

Intervention

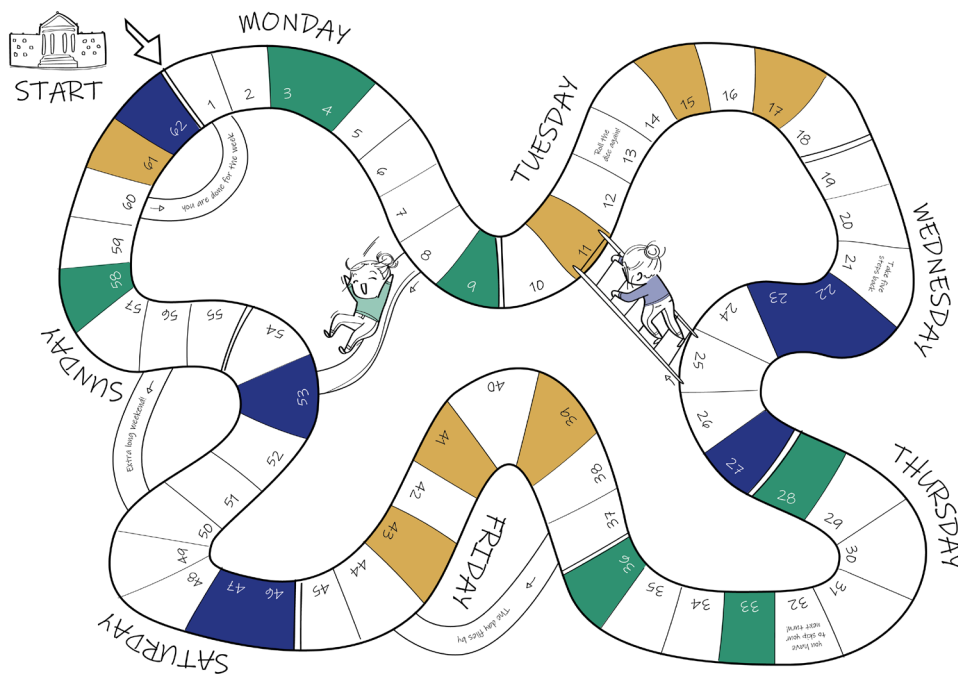
aimed to promote student well-being
in higher education,
a game-based approach

created by

Kiltz, Lisa

Fokkens-Bruinsma, M.

Jansen, E. P. W. A.



Contents

- Contents 2
- Welcome! 3
- Students’ well-being and the learning environment..... 4
- Intervention 6
 - Timeline 6
 - Preparation 7
 - First lecture..... 7
 - Board Game 8
 - Agreement 11
 - Midway lecture 11
 - Monitoring discussion..... 11
 - Final lecture 11
 - Feedback discussion 11
- Data collection 13
 - Questionnaire 13
 - Follow-up interviews..... 13
- References 14
- Appendix..... 16
 - Example of a potential agreement..... 16

Welcome!

You have shown interest in your students' wellbeing and possibilities to enhance their wellbeing. We are pleased to offer you an intervention aimed to improve student well-being in higher education by targeting the individuals in relation to their learning environment. Using a game approach, both students and teachers are asked to shape and adjust their educational environment to create a healthier academic system.

This manual will first give you a rough overview about the relevance of certain basic psychological needs for student well-being, then explain the intervention in detail, and, lastly, describe the data collection procedure surrounding the intervention.

We hope to be able to enrich your teaching with this game-based approach and to facilitate your students' life at the university.

Lisa Kiltz

Marjon Fokkens-Bruinsma

Ellen P. W. A. Jansen

For any remarks, comments, or suggestions, feel free to contact the researchers at: l.kiltz@rug.nl

Students' well-being and the learning environment

University students frequently demonstrate impaired well-being. For them, psychological problems are more elevated compared to the general population in the same age group (Benbassat, 2014; Larcombe et al., 2016; Stallman, 2010). Furthermore, the psychological strain that university students perceive increases after entering university and never returns to the pre-registered level (Bewick et al., 2010; Cooke et al., 2006). Academic distress can be problematic in that high levels of stress appear to be associated with lower academic achievement (Stallman, 2010) and cognitive as well as behavioral problems in the educational context (Baik et al., 2017). Therefore, the study years depict a potentially sensitive period in a given individual's life (Compas et al., 1986).

