Self-Determination Theory and Basic Needs: A Comprehensive Understanding of

Academic Well-Being

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Abstract

In this research, an attempt was made to form a definition of academic well-being and to increase understanding of Self-Determination Theory's relationship with academic well-being. Additionally, the role of Maslow's basic need fulfillment in academic well-being was explored. To achieve the goal of increasing the body of knowledge surrounding the subject, 12 semi-structured interviews were conducted and reviewed in a qualitative manner, making use of ATLAS to code individual responses. Thereafter, key themes were identified. The participants were all studying at the University of Groningen but had a diverse background, having different nationalities and studying a variety of subjects. Well-being was defined as a holistic concept of balance, where both physical and mental well-being play major roles. Self-Determination theory (Ryan & Deci, 2000) proved to be related to well-being in a similar way as the original theory, with the additional findings that relatedness both improves competence and reduces stress. Basic need fulfillment was necessary for students not to feel stressed, with stress in turn causing a lower level of experienced well-being.

Keywords: Well-Being, Self-Determination Theory, Maslow Basic Needs, Academic Students, Qualitative Method

Self-Determination Theory and Basic Needs: A Comprehensive Understanding of

Academic Well-Being

In recent years, students' mental health within academia has been a topic of discussion. The majority of students experience at least some impairment from mental health issues (RIVM & Trimbos instituut, 2023). The COVID-19 pandemic of 2020 and years after has brought increased attention to the mental health of students, as social isolation has had a detrimental effect. Although closely related to mental health, well-being is understood to be more than the absence of mental health problems and additionally concerns the presence of positive moods. Focusing on academic well-being, rather than mental health, aids in improving the quality of life for every student instead of a smaller group of students suffering from mental health problems. For this reason, academic well-being as a concept fits well within the current movement of positive psychology, as defined by Seligman and Csikszentmihalyi (2000). This is because the focus is not only on preventing the negative, but also on enhancing the experience of the "normal" student.

Firstly, an adequate assessment of the current state of research surrounding academic well-being must be established. Considering interventions, Dooris and Doherty (2010) found that all aspects of the academic environment can have an effect on the students' experience of academic well-being, suggesting that intervening in just one part of the academic setting might not be effective. Research by Dooris et al. (2019) supports the statement that interventions should be multiple and additionally stresses the importance of understanding academic well-being in creating effective interventions. Baik et al. (2019), similar to Dooris et al. (2019), took an intervention-based approach and found that students see many parts of the academic setting as susceptible to change. Students mainly name academic teachers' practices and student services, but many other components of the academic experience were mentioned. Current research suggests that academic well-being depends on an expansive number of

factors, but Dooris et al. (2019), Baik et al. (2019), and Dooris and Doherty (2010), offer little insight into the definition of well-being.

The general definition of mental health as provided by the WHO is as follows: "a state of mental well-being that enables people to cope with the stresses of life, realize their abilities, learn well and work well, and contribute to their community." (WHO, 2022, p. 6). While this definition of mental health does offer some insight into well-being, it is too broad to be useful. In addition, this definition does not pay attention to elements that might be uniquely required in defining academic well-being. However, it is unlikely that WHO is interested in establishing a clear definition of academic well-being. Looking beyond the WHO definition, an apparent gap in the literature is found. Studies like Bohn and Hogue (2020) and Morgan et al. (2019) entirely omit defining academic well-being, even though this is the main subject of these studies. Other studies, like the ones by Paul et al. (2024) and Prakash and Radhakrishnan (2023), use the definition of mental health as the definition of well-being. As stated before, crucial differences exist between well-being and mental health, and using these terms interchangeably ignores the positive psychology component of well-being entirely. Thus, to facilitate research on academic well-being, a common, comprehensive definition of academic well-being needs to be identified, since understanding is crucial in creating effective interventions (Dooris et al., 2019).

This study strives to create this comprehensive definition by using a qualitative method. Making use of the explorative and data-led qualities of qualitative research methods, we attempt to find a definition based on the answers of students. The explorative nature enables us to generate new hypotheses to either falsify or support our findings. While the data-led nature assists us in creating a definition that is to some degree free from theory. Taking a social constructivist approach, the conceptualisations of students regarding academic well-being are of importance. Clouding these conceptualisations with theory-loaded questions

diminishes the ability to adequately assess students' beliefs, as the risk of social desirability biases increases. To aid in founding an effective definition, however, some guiding theories are needed, since without a theoretical framework, effective research is impossible.

Self-Determination theory, or abbreviated SDT (Ryan & Deci, 2000), is a theory of intrinsic motivation that is often used to explain general well-being and well-being in academia (*see:* Kristensen & Jeno, 2024; Breva & Galindo, 2020). Ryan and Deci (2000) theorize that well-being is achieved through high levels of intrinsic motivation. Quoted from Ryan and Deci (2000 p. 70): The construct of intrinsic motivation describes this natural inclination toward assimilation, mastery, spontaneous interest, and exploration that is so essential to cognitive and social development and that represents a principal source of enjoyment and vitality throughout life." Furthermore, the theory suggests that intrinsic motivation arises when an individual meets three psychological needs: the need for competence, the need for autonomy and the need for relatedness (Ryan & Deci, 2000). Firstly, the need for competence is fulfilled when one experiences "optimal challenges, effectance-promoting feedback, and freedom from demeaning evaluations" (Ryan & Deci, 2000 p. 70). Continuing with the need for autonomy, it is essential for one to experience a sense of agency to become intrinsically motivated. Autonomy can be best seen as a sense of feeling in control of one's own actions, rather than being controlled by external factors. Thirdly, the need for relatedness concerns the need to feel a sense of belonging to one's surroundings. In line with this, Ryan and Grolnick (1986), found that, when teachers are perceived as cold, students experience less intrinsic motivation.

Moreover, Self-Determination Theory (Ryan & Deci, 2000) describes that extrinsic motivation is a diverse concept, with four different types of self-regulation that can be present in an individual who is extrinsically motivated (Ryan & Deci, 2000). Although external motivation is of less interest to this research, as the highest levels of well-being are associated

with being intrinsically motivated, a brief description of the four types of external regulation shall follow, as a clear understanding of SDT is necessary to successfully apply the theory in this research. Self-Determination Theory presents types of regulation as a spectrum, with on one end a-motivation and thus a lack of any regulation, and on the other hand intrinsic regulation. External regulation is closest to a-motivation, and concerns regulation purely based on external rewards and punishments (Ryan & Deci, 2000). Moving in the direction of intrinsic regulation, the next type is introjected motivation, which concerns regulation based on internal punishments and rewards. Identified regulation concerns motivation because of personal importance, a person is motivated because they value the action itself. Closest to intrinsic regulation is integrated regulation, which concerns motivation based on synthesis with one's identity, one is motivated because performing the action is the essence of being oneself.

Furthermore this study seeks to discover the role of basic needs in academic well-being. The choice for using basic needs in defining academic well-being is supported by the research of Rahal et al. (2022), which found a correlation between lower socio-economic status and lower levels of well-being prior to exams. Although social-economic status and basic needs are not one and the same, this research does spark interest in the role of basic needs in academic well-being.

