were relatively high, they were nevertheless the lowest among the three profiles. In turn, low burned-out students with high self-efficacy scored lowest on exhaustion, cynicism, and a sense of inadequacy.
Table 3. Descriptive statistics and Pearson’s correlations among all variables.

<table>
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<tbody>
<tr>
<td>1. Exhaustion</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Cynicism</td>
<td>.56***</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>3. Sense of inadequacy</td>
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<td>4. Self-efficacy</td>
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<td>5. Blocks</td>
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<td>.26***</td>
<td>.40***</td>
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<td>6. Procrastination</td>
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<td>8. Innate ability</td>
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<td>-.18*</td>
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<td>10. Productivity</td>
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***p < .001, **p < .01, *p < .05.
inadequacy and highest on self-efficacy. Moderate burned-out students displayed a medium level of exhaustion, cynicism, and a sense of inadequacy, which was statistically significantly higher than that of low burned-out students with high self-efficacy. They scored relatively high on self-efficacy, but this score did not differ to a statistically significant from that of high burned-out students.

**International students’ burnout and self-efficacy profiles in relation to demographic variables**

Table 4 showed the differences in frequency according to the demographic, linguistic, and writing-related characteristics. Female students, humanity and social science students, degree students, masters’ students, and students with longer length of study had the higher proportion of high burned-out students. For students who had longer time studying in the same language of instruction, had been required to meet the requirement of language test before enrolment, and had taken one to four writing courses, surprisingly, their proportion of high burned-out students was higher than the whole distribution was. Nevertheless, cross tabulation results revealed that profile membership was not, to a statistically significant degree, related to their gender, length of study, educational level (bachelor’s or masters’ students); student status (exchange or degree students), faculty, length in the same language of instruction, exemption from language test, or number of writing courses. These hypotheses were not confirmed.

**Differences in writing conceptions between burnout and self-efficacy profiles**

As Table 5 demonstrates, of the three profiles, high burned-out students reported highest scores on all maladaptive writing conceptions (blocks, procrastination, perfectionism, and innate ability). Meanwhile, they scored lowest on adaptive writing conceptions (knowledge transforming and productivity). By contrast, low burned-out students with high self-efficacy scored lowest on maladaptive writing conceptions and highest on adaptive writing conceptions. Moderate burned-out students received medium scores on maladaptive writing conceptions. The ANOVA results revealed that the student profiles differed to a statistically significant degree for blocks, procrastination, perfectionism, knowledge transforming and productivity; the sole exception here was innate ability.

![Figure 2. Burnout and self-efficacy profiles.](image-url)
The post-hoc results showed that high burned-out students scored statistically higher on blocks (MD = 0.88, \( p < .001 \)), procrastination (MD = 0.74, \( p < .001 \)), and perfectionism (MD = 0.99, \( p < .001 \)) than did low burned-out students with high self-efficacy, with the exception of innate ability (MD = 0.41, \( p > .05 \)). They scored statistically significantly lower on knowledge transforming (MD = -0.38, \( p < .05 \)) and productivity (MD = -0.63, \( p < .01 \)). Moderate burned-out students scored statistically higher on blocks (MD = 0.51, \( p < .001 \)), procrastination (MD = 0.55, \( p < .001 \)), and perfectionism (MD = 0.72, \( p < .001 \)) and lower on productivity (MD = -0.57, \( p < .001 \)) than did low burned-out students with high self-efficacy.
Discussion

