



## Article

# First-Year Experience in the COVID-19 Situation and the Association between Students' Approaches to Learning, Study-Related Burnout and Experiences of Online Studying

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**Abstract:** The aim of this study was to explore the association between students' approaches to learning and their experiences of study-related burnout in their first year of higher education. The objective was also to explore these association with a person-oriented approach by examining various learning profiles and their relation to experiences of study-related burnout and experiences of studying during the COVID 19-situation. The participants in this study were 384 first-year life sciences students who answered a questionnaire at the end of first year with Likert-type and open-ended questions. K-means clustering and ANOVA analyses were used to examine the profiles and differences in their perceptions of burnout. Students' experiences of studying were analysed qualitatively and differences between profiles were examined with Chi Square analysis. The results of this study show that an unreflective approach to learning is most strongly related to experiences of burnout and that experiences of online studying differed between profiles.

**Keywords:** burnout; approaches to learning; higher education; first-year experience; pandemic



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## 1. Introduction

Transition to online teaching during the pandemic in universities was forced and sudden during the pandemic COVID-19 in Spring 2020. The terms online teaching, remote teaching, online learning and distance education are used to describe teaching and learning involving interactions that are mediated through using digital technology (Greenhow et al. 2022; Maestres et al. 2022). This transition has caused difficulties for students and teachers in universities, resulting in many unfortunate outcomes. These include a negative effect on student engagement (Petillion and McNeil 2020) their well-being (e.g., Huckins et al. 2020; Kaparounaki et al. 2020; Wang and Zhao 2020; Zimmermann et al. 2020; Baticulon et al. 2021) and also their experiences of the teaching-learning environment (Parpala et al. 2021). During the pandemic, students were found to suffer from loneliness and have experienced a lack of interaction between other students and teachers in online studying (Baltà-Salvador et al. 2021; Trang et al. 2021). Prolonged stress and other problems in well-being may lead to study-related burnout which has negative effects on student well-being and the students' studying achievements (Madigan and Curran 2021; Räisänen et al. 2021). Study-related burnout or school burnout has been defined through three components: study-related-exhaustion (feeling burdened or exhausted because of the overtaxing studying), cynicism (lack of interest or experiences of indifference about studying) and lack of study-related efficacy (experience of incompetence in studying) (Salmela-Aro et al. 2009; Salmela-Aro and Kunttu 2010). All these aspects of study-related burnout have been found to be related to university students' study engagement (Maricuțoiu et al. 2017; Salmela-Aro and Upadaya 2017; Salmela-Aro 2017), their approaches to learning (Asikainen et al. 2020) and academic achievement (Madigan and Curran 2021).

Research concerning the relationship between student learning processes and study-related burnout is scarce, but recent research has shown that the way students go about

learning is related to their experiences of study-related burnout (Asikainen et al. 2020, 2022). One way to explore qualitatively different ways of going about learning and studying is the students' approaches to learning (SAL) tradition (Asikainen and Gijbels 2017; Entwistle 2009; Lonka et al. 2004). Traditionally approaches to learning are divided into deep and surface approaches to learning: a deep approach to learning emphasises aiming to understand and applying critical thinking and relating ideas in learning when studying, and an unreflective (or surface) approach to learning, which emphasises memorising, struggling with the fragmented knowledgebase and lack of reflection (Lindblom-Ylänne et al. 2019; Lonka et al. 2004). A third approach to learning, namely organised studying has also been distinguished. It emphasises time management, organised studying and effort in studying (Entwistle and McCune 2004) and it has been found to be important in study success and study progression at university (Hailikari and Parpala 2014; Hailikari et al. 2018; Rytönen et al. 2012). The need for good time management and effort management skills has also been emphasised in earlier research regarding student exhaustion, as it has been shown that students who have trouble managing their studying experience high levels of stress, exhaustion and lack of interest in studying (Heikkilä et al. 2012). As during online studying, students have been found to experience challenges in managing their learning with all the distractions they face at home (Baltà-Salvador et al. 2021). It could be assumed that time and effort management skills are particularly important in successful online studying. Furthermore, because students have been found to experience challenges in their well-being during online learning (Huckins et al. 2020; Kaparounaki et al. 2020; Wang and Zhao 2020; Baticulon et al. 2021) it would be important to study how students' approaches to learning are related to these experiences.