Prior research illustrates the substantial role of the learning environment – defined as academic stakeholders, educational methods, and structural aspects –, in which both structural and interpersonal factors can promote various needs associated with student well-being (Niemic & Ryan, 2009; Stanton et al., 2016). Regarding interpersonal factors, the emphasis lies on teacher–student relationships, within which student well-being can be fostered (Baik et al., 2019; Niemic & Ryan, 2009). Key aspects within this relationship include providing students with constructive feedback, promoting their sense of control, and treating them with respect (Niemic & Ryan, 2009).

Figure 1. The three basic psychological needs of autonomy, competence, and relatedness



Within the learning environment, student well-being relies on the satisfaction of the basic psychological needs (BPN, see Figure 1): autonomy (the need to experience behavior as self-directed), competence (the need to experience behavior as effectively enacted), and relatedness (the need to interact, be connected to, and care for others). These needs are part of the Self-Determination Theory explaining aspects that foster well-being (Deci & Ryan, 1985). Generally, need satisfaction has already been found to be connected to psychological health in young adults and adolescents (Inguglia et al., 2015), but may also be specifically promoted by educational structures (Hofmann et al., 2020; Stanton et al., 2016). Students' BPN can further be satisfied within the interpersonal student-teacher

relationship, leading to enhanced well-being and academic learning (Kiltz et al., 2020; Niemiec & Ryan, 2009). As promoting students' basic psychological needs has already been relevant for past interventions (e.g. Chandler et al., 2020), we are aiming to create another intervention tailored towards promoting students need satisfaction within the learning environment.

Intervention

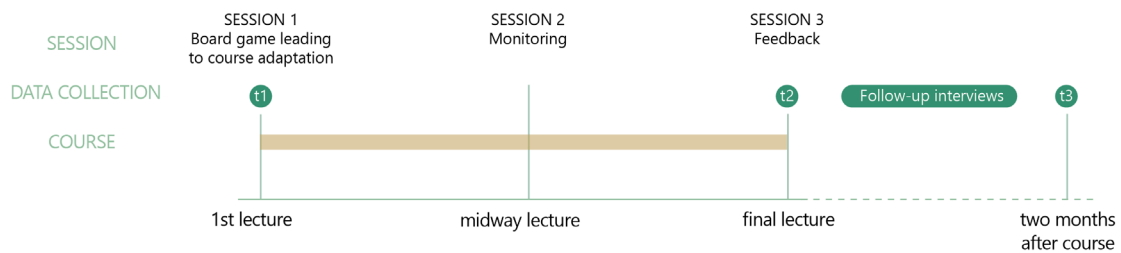
In the following, the outline of the intervention will be explained, and examples given that may fit your students' (basic psychological) needs. We hope that it will become clearer how you as a university teacher can adjust your course, as a lecture, seminar, or even the supervision of a thesis also beyond the intervention itself. The intervention itself is aimed to (a) raise awareness regarding the three basic psychological needs, (b) give students and teachers a shared responsibility to shape their learning environment so that it satisfies their needs, and (c) satisfy the needs through the additional individual elements within the intervention itself.

Timeline

The intervention is planned for the timespan of your course or the thesis supervision, so ranging from a couple of weeks to up to around five months. In this time, parts of the intervention will take place at the very first lecture of your course (t1), midway through it (t2), and during the last lecture (t3). Figure 2 aims to provide a short overview about the procedure of the intervention and how the individual steps would look like.