Burnout and self-efficacy profiles

The present study focused on the burnout and self-efficacy profiles of international students in relation to their writing conceptions. This person-centred approach furthers the understanding of the combination of burnout risks that university students face. Only a small number of studies, such as the work of Rönkkön et al. (2022), have explored burnout profiles among international students. To our knowledge, no study has combined burnout profiles with self-efficacy in this context. High burned-out students displayed lower levels of self-efficacy than did the other two profiles. However, the group mean of self-efficacy in this profile was still above the moderate level. By contrast, in the previous studies, low self-efficacy profile students’ self-efficacy was below the moderate level (Mei et al., 2022; Wang et al., 2021). Therefore, in this study, the first profile was not labelled high burned-out students with low self-efficacy. Low burned-out students with high self-efficacy scored lower than their counterparts on our study-related burnout measures. In previous research (Salmela-Aro and Read, 2017), this group has been labelled engaged students. We avoided the term engaged students because engagement was not measured in this study. The other reason is that the recent person-centred studies have found the combination of relatively high exhaustion and engagement (Salmela-Aro et al., 2016, 2022; Tuominen-Soini and Salmela-Aro, 2014), which challenges the previous findings that engagement is the opposite of burnout (Schaufeli et al., 2002; Schaufeli and Salanova, 2007). Moderate burned-out students represented the student group who experienced a medium level of study-related burnout in this study. In previous research, such students have also been termed ineffective students and ineffectacious students (Asikainen et al., 2022; Salmela-Aro and Read, 2017). It should be noted that to precisely describe the characteristics of burnout and self-efficacy of every profile, symbolic or allegorical adjectives were not used in the present study.
The international students in the present study experienced a lower level of burnout risk than the Chinese international students in South Korea studied by Jin et al. (2021) and the non-international Chinese nursing students investigated by Kong et al. (2021). The proportion of students suffering from a high level of burnout was over twice as large in Rönkkönen et al. (2022). This study, which investigated a sample of international and non-international students, was conducted in the same context as our research and at a similar time. Nonetheless, a sense of inadequacy was not measured in that research (Rönkkönen et al., 2022). Study-related exhaustion, cynicism, and a sense of inadequacy have been regarded as different symptoms (Rönkkönen et al., 2022; Salmela-Aro et al., 2009). Thus, students could face a higher risk in one dimension than another. For example, non-international students in Singapore faced a lower risk of cynicism than of other burnout dimensions (Kok et al., 2023). The other view is that exhaustion, cynicism, and a sense of inadequacy are successive phases (Meriläinen and Kuittinen, 2014; Salmela-Aro and Read, 2017). Furthermore, exhaustion and cynicism have been found to predict a sense of inadequacy over time (Parker and Salmela-Aro, 2011). A sense of inadequacy was ranked the third among US master’s and doctoral students (including international students) in a study by Allen et al. (2020). By contrast, it was the highest burnout dimension in Asikainen et al. (2022) and the present study, especially among moderate burned-out students. It is unclear why they reported a higher risk of a sense of inadequacy than of other burnout dimensions. It might be explained by these students’ high level of self-efficacy and that self-efficacy is stronger correlated to inadequacy than the other two burnout dimensions. However, this cannot explain the third profile, whose self-efficacy did not different from moderate burned-out students. If considering the educational context, the features of their perception of the teaching-learning environment could contribute to understanding the phenomenon. Previous research has shown international students in Finnish university are critical about teachers’ feedback and invoked by alignment, which tend to have a sense of inadequacy (Yin et al., 2022).

**Burnout and self-efficacy profiles in relation to demographic characteristics and international status**

Considering the second research question, the study found no gender difference between the burnout and self-efficacy profiles. This is in line with previous findings that the risk of burnout does not differ according to gender (Gradiski et al., 2022; Kong et al., 2021). The present study found no difference in burnout and self-efficacy profiles according to the length of study, which supports the longitudinal findings that burnout remains steady over time (Ríos-Risquez et al., 2018).

Contrary to the findings among international students in Turkey (Küçüksüleymanoğlu, 2021), in Finland, international Master’s students, rather than Bachelor’s, tended to be overrepresented in high burned-out students, although not at the statistically level. This phenomenon would be associated with the context that all the Bachelor’s programme were taught in Finnish. Therefore, being accepted as exchange students at this Finnish university probably meant that they had been eligible for adapting to the language of instruction as well as the programme as a whole.