To conceptualize basic needs, Maslow's theory of basic needs has been chosen as a guiding model. Since Maslow's original theory was created in 1943, a revised version of the theory is more fit for modern research, which Kenrick et al. provided in their 2010 paper. Maslow's theory takes upon the structure of a pyramid, with needs in the lower layers needing to be fulfilled, before needs in a higher level can be achieved. The bottom layer of the pyramid, also known as the physiological needs, concern the absence of hunger and thirst, but also the need for shelter and the absence of excessive cold or hot temperatures (Kenrick et al.,

2010). Continuing, the second layer, the need for safety, concerns the need for stable employment and resources, which in the case of students, might often concern money. Love and belonging is the third layer, and it entails the need for relationships, friendship and general kinship (Kenrick et al., 2010). Layer four and five, concerning esteem and self-actualisation respectively, are best described as higher psychological needs for recognition, freedom and becoming the best version of oneself (Kenrick et al., 2010). This research seeks to shed light on the additional role of basic needs in academic well-being, on top of the role that Self-Determination theory plays in defining academic well-being.

Summarizing the goal of this research, this paper firstly strives to answer the following three questions: "How do students conceptualize academic well-being?", "How do the Self-Determination factors relate to academic well-being in students?" and "How can Maslow's theory of needs add to SDT in explaining academic well-being?" Finally, the goal is to institute a comprehensive definition of well-being, in which factors of the two chosen models can be integrated into a model which highlights important factors in academic well-being.

Method

Participants

A sample of twelve university students participated in this study. Following Guest et al.'s (2006) research on data saturation, the amount of twelve interviews in qualitative research is sufficient to create an extensive codebook and draw meaningful conclusions. Participants were recruited through a convenience sample. Every researcher recruited two participants from their personal circles within academia, after which all the participants were randomly assigned to the researchers. We excluded the possibility for the researchers to interview their own recruited participants, in an attempt to minimize biases. Our sample consisted of four first-year, one second-year, six third-year, and one fourth-year student, with

equal representation of male and female participants. All participants were aged between 18 and 24. Among the twelve participants, four were first-generation students, and five were Honours College students. All participants, except one from Minerva Art Academy, studied at the University of Groningen in the Netherlands, including the Faculty of Behavioural and Social Sciences (n = 4), the Faculty of Science and Engineering (n = 4), the Faculty of Arts (n = 1), University College Groningen (n = 1), and the Faculty of Economics and Business (n = 1). The sample comprised individuals of different nationalities, including four from the Netherlands, two from Germany, one from Bulgaria, one from Romania, one from Slovenia, one from Slovakia, one Jordan-Palestinian participant, and one French-Mauritian participant. Participation was voluntary, and participants did not receive any compensation. The interviews were conducted in April 2024 as part of the bachelor thesis course.

Table 1

Demographic Information of Participants

Demographic Characteristics	Distribution	
	n	%
Gender		
Male	6	50
Female	6	50
Prefer not to say	0	0
Nationality		
Dutch	4	33
Other	8	67
Year of Studies		
First	4	33
Second	1	8
Third	6	50

Fourth	1	8
Honours college		
Participating	5	42
Not Participating	7	58
First-Generation Students		
First-Generation	4	33
Continuous-Generation	8	67

Procedure

Participants and interviewers participated in individual, semi-structured interviews, to collect qualitative data on our research question. An original script was created to aid in the interview, inspired by similar studies (e.g., Hoeve et al., 2018). The interview script contained questions about the conceptualisation and experience of well-being, specific factors of the SDT as described by Ryan and Deci (2000), as well as other possibly related factors and ideas about well-being interventions within the university setting. Within the conceptualisation of well-being, we attempted to find information regarding how individuals understood well-being, both in general and within academia. For the specific factors of the SDT (autonomy, relatedness and competence), we investigated how participants experience these factors and how this relates to their perceptions of well-being. Furthermore, we explored other related factors such as resilience, stress, value attainment, and achievement, as well as their effects on our participant's experiences of well-being. Lastly, we asked our participants for ideas about potential changes and interventions within the university. Additionally, Honors College, first-generation and third-year students were asked specifically tailored questions to inspect the experiences within these distinct groups more closely.

Our research received approval from the Ethics Committee of the Faculty of Behavioural and Social Sciences (PSY-2324-S-0302), and all participants agreed to participate

after receiving detailed information about the study. In addition, informed consent, and demographics forms were provided to and filled out by the participants before conducting the interviews (see Appendix A & B).

The length of the interviews varied between 27 minutes and 90 minutes. Each interview was recorded, transcribed, and subsequently anonymized to protect the identity of the participants. For the anonymisation process, code names have been randomly generated and assigned to the transcripts. After the transcription process, all audio recordings were deleted.

Data Analysis

Our analysis integrated both deductive and inductive approaches, as our aim was twofold: to assess the reflection of our theoretical framework, particularly SDT, and explore other factors such as basic needs and resilience in our participants' responses, while also advancing these theoretical understandings. Aligned with our study's objective to partially replicate Kiltz et al.'s (2020) research, we employed predefined codes deductively. These codes were derived from the codebook of Kunnen and Krom's (2017) study, and grounded in the theoretical foundations outlined above. Moreover, we implemented Braun and Clarke's (2006) inductive thematic analysis approach, which prioritizes uncovering underlying patterns of meaning over emphasizing frequency measures. This approach enabled our analysis to remain receptive to responses and patterns not anticipated by our study's theoretical framework, potentially enriching our understanding and providing deeper insights into our participants' experiences. The coding process was conducted using Atlas.ti, a qualitative data analysis software.

Coding process

To ensure the analysis maintains consistent coding and internal validity, we followed the intercoder reliability approach outlined by O'Conner and Joffe (2020). This involved a

systematic cycle of code generation, code application to the data, and evaluation of coding until saturation was achieved (Williams & Moser, 2019). We alternated between individual and group work throughout these steps to enhance reliability.

Following the coding scheme developed by Kunnen and Krom (2017), we initiated the coding process by systematically applying existing codes deductively to six transcripts, assigning one to each researcher. Simultaneously, we engaged in inductive coding to identify and create new codes for aspects not covered by our existing framework. After finalizing the initial coding phase, the research team jointly coded two interviews. This collaborative effort aimed to review and consolidate the existing codes into coherent categories and themes, laying the groundwork for a preliminary codebook to direct subsequent coding. During this phase, we also integrated theoretical concepts guiding our research, in this self-determination theory (Deci & Ryan, 2000) and Maslow's theory of basic needs. Using the preliminary codebook as a reference, all interviews underwent a second round of coding. To ensure reliability, two group members independently analyzed the same four interviews each, ensuring that every interview was coded according to the preliminary codebook. Subsequently, the group convened to discuss the codebook again, further refining and elaborating on the emerging themes. This iterative approach continued until saturation was achieved for all significant aspects of participants' responses. This process was repeated 2 times, adhering to the concept of a non-linear coding process (Williams & Moser, 2019) until the group reached a consensus on a finalized codebook. The finalized codebook (see appendix C) was subsequently employed to code each interview independently by two researchers, thereby reinforcing inter-coder reliability.

Results

Using the final codebook reported in Appendix (C), the group found 746 quotable responses related to the research questions. Within these quotable responses, many themes

and subthemes could be discovered. However, not every found theme is relevant to this paper and thus the following selection of six themes were made (basic needs, well-being, autonomy, relatedness, competence and stress), based on the relevancy and frequency of the responses related to the research questions. Omitted themes therefore contained too little relevancy to be reviewed in depth in this study and related more to the research questions of the other researchers. The following will contain a listing of the aforementioned themes, attached with the relevant results of our study.