The perceived quality of teaching and support offered for students with their fellows and from teachers has been found to be important in successful implementation in online teaching and in students' positive experiences of online teaching (Aristovnik et al. 2020; Baltà-Salvador et al. 2021). It is noteworthy that students' approaches to learning are also closely related to the way students experience their teaching-learning environment. The deep approach and organised studying are positively related, and the unreflective approach is negatively related to perceptions of the teaching learning environment (Parpala et al. 2010; Richardson 2005). Studies have also shown that students who represent different learning profiles may have differing experiences of burnout as well as of the teaching-learning environment during the pandemic (Parpala et al. 2021). However, no qualitative studies which consider students' study profiles have been conducted about students' experiences of studying during the pandemic. The phenomenon of school burnout has been studied extensively but there is a gap in research concerning the relationship between student learning processes and burnout. According to the demand-resources model (Salmela-Aro and Upadhyaya 2017; Schaufeli and Bakker 2004) an imbalance between demands and resources can lead to burnout. In the present study, we expect that the way students study and learn will also have an effect on their perceptions of the demands of the environment during online learning. Earlier studies have shown that students who apply an unreflective approach to learning experience more negative emotions in studying, experience heavier workloads and have systematically more negative perceptions of the teaching-learning environment than students with a deep approach to learning (Kuittinen and Meriläinen 2011; Kyndt et al. 2011; Trigwell et al. 2012). In addition, we suggest that applying a deep approach to learning and organised studying can also act as a personal resource and through interest, lower the risk of burnout as a deep approach as well as organised studying are positively related to perceptions of the teaching-learning environment (Parpala et al. 2010), interest (Kyndt et al. 2011) and negatively related to burnout (Asikainen et al. 2020) and workload (Kyndt et al. 2011). Furthermore, person-oriented research on burnout is needed (Salmela-Aro and Read 2017) to capture how this relationship is manifested by different students. The aim of this study is to explore the relationship between first-year students' approaches to learning and their experiences of study-related burnout. The objective is also to explore these associations with a person-oriented approach by examining

various learning profiles and their relationship with experiences of study-related burnout and experiences of studying during the COVID-19 situation.

Based on previous evidence, we expect that students' approaches to learning are related to their experiences of burnout comprising a positive relationship between the unreflective approach to learning and components of burnout (Asikainen et al. 2020; Kuittinen and Meriläinen 2011; Kyndt et al. 2011; Trigwell et al. 2012). We also expect to find a range of learning profiles among the students (Parpala et al. 2010) and expect that different students experience online studying and burnout differently (Asikainen et al. 2022).

## 2. Materials and Methods

A total of 382 first-year Life Sciences students responded to the questionnaire and gave their permission for the research at the end of first year (April–May 2021). The total sample comprised students from Biological and Environmental Sciences (N = 98), Pharmacy (N = 108), Veterinary Sciences (N = 55) and Agriculture and Forestry (121). Of these students, 229 provided open-ended data about their experiences of online studying. All these students had studied all their first year online.

Approaches to learning were measured using a LEARN questionnaire comprising scales measuring a deep approach, an unreflective approach and organised studying (Parpala and Lindblom-Ylänne 2012). The questionnaire has a 5-point Likert scale (1 = Totally disagree, 5 = totally agree) and each these scales include 4 items. In addition, study-related burnout including three measures exhaustion (4 items), cynicism (3 items) and inadequacy (2 items) was measured with the 6-point Likert-scale (1 = totally agree, 6 = totally disagree) School burnout questionnaire (SBI) modified for the higher education context (Salmela-Aro et al. 2009; Salmela-Aro and Read 2017). In addition, as part of the questionnaire students answered an open-ended question about how they had experienced online studying during the pandemic as follows: How has your experience of online studying been? Has it affected your learning and studying?