Previous research has hardly focus on the difference between exchange students and degree students. The study suggests future research to test if degree students experience the combination of the higher risks of burnout. Although exchange students tend to have the more intensive schedule than degree students, they probably experience the lower level of burnout, for their multiple aims and expectations of study may reduce their burden.

The results showed that international students at the bachelor’s and master’s level hold more positive perceptions of generating new ideas and developing knowledge in their writing experience.
than did PhD students (see Lonka et al., 2014, 2019). They did not engage in the intensive writing with more complex, long-term, and vague goals. Thus, they tended to perceive their writing experience more positively than PhD students in the same context. This can explain the relatively high self-efficacy found among students in the present study.

Although international students struggle with their academic work, especially if it is performed in a language other than their first language (Tran and Bui, 2023), their linguistic background was not found to be related to burnout or burnout profile membership in either this study or research conducted by Gradiski et al. (2022). Furthermore, the number of prior writing courses does not explain the difference of burnout risk. This implies that the way international students perceive their writing process might be influenced by both previous writing experiences and the current learning environment (Kelly et al., 2022).

**Relationship between study-related burnout, self-efficacy, and writing conceptions**

The study indicated that international students with a higher risk of burnout and lower self-efficacy experienced more writing blocks. This is a novel finding, as previous research has not measured these relationships. The results showed that burnout was associated with an increased risk of perfectionism, while self-efficacy was related to a decrease in perfectionism. This extends previous findings that perfectionism in writing is positively related to exhaustion among PhD students (Lonka et al., 2014, 2019). Moreover, the findings demonstrated that when international students faced less risk of study-related burnout, the tendency to postpone their writing decreased and they were more likely to regard themselves as productive writers. Our study findings also indicated that self-efficacy was negatively related to innate ability and positively related to knowledge transforming.

The study demonstrated how burnout and self-efficacy profiles differ in relation to writing conceptions. First, moderate burned-out students, which comprised almost half the participants, had the higher levels of knowledge transforming than high burned-out students. There was no statistically significant difference in self-efficacy between moderate burned-out students and high burned-out students. Therefore, burnout, rather than self-efficacy, explained their differences in knowledge transforming. This is inconsistent with variable-centred findings that knowledge creation was not related to exhaustion and cynicism among postdoctoral researchers (Castelló et al., 2017). Since previous research on writing conceptions focuses on PhD and postdoctoral researchers, these inconsistent findings show the need for exploring bachelor’s and master’s students’ writing experiences.

Second, both moderate burned-out students and high burned-out students had the higher levels of blocks, procrastination and perfectionism and lower levels of productivity than low burned-out students with high self-efficacy. Academic self-efficacy has been found to be negatively related to academic procrastination (Hen and Goroshit, 2014; Niazov et al., 2022), which measured how students procrastinate when preparing homework, writing papers, preparing for an exam. Nevertheless, self-efficacy’ negative relationship with writing procrastination was not statistically significant in the present study. Instead, burnout contributes to understanding the distinct experiences of procrastination between these two profiles.

Since self-efficacy refers to beliefs about one’s capabilities in a specific domain (Bandura, 1997), the role of self-efficacy might change depending on the range of measurement. Our measure of self-efficacy concerned students’ overall learning and performance in their programme; thus, it can be regarded as a measure of academic self-efficacy (Özhan, 2021). Meanwhile, productivity can be regarded as self-efficacy in writing to some degree (Cerrato Lara, 2014; Lonka et al., 2014).
Therefore, procrastination and productivity seem to be in the closer domain than self-efficacy, and they were negatively related to each other. Similarly, writing procrastination has found to be negatively related to self-efficacy for thesis writing as well as productivity among non-international Master’s students (Mendoza et al., 2023).