Well-being

The theme of well-being has been divided into two categories: one of conceptualization of well-being and one of experience of well-being. Starting with the former, general well-being, when asked for a definition, was often defined as being a holistic concept where aspects of physical and mental well-being are intertwined. For example, student Mai defined well-being in the following way: *"I would say well-being means to me that I feel physically and emotionally healthy, and I can do things that I want to do and that I'm not limited by it, and that I feel like I belong somewhere, and I have a good social circle."*

Mental and physical well-being were often named as the two key aspects of this holistic concept of well-being. Participant Julia defined well-being as: *"... an interplay between emotional and physical well-being."* Participant Lisa said this: *"Well being, I would define as a balance between physiological and kind of mental states that I feel content about who I am kind of feel like having an autonomous kind of authentic life and like that I am happy with my life and live for myself"*.

When asked about academic well-being, students often named general balance, or work-life balance to be very important. Students want to participate in social activities, sports or hobbies besides their academic lives and they see this as very important to both their general-, as well as their academic well-being. To illustrate a quote from participant Bart:

"also definitely having enough free time as well next to your studies. To not fully be drowned in your studies no matter if you enjoy the subject or not."

The second category, the experience of well-being, concerns the level of positive or negative well-being students experience within academia. This can be in relation to a certain factor, or the general experience of academic well-being. Since establishing a definition of academic well-being is one of the main goals of this research, conceptualisations of well-being were rated as more important than experiences of it, and an in-depth explanation of this category and its most common answers will be omitted here. However, examples of positive and negative well-being might be used to explain more in-depth how certain factors influence well-being.

Self-Determination Theory

Autonomy

Students in this study experienced positive feelings of autonomy more often than negative feelings of autonomy, as seen by the number of quotations for the code positive autonomy and the code negative autonomy. The group found 40 quotations concerning positive feelings of autonomy and 21 quotations concerning negative feelings of autonomy. Positive feelings of autonomy in students consisted mostly of feeling a sense of agency in what one studies or a feeling of being in control, being able to handle the pressures of academic life in an effective way.

The relationship between autonomy and well-being is multiple and diverse, but a general trend can be seen that positive feelings of autonomy are closely related to positive feelings of well-being. For some students it improves motivation for example, as seen in this quote by participant David: *"I have the autonomy to fill in quite a lot of things for myself. There's quite a lot of freedom there for me. And it makes it very enjoyable. So yeah, it makes it very enjoyable. It makes it very motivating to do."*

Others, like participant Sophie, describe that when she feels like academics become overwhelming, her autonomy and well-being suffer: *"last year, in the second year, I always felt like I was not on top of my material. I, so as a result, I was never in control. And as a result, my wellbeing just nosedived."* Participant Lisa explained: *"if I feel like I'm not in control, like everything is overwhelming, I feel like I'm failing academic life."*

These two quotes on the relationship between well-being and autonomy seem to be the main trends and mostly every student gave answers that would fit in either one or the other category.

Relatedness

As seen in the autonomy theme, more positive experiences of relatedness were seen in students, rather than negative experiences. There were 41 quotations found concerning positive relatedness and 24 quotations were found for negative experiences of relatedness. Positive relatedness was seen by students as having good friends, good relationships with peers and teachers, participating in activities like sports with other people and a general feeling of belonging.

Many students reported to experience support from those whom they feel related to. This can be both emotional support, as well as academic support. Participant Sophie said this: *"The most important part for me was finding a group of people and then helping each other out."* Participant Robert was quoted saying something similar: *"And yeah, basically friends, because if you have friends, you will be happy, you will have someone to talk to and to talk if something goes bad with you or something like that."* A higher level of this support also leads to a higher feeling of competence, as seen in this quote by participant Sophie: *"I have a friend and we, every single time before the exam (..) we always have like a list of questions and then we bounce it off each other. I think that this type of studying is very beneficial because he asks questions that I haven't thought about. (...) Although I study individually, I do believe that*

together we can achieve a lot more."

It seems that the feeling of relatedness helps with reducing stress in some way. Talking with friends, family, or other students was commonly named as a way to deal with stress. Participant Robert described his way to deal with stress: *"me personally, I like to go back to my home, hometown, get out with my friends, stay with my family, because these things will relieve my stress and make me feel well."* Participant Manaia had this to say: *"now it's more communicating with people, because, like I said, people here are a lot more open-minded and more willing to talk about issues and problems. So just talking to people I trust."*

In short, positive relatedness seems to have both an inhibiting effect on stress and an exhibiting effect on competence, because of the support one can feel, when one feels related or a sense of belonging.

Competence

Once more, more quotations of positive feelings of competence were found in the interviews rather than negative feelings of competence. The difference is slightly smaller than the one seen in Autonomy and Relatedness, with 35 positive quotations and 22 negative quotations found. Positive competence was seen by students as the ability to pass or excel in courses, or to manage the requirements of one's studies, that being deadlines, or stressful exams.

The relationship between competence and well-being seems to be very similar across participants. Many students describe feeling well when feeling competent, or that the feeling of competence offers some comfort, since students know that in the end they will be able to pass their courses, despite this task being challenging. Participant Mai had this to say: *"I think it's a nice feeling to know that I have certain skills or I feel like I'm competent, and I think that's also important for me to know that what I'm doing pays off or that I feel like I'm learning things, that my skills are getting better."* Participant David was quoted as saying this:

"The fact is, that if I see myself as able to do the things that I have to do. It contributes to my well being. It definitely makes me feel good.

In short, competence offers comfort and stimulates academic well-being. Students want to feel like they have the ability to pass their courses, or finish deadlines on time for example.

Maslow's Basic Needs

Concerning the first layer of Maslow's pyramid, physiological needs, students named their needs for food, sleep, and most importantly housing. Only two quotations were found for food. This low number of quotations could be explained by the fact that food might be accessible to students, but the money or the time to cook healthy food might be lacking. About sleep, participant Sophie said this: *"So for me, sleep is important. Although I don't get enough of it most of the time, because we have a lot of 9AM's (classes). And then if you're not well rested and you show up, yeah. Obviously you're not gonna recollect anything. And then you become stressed and then you can't sleep at night, it's like a cycle."* This quote, among others, shows the importance of sleep to students, and it also shows the relationship between needs and stress.

Housing was the most relevant physiological (Maslow) need in our sample. Participant Mai had this to say about her housing situation: *"I just felt stressed (...) or I felt overwhelmed, I needed to find housing and I couldn't find housing."* Participant Lisa also experienced stress because of housing: *"I think for housing. I think it's like... because now I'm moving to Amsterdam for my masters. I haven't started looking for housing. So that's my biggest worry right now. So if that was kind of secured or there were enough student rooms, I would feel more chill, or like more confident. I wouldn't stress about it with my university life or my future in university."* Again, the relationship between needs and stress becomes apparent. Not having adequate housing leads to stress for many students. Important to note here, is that this

stress could be different for international students. Dutch students in this study are likely to have a more stable base in the country, since their parents already live in the country, providing them with housing.

Furthermore, the second layer, safety needs, was mainly expressed in needs for resources, in this case money. Once more, students describe a connection between one's financial situation and stress. Students who did not experience stress regarding money, often said that money was very important for them, that having enough money gives them peace of mind. To illustrate, a quote from participant Mai: *"And if I were in a life situation where I would have more money or more financial support from parents or whatever, I think that would take a lot of stress away from me because, during those months when I'm not receiving money, I'm always like, okay, where do I get money? So yeah, I think that does really trigger a lot of stress for me."* The third layer, love and belonging, was found to be very closely related to the factor relatedness of STD and conclusions were similar. Students felt helped during stressful times when feeling connected and felt generally more capable of performing in their studies.