The relationship between approaches to learning and study-related burnout was analysed with Pearson correlation coefficient. To explore the various student profiles based on approaches to learning, K-means clustering was conducted on the data and ANOVA and Tuckey's test were conducted to explore the differences in their perceptions of burnout. Qualitative data of students' responses to the open-ended question concerning their experiences were analysed by following the principles of inductive content analysis (Elo and Kyngäs 2008). All the variation in students' experiences of remote learning was classified into the categories consisting of similar kinds of experiences (Graneheim and Lundman 2004). In this process, 17 sub-categories were formed. Then these sub-categories were grouped into four larger categories which consisted of the similar sub-categories. The comparison between the categories and discussion between the authors happened throughout the analysis process. The categories were quantified, and the differences in students experiences of online studying between the different profiles were analysed with Chi square test.

## 3. Results

Reliability analysis of the scales showed that the scales measuring approaches to learning and study-related burnout had acceptable Cronbach's alpha values. Descriptives, Cronbach alphas and sample items can be seen in Table 1.

**Table 1.** Descriptives and sample items of the scales.

Sum Scale	M	Sd	$\alpha$	Sample Item
Deep approach	3.77	0.61	0.72	I try to relate new material to my previous knowledge
Unreflective approach	2.79	0.74	0.75	Much of what I learned seems no more than unrelated bits and pieces
Organised studying	3.31	0.81	0.75	I organise my study time carefully to make best use of it.
Exhaustion	3.26	1.13	0.81	I feel overwhelmed by the work related to my studying
Cynicism	2.48	1.31	0.74	I feel that I am losing interest in my studying
Inadequacy	3.76	1.40	0.89	I often have feelings of inadequacy in my studying

The correlation analyses showed that the unreflected approach correlated positively and the deep approach negatively with all the components of burnout (see Table 2). In addition, organised studying correlated negatively with inadequacy and cynicism but the correlation with exhaustion was not significant.

**Table 2.** Correlations between the variables.

Sum Scale	DA	UA	OS	EX	CY	IA
DA Deep approach	1					
UA Unreflective approach	−0.36 ***	1				
OS Organised studying	0.24 ***	−0.19 ***	1			
EX Exhaustion	−0.10 *	0.56 ***	−0.05	1		
CY Cynicism	−0.25 ***	0.43 ***	−0.50 ***	0.37 ***	1	
IA Inadequacy	−0.23 ***	0.62 ***	−0.34 ***	0.66 ***	0.61 ***	1

\*\*\* =  $p < 0.001$ , \* =  $p < 0.05$ .

### 3.1. Person Oriented Approach

Different learning profiles based on students' approaches to learning in the second measurement were conducted. We found three learning profiles: Students representing a deep approach (N = 134), Organised students (N = 135) and Students representing an unreflective approach (N = 113). The cluster centers can be seen in Table 3.

**Table 3.** Cluster centres.

Sum Scale	Students Representing a Deep Approach	Organised Students	Students Representing an Unreflective Approach
Deep approach	4.01	3.89	3.33
Unreflective approach	2.25	2.73	3.50
Organised studying	3.02	4.11	2.71

Differences in experiences of study-related burnout were found between the profiles. Tuckey's test showed that for the students applying an unreflective approach the scores on experiences of all the components of burnout and the overall burnout were higher than with organised students or students applying a deep approach. In addition, organised students experienced statistically significantly more exhaustion than students who apply a deep approach. No other differences were found (see Table 4).