Third, the findings showed no difference in innate ability between all three profiles. The international students in every profile tended to reject the belief that writing skills were determined at birth or impossible to be taught or developed. Because the international students in our study were more homogeneous in their conceptions of innate ability than were the PhD students investigated by Lonka et al. (2014) in the same context. Another possible reason was that self-efficacy was negatively related to innate ability. Furthermore, they reported a higher level of self-efficacy with a smaller variance than did the non-international students studied in the same university and academic year by Hailikari et al. (2021).

Limitations, direction of future research, and practical implications

The primary limitation of the study is the cross-sectional nature of the data. Therefore, longitudinal relations between burnout, self-efficacy, and writing conceptions remain unknown, as does the direction of their effects. Future research can use latent transition analysis (LTA) to explore the probabilities of transitions from one burnout profile to another over time, like what have been conducted among teachers (Xie et al., 2022), and corresponding changes of writing conceptions. The second limitation is that the sample size was smaller than 200, which is below the typically recommended number for BLRT and BIC to generate identification with ideal correct rate (Nylund et al., 2007). The third limitation is that students’ international status and the characteristics of the study phase were not accounted for. Linguistic and writing-related characteristics were insufficient to represent international status, although they were not significantly related to writing conceptions (Yin et al., 2023) or the burnout and self-efficacy profile membership. Moreover, for university students in the different educational context, their self-efficacy in the same specific domain differs from each other (Brown and Lally, 2018).

This study highlights the prominence of writing procrastination and a relatively low sense of productivity in international students’ writing experiences. The study also suggests that to reduce international students’ burnout, teachers can enhance their pedagogical and supervisory practices by considering students’ writing experiences. First, teachers need to increase international student awareness that writing challenges are common to many learners, and help them avoid attributing those challenges to inadequate prior training. Thus, students are less likely to doubt themselves or feel that they face such difficulties alone. They would be more apt to believe that they can manage through their own efforts and teachers’ guidance. Second, it is crucial for teachers to clarify the learning task, point out unavoidable difficulties, and provide task-related help in order to prevent international students from doubting their ability to achieve their writing goals. Third, constructive feedback has been found to contribute to enhancing understanding to improve their texts (Schillings et al., 2020) and reducing study-related exhaustion (Yin et al., 2022). Such feedback may help students understand the reasons for losing fluency, clarify the aim of the writing task, avoid overly high standards, and overcome the fear of postponing or failing a writing assignment.

Conclusion

This study reported international students’ burnout and self-efficacy profiles in the context of Finnish higher education and demonstrated the different kinds of writing conceptions exhibited by
each profile group. Most of the international students participating in the study scored relatively low on our measures of study-related burnout, and they displayed relatively high self-efficacy. Decreased burnout was related to a reduced level of writing procrastination and a strengthened sense of productivity. Meanwhile, self-efficacy was found to contribute both to achieving knowledge transforming and to a rejection of the belief that writing represents an innate ability. Students with a decreased risk of study-related burnout and increased self-efficacy tended to experience fewer blocks and less perfectionism in their writing. Overall, to support international students’ writing, different combinations of study-related burnout and self-efficacy should be taken into account.

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**Ethical statement**

*Ethical approval*

Ethical review and approval were not required for the study on human participants in accordance with the local legislation and institutional requirements. The voluntary participants provided their written informed consent to participate in this study.

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**Data Availability Statement**

The data that support the findings of this study are available from the corresponding author upon reasonable request.

**References**


Kok X-FK, Puah S, Pua CY, et al. (2023) Students’ approaches to learning (SAL) and their relations to burnout among university freshmen in Singapore. *Discover Psychology* 1–34. doi: 10.21203/rs.3.rs-3201938/v1


Rönkönen S, Mattsson MT, Virtanen V, et al. (2022) The nexus between study burnout profiles and social support—the differences between domestic (Finnish) and international master’s degree students. *Behavioral Sciences* 12(3): 1–18.


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