Continuing with the fourth layer, esteem, was mainly expressed in having the freedom to participate in hobbies or fun activities. General leisure time proved to be an important way to destress according to students. Participant Manaia had this to say: *"I also do quite a bit of sports which I think helps a lot to move away from the academic side of everything and the stress and all. It's also very fun, and I also do some art at home."*

Layer five, self-actualization, was not found to be a theme among students, possibly because of the theorized similarity between Maslow's self-actualization and SDT. Resulting in instances that could be coded as self-actualization, being coded as related to SDT.

Stress

Stress goes hand in hand with lower academic well-being. This statement was very heavily expressed within students. There were 56 quotations concerning the relationship between stress and well-being found. Oftentimes students reported to feel overwhelmed by the stressors of their courses or degree. Participant Sophie said this for example: *"The deadline was there, so then I started becoming stressed, and then I still didn't want to work on it. (...) Um, and because of that, uh, my general happiness, I guess, has decreased."*

Furthermore, students indicated their use of coping mechanisms to reduce their experience of stress. Strategies such as avoiding stress, taking breaks, reframing thoughts, spending time outdoors, and seeking solitude were identified as effective coping mechanisms. In a discussion of academic well-being, it can be of use to take coping mechanisms into account, as these strategies mitigate stress according to students and lower levels of stress appear to have a positive effect on academic well-being.
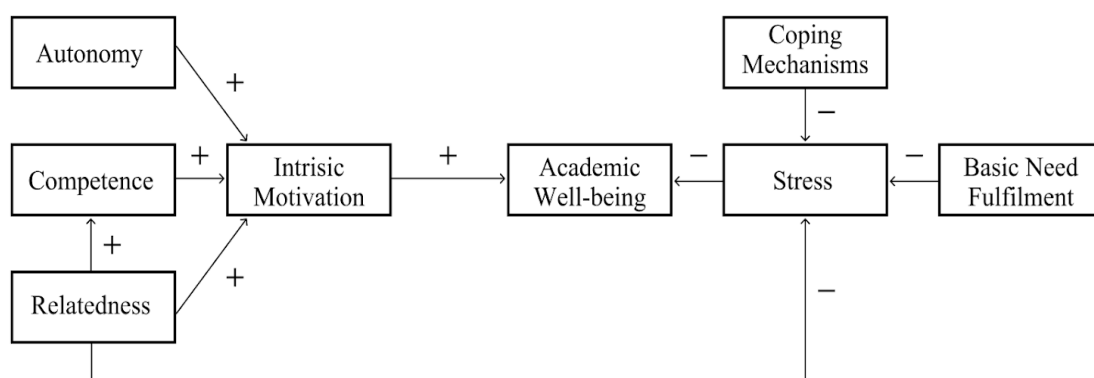

Figure 1: Visual representation of results, (+ = positive relationship found, - = negative relationship found)

Table 2

Self-Determination Components Quotes Frequency

Component	*n*	*Positive*	*Negative*

Autonomy	61	40	21
Relatedness	65	41	24
Competence	57	35	22
Total	183	116	67

Discussion

In the introduction, three main questions were asked to guide this research: "How do students conceptualize academic well-being?", "How do the Self-Determination factors relate to academic well-being in students?" and "How can Maslow's theory of needs add to SDT in explaining academic well-being?". These questions shall be discussed, concluded and compared with already existing literature. Moreover, some points of concern with this research are pointed out and recommendations for future research are made.

Students conceptualize their well-being as a holistic concept, where balance is very important. The main two factors students named to be important, is their mental well-being and physical well-being. According to students, these two factors need to be at a certain level, before one can consider themselves well. As spoken about before, a proper definition of well-being, let alone one of academic well-being, is not present in current literature. However, the WHO definition of mental health (WHO, 2022), briefly mentioned in the introduction, is holistic in nature, recognizing that a state of positive mental health entails multiple factors (coping with stress, realizing one's abilities, learning well and contributing to their community). Although mental health and well-being are not the same, the concepts are closely related and we can assume that a holistic definition of well-being is therefore accurate.

In regard to the factors of SDT, the original relationship described by Ryan and Deci (2000), was found to be accurate for academic well-being. With Autonomy, Competence and Relatedness all leading to intrinsic motivation, that in turn leads to academic well-being.

Although students did not always explicitly name intrinsic motivation as being related to well-being, however, competence, relatedness and autonomy were all recognised to have importance in students well-being. Therefore we can assume that the original Self-Determination Theory largely hold up, with intrinsic motivation being related to academic well-being

Additional to the original model, answers were given that suggested two extra roles of relatedness in regards to academic well-being. The first being its relationship to competence. Often, students said that working together or feeling supported by peers helped them to feel more competent as well. Since this relationship is not described by Ryan and Deci (2000), more research is needed to confirm or reject this statement. Secondly, relatedness seemed to reduce stress in students, as they often found solace in speaking with peers, friends or family about their stressors. This claim is already supported by literature (MacNear & Hunter, 2023; Blankenau et al., 2022; Snidman et al., 2022). Furthermore, evidence exists that relatedness or sense of belonging offers something unique to stress reduction, that cannot be described as a coping strategy (Planert et al., 2023). Justifying the distinction made in the visualization of the results (see above).

Fulfillment of Maslow's basic needs acts mostly as a possible inhibiting factor of stress, in turn allowing for a higher academic well-being. Students consistently described that basic needs need to be fulfilled, before they can feel well. The finding that the fulfillment of the basic needs inhibits stress, is supported by literature (Crandall et al., 2020; Rahal et al., 2022). Providing housing to students, ensuring affordable food and enough sleep, might be areas of interest for universities when enhancing academic well-being.

Although conclusions in this research have been based largely on both pre-existing literature, combined with shared opinions of students, some specific strengths and weaknesses of the study design deserve additional attention. First of all, although attempts were made to

keep questions theory-neutral, pure theory-neutral questions are impossible. It is possible that participants attempted to give conforming answers or that they were subject to an availability heuristic. Improvements to the interview script could possibly be made to reduce the chance of these biases. Second of all, the interviews were conducted by six different interviewers, and although steps were taken to limit individual differences in the interviews, the scripts have proven that each interviewer might handle unexpected situations in the interview differently. Also, the settings of the interview were chosen by individual interviewers, creating possible differences in attention for both the participant and interviewer. Lastly, individual differences in coding might have led to slightly different outcomes of quotations and codes used. Although these differences are assumed to be very slight, rigorous precautions have been taken to limit this as much as possible.

As well as weaknesses, our study design offers some unique strengths. First of all, the level of diversity in our sample can only have contributed to finding transferable factors. Finding similar factors in students with different backgrounds and faculties, ensures that factors found are not specific to just one faculty or nationality, but rather are present in all types of student. Naturally, the qualitative method does not allow for generalization of results to a general population, since the necessary statistical basis for generalization is not present. However, transferable factors do offer some insight into which factors are present in all studied students. These commonalities might create new hypotheses for future (quantitative) research.

Conclusion

To summarize, this research found that students conceptualize their academic well-being as having a positive balance between studies and the rest of their lives. Students recognise the holistic nature of the concept, stating the importance of all types of well-being (e.g. physical and emotional). Self-Determination Theory (Ryan & Deci, 2000) was found to

be related to academic well-being in a similar manner as it is in general well-being. Relatedness, competence and autonomy are related to intrinsic motivation, which leads to (academic) well-being. Stress was found to inhibit academic well-being, and was itself inhibited by the fulfillment of basic needs, relatedness and additionally other coping mechanisms. Furthermore, a relationship between relatedness and competence has been found. This latter finding especially needs to be studied further, seeing the lack of supporting literature. Other findings of this research should be replicated in further qualitative studies with different samples or quantitative studies focussed on statistical confirmation or rejection of results and thus making generalization of results possible.