**Table 4.** Experiences of study-related burnout between the profiles.

	<b>P1 Deep Students</b>	<b>P2 Organised Students</b>	<b>P3 Unreflective Students</b>	<b>F</b>	<b>p</b>	<b>Effect Size</b>
	<b>M (Sd)</b>	<b>M (Sd)</b>	<b>M (Sd)</b>			
Exhaustion	2.81 (1.02)	3.29 (1.22)	3.74 (0.94)	23.19	<0.001	0.37
Cynicism	2.25 (1.20)	2.04 (1.06)	3.30 (1.33)	38.01	<0.001	0.50
Inadequacy	3.32 (1.32)	3.37 (1.41)	4.75 (0.90)	50.54	<0.001	0.60
Burnout	2.74 (0.96)	2.89 (1.03)	3.82 (0.75)	47.12	<0.001	0.50

Tuckey's test: Burnout: 3 > 2,1 \*\*\*. Exhaustion: 1 < 3 \*\*\*, 1 < 2 < 3 \*\*. Cynicism: 1,2 < 3 \*\*\*.  
Inadequacy: 1,2 < 3 \*\*\*.

\*\* =  $p < 0.01$ , \*\*\* =  $p < 0.001$ .

### 3.2. Students' Experiences of Online Teaching and Learning

Students' experiences of online teaching and learning were divided into four main categories which were (1) Experiences of teaching, (2) Experiences of studying and learning, (3) Well-being, and (4) Interaction (Table 5). All these main categories included negative and positive comments. A total of 124 students had positive experiences and 196 students had negative experiences. Ninety-six students had both positive and negative experiences (see Table 5).

**Table 5.** Categories describing students' experiences of remote teaching and learning.

<b>Category</b>	<b>Negative Experience Sub-Categories</b>	<b>N/%</b>	<b>Positive Experience Subcategories</b>	<b>N/%</b>
Teaching	Technical problems Quality of teaching poor Teaching implement poor	21/9%	Positive experience of teaching Recorded lecturers	35/15%
Studying and learning	Problems in learning study-motivation decreased Problems in time-management and concentration in studying	128/56%	Improved learning and studying Flexibility of studying and scheduling Saving in time	107/47%
Well-being	Well-being decreased, Depression and anxiety	58/25%	Improved well-being, less stress	7/3%
Interaction	Lack of interaction and peer support Lack of social environment	106/46%	Support of peers important	4/2%

The first category, Experiences of teaching, included all the comments related to teaching, teaching arrangements, its quality and implementation. Negative experiences (n = 21) included student comments about technical problems in remote teaching or poor or varying quality of teaching or poor teaching arrangements, including problems in group works. Positive experiences (n = 35) included student comments about positive experiences of recorded lectures and option to study and learn several times if needed. Thus, it was hoped that recorded lectures would be continued into the future. On the other hand, some students (n = 6) felt that practical exercises should not be taught online.

The second category, Studying and learning, included all the comments related to students' experiences of online studying. A total of 128 students had negative experiences of studying comprising experiences of poorer learning in online studying (n = 64) and problems in concentration when studying online (n = 28). Negative experiences also



included student comments of decreased study-motivation ( $n = 44$ ) and challenges in time-management comprising lack of routines and procrastination ( $n = 36$ ). Some students ( $n = 12$ ) felt that their learning suffered because they had to be at home and were not able to go to library to study, for example. Students ( $n = 107$ ) had also positive comments related to studying and learning. Students felt that their learning and studying had progressed well and smoothly ( $n = 55$ ) and that they liked online studying. Students ( $n = 72$ ) also acknowledged the flexibility of studying online because it was possible to schedule and manage their time usage and they appreciated that they did not have to travel to campus, because then the time saved could be devoted to other activities. Eight students commented that online teaching had no effect on their learning, and 12 students commented that first they had liked online studying but afterwards it had become difficult for them.