During the first lecture, the students will play a board game at t1 aimed to raise awareness of the importance of the basic psychological needs of autonomy, competence, and relatedness for well-being. In this game, they will be asked questions to make them reflect about these needs within the classroom. Subsequently, teachers and students will engage in a discussion about the role of these needs within the upcoming course and agree upon one adjustment within the course itself for each of the needs. At t2, the progress of this agreement will be evaluated and reformulated, if the course needs to be set back on track to match the agreement, or if the agreement itself may need alteration because the initial thoughts were not feasible after all or another aspect has become more important. This session will be accompanied by a short exercise to enhance students' sense of relatedness. Finally, at t3, students and teachers will recap the course in terms of how the agreement and exercises promoted students' well-being, how both parties realised the agreement, what could be improved, and what students and teachers can take away from the experience. Again, this session will be enriched by a short exercise, this time focusing on promoting students' sense of competence.

Figure 2. Proposed timeline of the intervention, including intervention sessions and dates of data collection



Preparation

As you will be discussing ways to adjusting the course set-up, it would be wise to brainstorm about feasible possibilities that are within the course requirements and in accordance with the board of examiner. We know that these kind of adjustments can be quite challenging when not being well-acquainted with the theory and its significance in educational practice. This is why we wanted to provide you some examples of aspects that you and your students could agree upon during the first lecture. Because we think that collective experience sharing may be helpful in this case, we decided to create a padlet (you can find it at padlet.com/lkiltz/BPNsnakesladders) with initial examples that you can enrich with your own experiences and ideas regarding the intervention (an explanation of how to do this is embedded in the padlet as well). The initial examples we want to give as introductory input are based upon a variety of research (e.g. Kiltz et al., 2021a, 2021b; Niemiec & Ryan, 2009; Stanton et al., 2016). Beyond that, you may consider the student well-being portal of the University of Groningen for further inspiration on how to promote your students' well-being: <https://student.portal.rug.nl/infonet/studenten/studenten-welzijn/>

First lecture

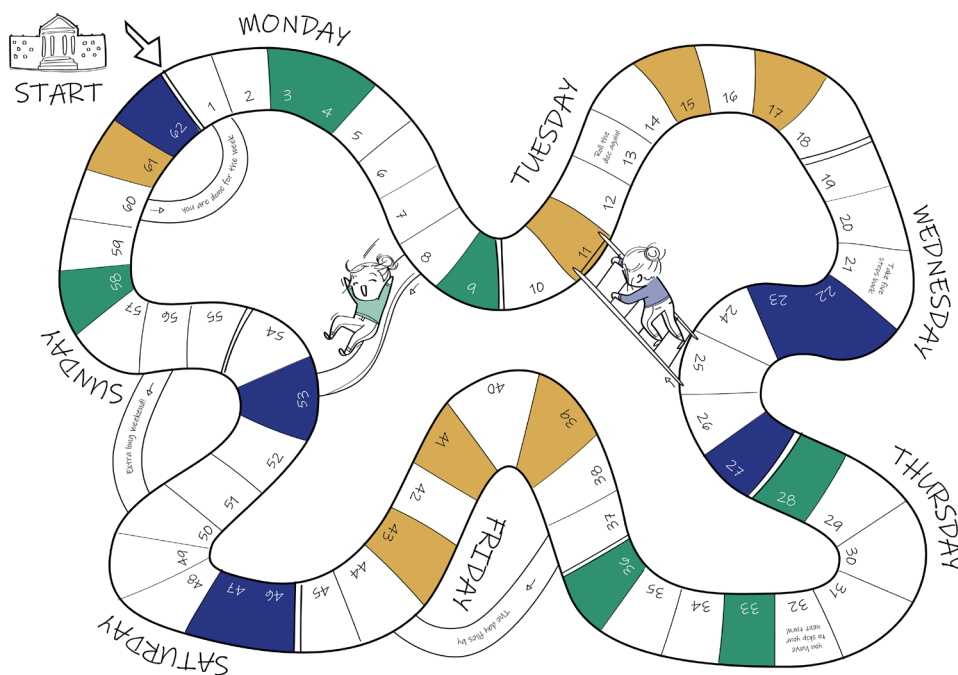
The first session consists of two steps. First, the students and the teacher(s) will play a board game tailored to enhancing awareness of the basic psychological needs and their role within the learning environment. Second, the students and the teacher(s) will engage in a subsequent discussion and agree upon three aspects (one for each need) according which they want adjust the upcoming course. Playing the game altogether and discussing how you as a whole group will approach the upcoming course may already enhance students' sense of autonomy and relatedness. As we believe that teachers and students engaging in the game together may enhance relatedness on both sides, we encourage teachers to join. In bigger courses, however, this could be difficult. Please consider joining in with one of the groups nonetheless!