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Appendix A

Informed Consent for Interview Study within the Project: Understanding Well-being in Academia through Self-Determination Theory (SDT)

April 2024

I, _____, hereby consent to be a participant in the current research conducted by [Researcher's Name], a student at the University of Groningen. Contact: [Researcher's Contact Information]

I have agreed to participate in the study titled "Enhancing Well-being in Academia through Self-Determination Theory (SDT)" understanding that my participation is entirely voluntary. I acknowledge that my data will be kept strictly confidential and anonymous. I reserve the right to withdraw from this study at any time without penalty and to request that my responses not be used. The researcher is responsible for the secure storage of the data.

I have been informed of the following:

The data will be used to achieve the study's goals, specifically to gain insight into the state of students' well-being in academia. Participation in this study aims to enhance understanding of how students effectively cope with their university studies and the role of the learning environment in this regard.

I will be asked to discuss my personal experiences of well-being at the University of Groningen, factors that could enhance well-being and potential improvements the university could make to promote well-being.

The interview for this study will last approximately 60-90 minutes. At the conclusion of the study, the researcher will provide a detailed explanation of the research.

My responses will be treated confidentially, and my anonymity will be preserved. Therefore, my responses cannot be traced back to me as an individual.

The researcher will address any questions I may have about the study, both now and in the course of the study.

The interview will be audio-recorded to ensure accurate data capture.

I will have the opportunity to review a summary of my interview and indicate whether I wish particular parts not to be considered in the analysis. Additionally, the researcher has the right to publish the study's findings.

Date: [Participant's Date]   Date: [Researcher's Date]

Signature Participant: Signature Researcher:

Appendix B

Demographic Questionnaire Study: Understanding Well-being in Academia through Self-Determination Theory (SDT)

Participant _____ (filled out by the researcher)

We kindly request some brief sociodemographic information from you as a participant. This information will assist us in understanding your responses within context.

1. I am   ☐ male   ☐ female

    ☐ prefer not to say

    Define it yourself: _____

2. Age   _____ years

3. Nationality   _____

4. Concerning my studies

  a. Faculty: _____

  b. Department: _____

  ☐ Bachelor   ☐ Master

  ☐ 1st year   ☐ 2nd year   ☐ 3rd year

5. Academic Background: Do your parents have a university degree?

  ☐ yes   ☐ no

6. Are you enrolled in the Honours College of the University of Groningen?

  ☐ yes   ☐ no

If you have any further questions concerning the interview study, do not hesitate to ask. Again, thank you very much for participating in our study and helping us get better insights into well-being at the university.

Appendix C
Complete finalized codebook used for analysis

Code	Definition	Sample Quotes
Basic Needs		
Housing	Participants described the need for shelter that provides safety and comfort	*"I need to have a good place where I live, where I feel comfortable." (Mai)*
Food	Participants emphasized the need for nutritious food to maintain energy and motivation	*"If I eat good food, then I am more likely to sit down and study." (Sophie)*
Sleep	Participants highlighted the need for adequate rest to ensure proper functioning	*"Sleep for me is very important. If you're not well rested, obviously you're not gonna recollect anything." (Sophie)*
Safety and Security	Participants emphasized the need for financial security and a safe environment	*"I need to have enough money to buy food and drinks." (Mai)*
Belonging/Relatedness	Participants underscored the need for interpersonal relationships and being a part of the group	*"Outside academia, I need some friends to talk to, to hang out with." (Robert)*
Routine	Participants talked about the need for a structured schedule that provides consistency	*"My day-to-day can look very similar, I enjoy getting into a good routine." (Kiran)*
Free/Leisure Time	Participants emphasized the need for activities for relaxation	*"I need a little bit of outside life, hobbies, like doing sports."*

Code	Definition	Sample Quotes
	and enjoyment	*(Nina)*
Conceptualization of Well-being		
Comfort	Participants spoke about finding oneself in a pleasant situation	*"I need to have a good place where I live, where I feel comfortable" (Manaia)*
Satisfaction	Participants talked about a general state of contentment with one's life	*"I think it's to a large extent being satisfied with what you're doing" (Andrey)*
Happiness	Participants named happiness as a positive mental state, often named in combination with well-being	*"Well-being in general, I think it means that how you feel, like if you feel good, if you feel happy, its well-being" (Robert)*
Physical Well-Being	Participants described physical well-being a state in which one is free from disease and is getting adequate exercise	*"I think it's important to stay active, I play football at a club and if for some reason I haven't been training (...) it does have an effect on my mood" (Kiran)*
Values and Well-Being	Participants described the importance of fulfilling their values to in order to feel well	*"I feel like when I don't fulfill those (values), (...) I feel like it negatively influences me" (Mai)*
General Balance	Participants expressed the importance of having a proper balance between the challenges of academia and their personal lives	*"If I take too much too much classes then I get really stressed and then I don't really have life outside of school anymore and then my mental health goes bad" (Nina)*

Code	Definition	Sample Quotes
Holistic Well-Being	Participants described well-being as a combination of many different factors, most often mental and physical well-being	*"I would say well-being means to me that I feel physically and emotionally healthy, and I can do things that I want to do and that I'm not limited" (Mai)*

Perception/Experience of Well-being

Code	Definition	Sample Quotes
Positive Well-Being	Participants describe an experience of positive well-being	*"I think I'm a very content with my, with my life at the moment, and then I wouldn't say that there's a situation that can change that would make me feel better now" (David)*
Negative Well-Being	Participants described an experience of negative well-being	*"Especially if there's a high workload. (....) then I don't have a lot of well being because I don't like what I'm doing." (David)*
Satisfaction with Uni Positive	Participants described being satisfied with a certain aspect of the university	*I could easily go to study advisor or something like that. It makes them very approachable. So that that's, that's the main thing to be "proud of" (David)*
Satisfaction with Uni Negative	Participants described being dissatisfied with a certain aspect of the university	*"So, I honestly don't really feel like the university is doing that many things to enhance my*

Code	Definition	Sample Quotes
		well-being" (Mai)
Well-Being Development	Participants described how their well-being has developed during their studies	*"I think the first year was really the hardest emotionally, I studied a lot. The second year I started to be more chill about it" (Andrey)*
Autonomy		
Autonomy Positive	Participants defined autonomy as the freedom of making decisions and having control over one's behaviour	*"If I feel like I have everything in control, I'm managing my deadlines on time, I feel like everything's going well." (Lisa)*
Autonomy Negative	Participants defined it as a lack of control over their academic endeavours	*"In the second year, I always felt like I was not on top of my material, so as a result, I was never in control." (Sophie)*
Autonomy Development	Participants talked about gaining more control over their academic journey progressively throughout their studies	*"I think at the beginning I was really overwhelmed… Now I feel like I got the hang of it, and I know what I need to do and what's expected of me." (Mai)*
Autonomy Support	Participants about the impact of autonomy supporting university structures on their sense of autonomy	*"I have the autonomy to fill in quite a lot of things for myself. And it makes it very enjoyable, very motivating to do". (David)*
Autonomy and	Participants talked about the	