The third category consisted of student comments related to their well-being. Many of the students ( $n = 58$ ) felt that their well-being had decreased during online learning and they felt the time had been hard for them, even leading to depressive feelings and anxiety. However, some students ( $n = 7$ ) commented that their well-being had improved. These students felt that because time was saved from traveling to campus, they had more time for themselves and for sleeping.

The fourth category consisted of student comments related to interaction. Almost half of the students ( $n = 106$ ) commented that they missed the interaction with other students and with teachers. The student community was also lacking. Four students commented that the interaction with their peers during online teaching had been good and had helped them in their studying.

Next, we explored if there were any differences between the learning profiles in students' experiences of online teaching and learning (see Table 6). The results showed that organised studying had more overall positive experiences as 67% of the students mentioned them, compared to just 40% of the unreflective students. In addition, organised students also had more positive experiences about studying (62%) compared to the other profiles (35–41%). In addition, students representing unreflective students had more negative overall experiences (91.7%) than organised students (79.7%) and more negative experiences of studying (70%) than students in other profiles (46–56%) namely students representing deep approach and organised students. No statistically significant differences were found on overall experiences of teaching.

**Table 6.** Overall positive and negative experiences of studying during the pandemic in different profiles.

	P1 (N = 90) Deep Students	P2 (N = 79) Organised Students	P3 (N = 60) Unreflective Students	$\chi^2$	$p$
Overall positive experience	47 (52.2%)	53 (67.1%)	24 (40.0%)	10.30	0.006
Overall negative experience	78 (86.7%)	63 (79.7%)	55 (91.7%)	4.07	0.131
Studying and learning—positive experiences	37 (41.1%)	49 (62.0%)	21 (35.0%)	11.88	0.003
Studying and learning—negative experiences	50 (55.6%)	36 (45.6%)	42 (70.0%)	8.26	0.016

To explore the differences in students' experiences between the learning profiles, these were explored in more detail based on 17 sub-categories. The results showed that there were statistically significant differences in experiences of categories *Decreased study motivation* and *flexibility in studying and scheduling*. organised students had fewer experiences of decreased study motivation and had more positive experiences of flexibility in studying and scheduling during online learning than the two other profiles (Table 7). No other statistically significant differences were found.

**Table 7.** Experiences of online teaching and learning in different learning profiles.

	P1 (N = 90) Deep Students	P2 (N = 79) Organised Students	P3 (N = 60) Unreflective Students	$\chi^2$	<i>p</i>
Decreased study motivation	22 (24.4%)	8 (10.1%)	14 (23.3%)	6.45	0.040
Flexibility in studying and scheduling	20 (22.2%)	37 (46.8%)	15 (25.0%)	8.66	0.013

#### 4. Discussion

The aim of this study was to explore the association between students' approaches to learning and their experiences of study-related burnout, and further, to explore these associations with a person-oriented approach by examining different learning profiles and their relation to experiences of study-related burnout and experiences of studying during the COVID-19 situation.

Our results showed that having an unreflective approach to learning was most strongly associated with experiences of burnout. In addition, a negative correlation with the components of burnout and deep approach was found (Table 2). In addition, students applying an unreflective approach experienced all the components of burnout more strongly than deep and organised students (Table 4). These results are in line with our expectations that students with an unreflective approach to learning experience more negative emotions in studying, experience heavier workloads and have systematically more negative perceptions of the teaching-learning environment and thus can experience the demands of the environment more strongly than students with a deep approach to learning (Kuittinen and Meriläinen 2011; Kyndt et al. 2011; Trigwell et al. 2012). In addition, a negative relationship between organised studying and cynicism and inadequacy was found but interestingly, no statistically significant relation was found with exhaustion. Although time management has been seen as a strategy for reducing burnout (e.g., Bruce 2009), similar results have been found in earlier studies where no correlation between burnout and time management was found (Kordzanganeh et al. 2021).