The first part of the intervention will take up approximately 45 minutes. The second part depends on the group size – but it shouldn't take up more than 15 to 20 minutes.

Board Game

In groups of up to five, the students are invited to play a board game. The teachers and other stakeholders, such as teaching assistants, are welcome to join the game as well. The board game resembles the game 'snakes & ladders' (Dutch: 'ganzenbord'; see Figure 3). In principle, the players have one token each and need to move through the 'week' according to the dice's result. During the game, they need to collect cards, which are categorised in three different kinds (autonomy, competence, and relatedness). The goal of the game is for each player to have at least one card per category. As soon as the last player got cards of all three categories, the game will be over.

Figure 3. Board of BPN Snakes & Ladders.



There are two options of how to play the game:

- 1) The game can be played as a real board game. The will provide you with sufficient boards, tokens, and cards, so that every group within your course has enough equipment to play the game. Additionally, we will print the rules for them. The only thing the participants have to bring themselves is a piece of paper, a pen, and a timer (for instance of their smartphones).

- 2) We are currently working on an elaborated online version of the game, which will, however, likely not be finished by the beginning of the intervention. Nonetheless, the game can be played online in case of COVID-19 restrictions and online teaching. For this, we will create a jamboard that can be accessed by the group members, including the board, tokens that they can move, a link to an online dice roller and an online timer, and two additional slide for Pictionary and the rules. The cards will be drawn using the prototype of the elaborated online version via a link that we will provide as well in the jamboard. For an example, see here: <https://jamboard.google.com/d/1cvkAt7Vqu0ZefxCu8rElovAwukWz9Op3Z1Z44rOdfTE/edit>

Before you start:

Only for Version 1: Create groups of up to five players. Shuffle the cards and place them in three separate piles (one for the green cards [autonomy], one for the yellow cards [competence], and another one for the blue cards [relatedness]) next to the board. Let each player choose one token and place it on 'START'.

The rules:

Each player throws one dice at the very beginning; the player with the highest number of pips begins. In turns, you throw both dices and move your token according to the sum of the number of pips in the direction of the week (starting with Monday). If the field you end up on is coloured, you may take a card of the respective colour. The three different colours represent the three BPN. There are three different type of cards within each pile: reflective, creative, and relational cards (see Figure 4).

1. *Reflective cards* ask questions that you need to reflect on and simply tell your group members what you think about them. The other group members are also invited to state their opinion, either to give their agreement or other opinions on the topic as well. You can also choose not to answer them; then you cannot keep the card.
2. There are four types of *creative cards*: (1) Pictionary – you need to draw the word that is on your card without using letters or words; (2) Charades – you need to depict the word only using your body (not your voice!); (3) Taboo – you need to explain the word without using the word itself; (4) Tell an anecdote – tell your group members a story related to the topic on the card. For type (1) – (3), the other group members have to guess; if they do guess the word within the first 30 seconds, you may keep the card. For type (4), you gain the card if you tell such an anecdote; you may also choose not to, then you cannot keep it.
3. *Relational cards* are aimed at the group level. They engage the whole group in relation to the player and need to fulfill the task altogether.

You can choose yourself if you want to answer the card or if you would rather skip the card. In that case, you simply return the card under the pile and it will be the next player's turn. If you decide to carry out the task on the card, you may keep your card as soon as you successfully answered the card, or your group successfully guessed your word. Otherwise, you need to return it and put it back underneath the pile. If you threw a double for your turn, you may continue; otherwise, it's the next player's turn.

Figure 4. Examples of the three different types of cards, one for each BPN.