Code	Definition	Sample Quotes
Well-Being	impact a sense of control and agency had on their well-being	*"If I feel like I am in control and I can manage everything myself, I think that does positively influence my well-being." (Mai)*
Competence		
Competence Positive	Participants defined competence as being able to succeed in theirs tasks and goals	*"This year, I'm trying to do 75 points in one year and for now I'm on track, so that makes me feel really competent". (Nina)*
Competence Negative	Participants defined it as feeling overwhelmed and not on top of their material	*"I'm not really good at managing the stuff for university". (Robert)*
Competence Development	Participants defined it as increasingly becoming more self-efficient and confident in their abilities	*"I did become a lot more secure in my own ability to study, to effectively tackle problems in comparison to the first year." (Sophie)*
Competence and Well-Being	Participants talked about the impact of perceived competence on their well-being	*"I see myself as able to do the things that I have to do. It contributes to my well-being." (David)*
Self-Esteem	Participants talked about having a positive sense of self-worth	*"And this way, I can be more my authentic self, be more assertive as well, because I respect my needs." (Lisa)*
Self-Confidence	Participants defined it as a belief in their abilities	*"I know that if I would try something completely different, I kind of feel like I would still get a good grade in the end." (Bart)*

Code	Definition	Sample Quotes
Impostor Syndrome	Participants talked about feeling inadequate and uncertain about their abilities compared to their peers	*"I think I felt like it's so hard to pass anything and am I even smart enough to do this? Is it where I belong?" (Mai)*
Relatedness		
Relatedness Negative	Participants experience a lack of connection to their peers, family and/or studies	*"I'm not very connected to my peers in my studies to be honest, like since I changed my bachelor there's yeah a couple of guys there that I do some projects with but I don't talk to anyone there outside of school." (Kiran)*
Relatedness Positive	Participants describe a fulfilling and meaningful interpersonal relationship with their friends and/or family	*"Some friends here, yeah. But I mostly talk to my friends back home, that I have for life. And also my parents are really helping me with situations like this because they also went through kind of the same thing" (Robert)*
Relatedness Development	Participants describe how their relationships have developed over the years within their bachelor studies	*"First and second year, we were spending like, every day, the whole day together, like, and now it's really, maybe on the weekends, or if we have time then or like in between classes or something… especially this year, I have, like some of my*

Code	Definition	Sample Quotes
		friends I haven't seen at all, but nowhere near as much as compared to the previous years" (Andrey)
Relatedness and Well-Being	Participants experience how connections with people influence their perceived well-being	*"I would say well-being means to me that I feel physically and emotionally healthy, and I can do things that I want to do and that I'm not limited by it, and that I feel like I belong somewhere, and I have a good social circle." (Mai)*
Family/Partner Support	Participants talk about their experiences of support from their family or life partners.	*"I also have like, my partner is also, uh, finishing up their degree right now. So that's also, that's also really helpful. Like when I'm feeling stuck, then I talk to her and then she kind of gets me out of it again" (Bart)*
Peer support	Participants talk about the importance of a trustworthy and reliable peer support network	*"Like I said, the UCG, so my faculties, the community, the community is very tight-knit and they're very supportive of each other and the teachers as well. They're very close with the students, so it's a really nice environment to be in honestly. (Mai)*
Teacher support	Participants' perception of the	*"A very important factor is that I,*

Code	Definition	Sample Quotes
	teacher's willingness to aid students in their academic journey.	*at least for me, is that I can go at the end of the lecture and ask the professor questions that I have, and then they answer" (Sophie)*
Teacher Relatedness Positive	Participants recall positive experiences with teachers in which they could relate to them	*"With the teachers? Well, compared to what I've had before, they're super,super engaging. They're very calm, but that also might be because we're in uni, so I guess they treat us more like adults here or something" (Manaia)*
Teacher Relatedness Negative	Participants recall unpleasant or alienating experiences with teachers in which they could not relate to their teachers	*"I feel like we didn't have that much close contact with teachers, and I can, I don't know, reflect on it, because I think a lot of times it was also just other students that taught practicals" (Mai)*
Community	Participants stress the importance of a sense of community. A network of people one can rely on and seek emotional support from if needed.	*"Well, we all live in the same building, actually. So we're very, very close, I would say. They're very easy people to talk to. Obviously, there's groups here and there, but usually they're really easy to enter, like the groups and friends of different people across the years as well" (Manaia)*

Code	Definition	Sample Quotes
Dealing with stress		
Communication/Relatedness	Participants reported talking with peers or family as a method of dealing with stress	*"Now it's more communicating with people, because, like I said, people here are a lot more open-minded and more willing to talk about, like, issues and problems" (Manaia)*
Art	Participants reported creating art as a method of dealing with stress	*"I also like to use my poetry a lot." (Manaia)*
Solitude	Participants reported spending time alone as a method of dealing with stress	*"And also spend time just by myself or just go for a walk by myself. Or just have a day where I'm alone. I think that's very helpful" (Lisa)*
Stress avoidance	Participants described avoiding stress as way to cope with stress	*"I was just like, I don't have time for this. I don't have time to stress over it." (Sophie)*
Mindfulness/Meditation	Participants reported the us of meditation or a focus on mindfulness with as a method of dealing with stress	*"I like mindfulness. I don't know, I meditate a lot" (Julia)*
Solution-Focused coping	Participants reported taking action against stressors as a method of dealing with stress	*"So going to the library and then having stress is OK and just working through it and then when I get home then I'll just relax again" (Nina)*

Code	Definition	Sample Quotes
Reframing	Participants reported taking a new stance on stressors as a method of dealing with stress	*"I can see it in in the in the context, and I can see okay, well, I'm feeling shit now. But you feel horrible every once in a while. That's also what makes you able to feel good. So and yeah, I've been able to deal with it more" (David)*
Physical activity	Participants reported being physically active as a method of dealing with stress	*"I did go sometimes on some walks throughout the city at night, uh, for like one hour, two hours with just my headphones and my thoughts alone and that was rather nice, rather refreshing" (Sophie)*
Being outside	Participants reported spending time outside or in nature as a method of dealing with stress	*"Uh lately (...) or going on a walk." (Andrey)*
Time management	Participants report preventing stressful situations by making use of effective time management	*"I definitely manage organizing myself, especially during exam season. I have a schedule which I follow like example coming up so I can manage my time effectively" (Najeeb)*

Stress Others

Positive/functional stress	Participants describe a stressor as functional or positive.	*"if I'm not stressed at all, I feel like I'm not doing the right thing. I feel like I'm not doing that*

Code	Definition	Sample Quotes
		much." (Najeeb)
Negative effects of stress	Participants speak about the negative impact of stress	*"I'm really overwhelmed by the stress, and I really don't know what to do. I oftentimes can't really do any more work after that for the rest of the day, or for a couple of hours."* (David)
Stress and well-being	Participants describe the relationship between the experience of stress and feeling well in academia	*"I was so like mentally drained, like under stress that I didn't, couldn't even study."* (Sophie)
Resilience	Participants describe their ability to withstand stressors	*"then just communicated (the stressor) with some of my friends here. There's really nothing hard to get rid of."* (Manaia)
Uni Workload Positive	Participants experience the university workload as managable or realistic	*"Yeah, only positively because the workload was not quite a lot extra. But I did get the advantages."* (David)
Uni Workload negative	Participants experience the university workload as unmanagable or unrealistic	*"I had my quantum physics exam on Thursday and then an exam next Wednesday. And then I only had four days to study"* (Sophie)
Pressure to perform/Fear of failure	Participants experience stress to achieve certain results within their studies	*"In my second year, I just always felt like I'm underperforming. Although, like*