We assumed that students in different learning profiles experience studying during the pandemic differently. The open-ended answers of students' experiences of online teaching and studying (Table 5) reinforce this finding, as students with an unreflective approach also had more negative overall experiences of teaching and studying and fewer positive experiences than the organised students and students with a deep approach (Table 6). Earlier studies have also shown that an unreflective approach is negatively related to experiences of the teaching learning environment (Parpala et al. 2010; Richardson 2005). Thus, based on the results of this study, having a fragmented knowledge base and finding it to be difficult to reflect can lead to feelings of exhaustion, inadequacy and cynicism more often during the pandemic and also result in more negative experiences of studying during the pandemic.

On the other hand, our results emphasised the role of organised studying in experiencing the learning environment positively, as in this study, students with an organised approach most often had overall positive experiences of teaching and studying and the least negative experiences of teaching and studying than students in the other profiles. This is in line with earlier findings showing that organised studying is positively related to perceptions of the teaching-learning environment (Parpala et al. 2010). Previous studies have also shown that in online teaching and learning, students easily experience problems in their scheduling and in academic achievement (Bdair 2021; Baticulon et al. 2021; Petillion and McNeil 2020). This has most likely been the case during the pandemic, that students have been more responsible for their own studying as they stayed at home. The results of the qualitative data showed that some of the students experienced problems in taking responsibility for their time usage and had problems with procrastination. Furthermore, organised students reported the least decline in study motivation and valued most often the flexibility of studying than students within the other profiles, and that way they seemed to take the flexibility, along with being able to schedule their studying, as an option

and resource in their studying and learning. It has been shown that organised studying comprising good time management skills is related to better progression and achievement (Asikainen et al. 2014) and that good time management skills can also hinder motivation and concentration problems (Rytkönen et al. 2012), so the results of this study are in line with those earlier studies.

The results of this study also showed that most often students brought up experiences related to their studying and learning as well as lack of interaction in their comments. Less was commented on about teaching arrangements. First-year and second-year students have been found to be less capable of using online learning (Baticulon et al. 2021), so our results are in line with this, as our study was conducted among first-year students. Furthermore, the lack of interaction with other students and teachers had also been found in earlier studies regarding online teaching and learning (Kedra and Kaltsidis 2020; Baltà-Salvador et al. 2021; Trang et al. 2021). Thus, supporting students' online studying and organised studying with skills to schedule their studying and learning, as well as supporting students' interaction with their peers should be considered when implementing online teaching.

There are some limitations of our study. First, the measurements were made with self-report data. Students' experiences of their well-being were thus their own experiences. In addition, we had a relatively small sample in our study. Not all the students responded to the questionnaire and of these students, not all gave an open-ended response concerning their experience with studying. However, we should acknowledge that the students who did answer could have somehow differed from the students who did not answer. This should be studied further. Furthermore, the study focused on first-year students in the Life sciences. Research has shown that students in different disciplines can differ in their approaches to learning and their experiences of teaching and learning (Parpala et al. 2010). Thus, future research should also explore students' experiences in a range of disciplines and also when they are further into their study program. Furthermore, students' experiences are just one aspect of exploring studying during the pandemic. Experiences of the teachers and the way teaching was arranged was not included in the analysis. Future research should also explore the experiences of teachers during the pandemic.

## 5. Conclusions

As unreflective approach was most strongly related to burnout and negative experiences of studying, teaching should support teaching methods which support active learning which will support reflection and can hinder the unreflective approach. In addition, time management skills should also be considered when studying at university. Not all the students entering the university have good time management skills and, thus, these skills should also be practiced during studies. For example, courses which support both well-being and study skills can support student well-being as well as time management and study skills in a range of ways (Asikainen and Katajavuori 2021; Katajavuori et al. 2021). In addition, as many students experienced a lack of interaction in their studying, we conclude that in online teaching, students' and teachers' interaction should be supported more. Online teaching should also support discussion and collaboration between students and teachers.

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