There are bridges on the board, just as with the original 'snakes & ladders', which bring you across the board if you land on them. Follow the direction the arrows indicate on the board.

One last rule: As soon as you completed the first week, you will enter the second week. Starting now, you can swap cards with other players in their second week, to obtain one card of all three categories. This will then be your turn; you may not roll the dices if you choose to swap cards. When you swap cards, you first need to fulfill the task yourself to keep it.

The end of the game:

The game ends as soon as all players have at least one card of each category. There are no winners – the goal is that every single player has one card of each category in their hands!

Agreement

After the board game, the whole group should get together and discuss how they would want to assure need satisfaction within the upcoming course. For each need, one aspect of the course's learning environment may be altered to fit the students' needs and to, in turn, enhance their well-being. Agreeing on it together with students and teachers (as well as potential other stakeholders, such as teaching assistants), both the students' wishes and the teachers' rationale for the course will be taken into account. Explaining why certain wishes can or cannot be granted from the side of the university can also enhance students' autonomy as it gives them an explanation of why they need to do something. Therefore, being transparent in academic decisions and curricula changes may prevent students from feeling helpless or uncertain whilst making them feel more autonomous.

In the appendix, you can find a template for such an agreement that could then be uploaded to the online course environment.

Midway lecture

Monitoring discussion

Midway through the course, the agreement created at the beginning of the course should be reconsidered. Students and teachers together should ask themselves whether they have successfully implemented the agreed-upon aspects thus far, whether these need to be adjusted based upon how the course developed until now, and what they need to do to implement the aspects better than before. This monitoring session should not take longer than 10 to 15 minutes.

Final lecture

Feedback discussion

Altogether, everyone that has been part of the intervention, students and teachers as well as potential additional stakeholders, should engage in a feedback discussion regarding how they experienced the

intervention. There are no wrong or right answers, as everyone experiences and perceives interventions differently, so an open discussion atmosphere should be created. Questions that could be discussed include, but are not exhaustive to, which positive as well as negative aspects students and teacher(s) experienced, what they would change for the future of the intervention, and which of the aspects that they agreed upon were successfully implemented and which not, as well as how they would explain these differences. For the session, we will provide a sheet with questions that guide the feedback process. The feedback session should not take longer than 15 to 20 minutes.

Data collection

Questionnaire

For the purpose of evaluating the intervention's effect, the participating students are asked to fill out a questionnaire three times in total. They should fill out the first survey during the first lecture, before the start of the intervention. The second one will be after the feedback session, and the last one two months after the course has ended.

The survey itself encompasses students' sociodemographic information as well as questionnaires on their need satisfaction, well-being, and resilience. For the second survey, additional open-ended questions will be added to give the students the possibility for more elaborate feedback. Moreover, they can indicate whether they would be open to participate in a 20-minute interview to give more detailed feedback regarding their experiences during the intervention.

At each time point, the questionnaire will take up around 10 minutes time. At the second one, due to the more elaborate open-ended questions, this will likely be a bit more.

Follow-up interviews

To get more in-depth feedback on how students experienced the intervention and how it influenced their well-being, we are planning on conducting additional follow-up interviews of about 20 minutes with the students that would want to allocate time to it. Beyond that, we also invite teachers and other potential stakeholders such as teaching assistants for such follow-up interviews.