Code	Definition	Sample Quotes
		on paper I really wasn't. But I had this state of mind that everything is going bad" (Sophie)
Absence of Stress	Participants report to experience no stress at all	*"Everyone knows that I don't stress as much because I know that I'm going to study, do my best and hope for the best"* (Najeeb)
Time pressure	Participants report feelings of stress because of deadlines or upcoming exams	*"I would say right now I'm probably like the most stressed that I've been in my stuies so far, because a lot of really important, stuff is coming up"* (Bart)
Conceptualising Achievement		
Importance of Grades	Participants highlighted the importance of grades, discussing their impact on academic goals, self-esteem, and future opportunities.	*"I think talking about high achievement would be for me to pass everything without having any resits, and ideally passing with a good grade."* (Mai)
Comparison with Others	Participants compared themselves with others, reflecting on their relative academic performance and achievements.	*"I'd say that it's all about (...) grades relative to peers."* (David)
Fulfilling Expectations	Participants described their experiences with fulfilling	*"I just automatically expect that I can get everything done."*

Code	Definition	Sample Quotes
	expectations, including academic, personal, and external standards.	(Julia)
Recognition	Participants discussed the recognition they received for their achievements, including praise from peers, family, and faculty.	*"The words of my teachers. Their 'words, those they make me very happy. Vividly sometimes I remember their feedback." (Lisa)*
Achievement as a Tool	Participants viewed achievement as a tool for advancing future goals and gaining novel opportunities.	*"For me, grades don't have an inherent value. It's just a tool to get to where I want to get." (Julia)*
Effort	Participants emphasized the role of effort in achieving success, highlighting the importance of hard work, perseverance, and dedication.	*"You can get a good grade without working hard (...) but like high achieving actually working on what you're doing and even if you don't get a good grade, at least you know what you did is your best so you would be happy about it." (Najeeb)*
Understanding	Participants emphasized the importance of understanding concepts deeply, rather than merely passing or getting high grades.	*"Really understanding everything is probably the most important thing in academia" (Andrey)*
Achievement (Other)		
Importance of Achievement	Participants underscored the significance of achievement as an indication of personal progress, academic success,	*"For me are important because if I don't have these achievements, if I don't pass all the courses, then I will not be*

Code	Definition	Sample Quotes
	and future opportunities.	*able to continue next year here." (Robert)*
Importance of Achievement Negative	Participants indicated that achievement was not very important to them.	*"High achievement isn't really that important for me." (Nina)*
Achievement Expectations	Participants discussed their perceptions and experiences regarding achievement expectations, including internal and external pressures .	*"I feel like if I don't fulfil those things then I feel like I'm not as capable or competent or I'm not doing those things that I should be doing." (Mai)*
Honours College (HC)		
HC Content	Participants discussed the content of the honours college program, such as coursework and learning experiences.	*"Maybe in honors, I think there are some courses that have very strict structure." (Lisa)*
HC Relatedness	Participants described a sense of relatedness and connection within the honours college.	*"I think we can comfort each other a lot because we're going though similar things. Especially in honors because the sense of pressure is really there" (Lisa)*
HC Perceived Advantages	Participants identified perceived advantages of the honours college program, such as enhanced academic opportunities and personal growth.	*"We also get extra classes" (Sophie)*
HC Satisfaction Positive	Participants expressed positive satisfaction with their	*"It was a bumpy road but I'm glad I did it. That's what I tell everyone when they ask me*

Code	Definition	Sample Quotes
	experiences in the honours college program.	*about honors.” (Lisa)*
HC Satisfaction Negative	Participants expressed a lack of satisfaction with their experiences in the honours college program.	*“Overall, I wouldn't say it's very useful personally.” (Andrey)*

Values and Well-Being

Code	Definition	Sample Quotes
Autonomy (value)	Participants emphasized the importance of autonomy as a value, used to guide them through university	*“For me to be able to, uh, be confident and like the university experience, I really, really need to be in control” (Sophie)*
Conscientiousness	Participants explain the importance of being responsible, careful, and diligent	*“Being organised, beginning on time, learning throughout the block as well.” (Nina)*
Discipline	Participants describe discipline as the way to do what needs to be done	*“But yeah, just be determined to complete what I started, and then get on the path that I wanted to get on eventually, and just stick to that, basically.” (Manaia)*
Drive/ambition	Participants see drive/ambition as motivation to achieve greater things	*“So I think also like keep taking that kind of risk, like of potential failure or potential success is, uh, for me also a big, pretty big*

Code	Definition	Sample Quotes
		one to like, keep it a bit more interesting for me." (Bart)
Effort/hard work	Participants emphasize the extent of work one is putting in	*"Yeah, just like trying your best or doing it even if you don't like it. You know, I think that's part of well-being in this context." (Andrey)*
Independence	Participants express the need for freedom from the control, influence, or like of others	*"You see what you can do better and, sort of taking charge in your life like that. Not try to let I don't know outside factors or other people influence you too much. You take charge of what you want to do how you want to do is, you know." (Kiran)*
Self-Awareness	Participants understand self-awareness as the ability to understand your one's own thoughts, strengths, weaknesses, and beliefs	*"And this way I can be more my authentic self and maybe yeah, be more assertive as well, because I respect my needs. And then I feel like the cooperation with other people is also great on the professional level or personal" (Lisa)*
Being perceived as a person	Participants believe that there should be an appreciation of people seeing them as who they are	*"I do feel connected to them, but I also definitely see differences. And I think we also have different opinions about certain things. And I think some things that they would take for granted, for example, that they're getting money every*

Code	Definition	Sample Quotes
		month, I would never, and I think they also have a different way of looking at work. I think from how I grew up, work is necessary to survive. And for them, they view career and work a bit differently, because I think they have more freedom to choose and more support in a way." (Mai)
Career	Participants view career as a value in terms of components that define their professional career	*"I think I'm what I want to get out of the study is to get a job that I really like. And a job that really doesn't stress me and that i love for years and years. So I think that's the goal." (Nina)*
Caring for others	Participants believe that one should have the ability to be empathetic and be able to connect to others	*"Second of all, a very important thing for me is if somebody asks me for help, I help them because I feel like if I wanted to know something and I went to ask somebody, I would very much like if they would answer me rather than ignore me. So I feel like it's a very important thing that when somebody asks me, I answer the question. So I put a lot of value on that."*

Code	Definition	Sample Quotes
		(Sophie)
Relatedness (values)	Participants value and believe that one needs to belong	*"The most important part for me was finding a group of people and then like, you know, them help you helping each other out Yeah. Rather than university really stepping up. So that's how I experienced my studies study so far." (Sophie)*
Contribution	Participants understand contribution as the belief that one is able to help and develop a sense of purpose in life	*"Teaching just really, really makes me happy. Mm-Hmm. So, uh, answering any questions, lovely stuff. Mm-Hmm. um, especially when, like, for example, in the past two months, uh, now that we're at the end, and also now that we really sort of know each other in our cohort." (Sophie)*
Self-care	Participants understand the importance of taking time to do things that help and improve both your physical and mental health	*"Having time to keep everything clean, like not necessarily clean or anything like ordered and everything in my house, like making sure everything's you know how it's supposed to be" (Andrey)*

Code	Definition	Sample Quotes
Positivity	Participants view positivity as the belief that one should hold a positive attitude to cope with adverse situations	*"I think you need to be positive in every situation. You don't need to... If you, if you hear bad news, you don't need to feel like the world is ending for you. And you don't need to you, don't have to do it. You just need to ... I don't know how to say. You just need to" (Robert)*
Personal growth	Participants define personal growth as being involved in becoming more aware of ourselves, and having the will to grow into the person we want to be	*"Because even like, even if some stuff is difficult, if not too many things, like if a limited number of things are difficult, then then once you are able to do them, at the end of the day, you feel better than if everything was very, very easy. Right? So I think having some difficult stuff that makes you feel incompetent, is also good" (Andrey)*
Purpose/meaning in life	The participants belief that one should have a sense of meaning and direction in life	*"I wanted to be able to contribute to society, I'd say If that makes it it's not necessarily making a lot of money or anything. That's that's that's. That's a little less interesting to me." (David)*

Code	Definition	Sample Quotes
Knowledge	The belief that educating oneself sufficiently is important in order to make correct decisions in life	*"Obviously that's not gonna be that much beneficial in the long run. Mm-Hmm. Uh, when you go into PhD, professorships, whatever you do specialize in one topic. But I think if you want to still specialize in one topic, it's very important that you have a background in a lot of different things" (Sophie)*

Interventions

Satisfaction with Uni Positive	Participants describe their pleasant experiences within the university environment	*"Diversity, especially for this course. For me, academia is not really about just studying and then passing your exams. I really like to learn what I'm learning, and that's why I like the diversity of my course, specifically" (Manaia)*
Satisfaction with Uni Negative	Participants give a negative evaluation and show general discontent towards the university	*"Yeah, I feel like I have no relationship with the university. I just go to just go back home and not think about university at all. Yeah, like it's completely different than when I was in school where I actually had a good relationship with my school" (Najeeb)*
Accessibility of Support Negative	Participants talk about multiple services provided by the	*Over the years I kind of learned how academia works and what*

Code	Definition	Sample Quotes
	university to aid students in fostering and maintaining their well-being	*are the roles and the functions. The teachers, the study advisors. I also, along the way, I learned how to ask for help, or support. I also did the student service psychologist session." (Lisa)*
Accessibility of Support Negative	Participants describe negative experiences with support services provided by the university	*"I don't think it's really that accessible because I've heard of a friend of mine who also applied for the student psychologist and they had like a wait time of two to three months at that time." (Nina)*
Respect for Student's Opinion	Participants feeling of their voice/opinions being heard and considered by university staff	*"And even after like multiple complaints, and when we have like the second level of this course, in the second year, they didn't take our complaints into account and they just copy pasted the same three pages of the mental health" (Sophie)*
Positive Learning Environment	Participants' idea of a safe and nurturing learning environment	*"I need a safe environment to be who I want to be. In a sense that I can share my ideas, share my critique, share my passion about things without feeling that it's frowned upon or not wanted." (David)*
Interventions	Participants talk about how the	*"I think like in the first year you*

Code	Definition	Sample Quotes
Relatedness	university could foster a more supportive environment fulfilling the need for relatedness	*have a student mentor and faculty mentor, I think if that's a bit in a background as well for the second year, I think that will help, because in the first year I had a great student menor and she really helped me with managing expectations and that like type of stuff. I think it would be great if something like that would be accessible for the second and third years if you wanted." (Nina)*
Interventions Autonomy	Participants talk about how the university could foster a more supportive environment fulfilling the need for autonomy	*"I think I can't think of something specific apart from what we're doing now. I guess just the individual approach of teachers. That they can like recommend and maybe teach us guidelines from the organizational perspective. Where they give lessons and teachings." (Lisa)*
Interventions Competence	Participants talk about how the university could foster a more supportive environment fulfilling the need for competence	*"At the start of the year, the courses that we got weren't like run mainly by the teachers. They were by the TAs, which are students. So the students like us first years, they couldn't manage to understand what's happening because the teacher isn't actually the one lecturing*

Code	Definition	Sample Quotes
		us… So yeah, teachers should have a more role in our courses I believe.” (Najeeb)
Awareness of Interventions by Uni	Participants awareness regarding interventions provided by the university to improve students' mental well-being	*“The only thing that I know of is the student psychologist, but further I don't really know that the university does anything. Maybe it's because I don't know.” (Nina)*
No Perceived Need for Interventions	Participants' opinions on whether interventions by the university are necessary or not	*“But I think in my life at least that's the furthest that the university goes to do anything, you know. I think for well-being and things like that. You don't go to your university, right? You talk to your friends. You talk to your parents, you do something like that. So, yeah, I also don't really think it's the universities role to take care of students too much outside of class.” (Kiran)*
First-Generation Experience		
Family/Partner Support	Participants' perception on support by their family or partner	*Well, yeah, I received a lot of support from my mother. Definitely. Well, of course, my grandparents as well, because it is a prestige thing. I guess. (David)*

Code	Definition	Sample Quotes
Financial Situation	Participants mention or talk about their financial situation, implicitly or explicitly	*And now, I mean, my parents are there to talk and they support me emotionally, but they cannot support me financially, so I don't get any money from them (Mai)*
Hidden Curriculum	The hidden curriculum in academia describes a covert set of expectations or values that are not explicitly taught but gives an advantage to those who inherit the values, norms and beliefs of mainstream society, predominantly upper and middle-class (Kentli, 2009). The code was applied whenever participants mentioned aspects that fitted in the concept.	*A lot of them are like children of lawyers or this very kind of high institutional. High class...There you can see their childhood has been very educated and they've been kind of brought up for that knowledge. So you can see they're intelligent. Because they have it in their genes. (Lisa)*
Alienation/Perceived Differences	Suited for first-generation students, when they mention alienation or differences because of their first-gen status	*I do feel connected to them, but I also definitely see differences. And I think we also have different opinions about certain things. (Mai)*
Society's Expectations	First-Generation Students talk about how they perceive expectations of society influence their experience	*I think I do think that there's just a bit more of a social pressure on studying. (Bart)*
Wage Labour		
Job yes	Applied if participant reports having a job	*I work as a teaching assistant. (Sophie)*

Code	Definition	Sample Quotes
Job no	Applied if participant reports not having a job	*No, I don't [work], unfortunately. (Manaia)*
Job Experience Positive	Participants experience their job positively	*Yes, I do not really have to work besides my studies. But I do because I like it. And it gets a little extra money, of course, nice. (David)*
Study/Work Balance Positive	Participants evaluate positively how studying and working in a job goes together	*So how I manage it... I have it really packed but I have like the physical cleaning job is like regular. And then I have those other jobs which are kind of freelance or I can plan and randomly or put it in the free spot that I have in my day. So it's quite flexible. (Lisa)*
Study/Work Balance Negative	Participants evaluate negatively how studying and working in a job goes together	*It's just annoying 'cause you just got, uh, especially now in like writing the thesis and like making the end work, it just takes up so much time. (Bart)*
Job Ideation Positive	Wether participants had a job or not, the code refers to participants' positive attitudes towards a job and how they ideate it.	*I do want to work. I think it's an important experience to have to be able to be independent and manage everything. I don't think it would add that much to my workload, honestly. (Manaia)*
Job Ideation Negative	Wether participants had a job or not, the code refers to participants' negative attitudes towards a job and how they	*If you know for people who who actually really need the money and who are working a lot and you know probably overworking*

Code	Definition	Sample Quotes
	ideate it.	*then I think at that point* *negative (Kiran)*