References

- Baik, C., Larcombe, W., Brooker, A., Wyn, J., Allen, L., Brett, M., ... James, R. (2017). Enhancing Student Mental Wellbeing: A Handbook for Academic Educators. Melbourne.
- Benbassat, J. (2014). Changes in wellbeing and professional values among medical undergraduate students: a narrative review of the literature. *Advances in Health Sciences Education*, 19(4), 597–610. <https://doi.org/10.1007/s10459-014-9500-1>
- Bewick, B., Koutsopouloub, G., Miles, J., Slaad, E., & Barkham, M. (2010). Changes in undergraduate students' psychological well-being as they progress through university. *Studies in Higher Education*, 35(6), 633–645. <https://doi.org/10.1080/03075070903216643>
- Compas, B. E., Wagner, B. M., Slavin, L. A., & Vannatta, K. (1986). A prospective study of life events, social support, and psychological symptomatology during the transition from high school to college. *American Journal of Community Psychology*, 14(3), 241–257. <https://doi.org/10.1007/bf00911173>
- Cooke, R., Bewick, B. M., Barkham, M., Bradley, M., & Audin, K. (2006). Measuring, monitoring and managing the psychological well-being of first year university students. *British Journal of Guidance and Counselling*, 34(4), 505–517. <https://doi.org/10.1080/03069880600942624>
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Springer Science+Business Media.
- Hofmann, Y. E., Müller-Hotop, R., & Datzler, D. (2020). Die Bedeutung von Resilienz im Hochschulkontext-Eine Standortbestimmung von Forschung und Praxis. *BZH - Beiträge Zur Hochschulforschung*, 42. Jahrga(1–2), 10–35.
- Inguglia, C., Inguglia, S., Liga, F., Lo Coco, A., & Lo Cricchio, M. G. (2015). Autonomy and Relatedness in Adolescence and Emerging Adulthood: Relationships with Parental Support and Psychological Distress. *Journal of Adult Development*, 22(1), 1–13. <https://doi.org/10.1007/s10804-014-9196-8>
- Kiltz, L., Rinas, R., Daumiller, M., Fokkens-Bruinsma, M., & Jansen, E. P. W. A. (2020). "When they Struggle, I Cannot Sleep Well Either": Perceptions and Interactions Surrounding University Student and Teacher Well-being. 11(September), 1–18. <https://doi.org/10.31234/osf.io/7a948>
- Kiltz, L., Fokkens-Bruinsma, M., Jansen, E. P. W. A., Axmann, F. S. (2021) *Caught Between Relief and Unease. How University Students' Well-being Relates to Their Learning Environment During the COVID-19 pandemic in the Netherlands* [Unpublished manuscript]. Faculty of Behavioural and Social Sciences, University of Groningen.
- Kiltz, L., Trippenzee, M., Fleer, J., Fokkens-Bruinsma, M., Jansen, E. P. W. A. (2021) *How University Students' Well-being Relates to Their Learning Environment During the COVID-19 pandemic in the*

Netherlands [Unpublished manuscript]. Faculty of Behavioural and Social Sciences, University of Groningen; Faculty of Medical Sciences, University Medical Center Groningen.

Larcombe, W., Finch, S., Sore, R., Murray, C. M., Kentish, S., Mulder, R. A., ... Williams, D. A. (2016).

Prevalence and socio-demographic correlates of psychological distress among students at an Australian university. *Studies in Higher Education*, 41(6), 1074–1091.

<https://doi.org/10.1080/03075079.2014.966072>

Niemiec, C. P., & Ryan, R. M. (2009). Autonomy, competence, and relatedness in the

classroom: Applying self-determination theory to educational practice. *Theory and Research in Education*, 7(2), 133–144. <https://doi.org/10.1177/1477878509104318>

Stallman, H. M. (2010). Psychological distress in university students: A comparison with general

population data. *Australian Psychologist*, 45(4), 249–257.

<https://doi.org/10.1080/00050067.2010.482109>

Stanton, A., Zandvliet, D., Dhaliwal, R., & Black, T. (2016). Understanding Students' Experiences of

Well-Being in Learning Environments. *Higher Education Studies*, 6(3), 90–99.

<https://doi.org/10.5539/hes.v6n3p90>

Appendix

Example of a potential agreement

As a course, students together with teachers and every potential stakeholder beyond those two parties that are involved in the course (e.g. teaching assistants), we agree upon the following three aspects to create a course that satisfies the basic psychological needs for autonomy, competence, and relatedness (one agreement per need):

To promote students' sense of **autonomy**, we agree to....

...for the duration of the upcoming course.

To promote students' sense of **competence**, we agree to....

...for the duration of the upcoming course.

To promote students' sense of **relatedness**, we agree to....

...for the duration of the upcoming course.