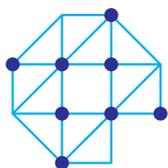# Social connectedness in Online and Blended Learning Communities

Acceleration plan
Educational innovation
with ICT

flexibilisation

Social connectedness in Online and Blended Learning Communities

Acceleration plan
Educational innovation with ICT

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Foreword

It has been with great interest and curiosity that I supervised the Learning In Flexible and Personalised Education (LIFEGO) research project, which laid the foundations for this guide. As a professor in Reciprocity in Learning Networks, I have a keen interest in how social connectedness – a sense of community – can be created while at the same time meeting the individual learning needs of students in changing contexts. This requires all participants of a learning community to be aware of how to foster social connectedness; this does not happen automatically. Lecturers have a significant role in setting up and guiding learning communities.

As lead professor, it was a great pleasure to work with a research team that pushed the boundaries with a view to understanding the day-to-day practice of both lecturers and students of the participating learning communities. I found the research team of researchers and professors of the four universities of applied sciences – The Hague University of Applied Sciences, Leiden University of Applied Sciences, Saxion University of Applied Sciences and Hanze University of Applied Sciences in Groningen – to be a well-functioning learning community. They gave constructive critique, complemented each other and provided coaching with a focus on the higher goal: improving education by developing design principles for social connectedness in flexible and personalised education. It was particularly inspiring to see that they offered a number of highly practical IT (and other) tools.

This guide to Social connectedness in Online and Blended Learning Communities would not have come about without the professional and constructive cooperation of the researchers and professors – Anne Venema MSc, Dr Ellen Sjoer (The Hague University of Applied Sciences), Jacqueline van Oijen and Dineke van Essen MSc MA (Leiden University of Applied Sciences), Rosalien van der Meer MSc and Kariene Woudt-Mittendorff (Saxion University of Applied Sciences) and Renée Oosterwijk MSc (Hanze University of Applied Sciences). I would like to thank them all very much for their fantastic cooperation. Many thanks also to the Steering Committee of the Acceleration Plan for Educational Innovation with IT for their valuable feedback and ideas about connecting this project to other projects in the Acceleration Plan but also elsewhere. Last but not least, I would like to thank the lecturers and students for the time they devoted to the research.

Groningen, 14 September 2021

Jelly Zuidersma
Professor ('lector'), Reciprocity in Learning Networks, Hanze University of Applied Sciences

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Management summary

Increasing flexibilisation and personalisation of education creates challenges in terms of students' social connectedness with each other, with the programme and with lecturers.

For this reason, a team of researchers and professors from four universities of applied sciences in the Netherlands carried out research into how a sense of community can be created in learning communities. On the basis of a literature review and design-oriented research, we conducted experiments aimed at fostering social connectedness in eight learning communities. These learning communities were in the domains of Nursing, Healthcare and Welfare Teacher Training, Management in Care, Teacher Training, and Nutrition and Dietetics (part-time, full-time and dual programme variants).

The above research resulted in this Social connectedness in Online and Blended Learning Communities guide, which consists of two parts. Part one outlines the seven design principles (focused on content, attitude and preconditions) which lecturers can work with in their role as facilitator. The lecturer can apply these design principles to promote social connectedness in online and blended learning communities, including when flexible student paths are involved. These design principles are supported by practical IT tools and working methods and are widely applicable. The design principles involved are:
A. Getting to know each other
B. Trust and cooperation
C. Shared and common goals
D. Willingness to participate
E. Programme and instruction strategies
F. Sharing information and knowledge
G. Resources and preconditions

Part 2 consists of a methodological justification and substantiation of the research underpinning the guide as well as a description of the results and ends with a conclusion, discussion and recommendations for further research.

The experiments showed that learning communities that were newly established or had changed in composition after some time mainly opted for design principles A. Getting to know each other and B. Trust and cooperation. Learning communities that had been active for a longer period chose mainly C. Shared and common goals. Further longitudinal and other research is needed to determine to what extent the design principles and the role of the facilitators can be applied in other domains (such as technology, economics, etc.).
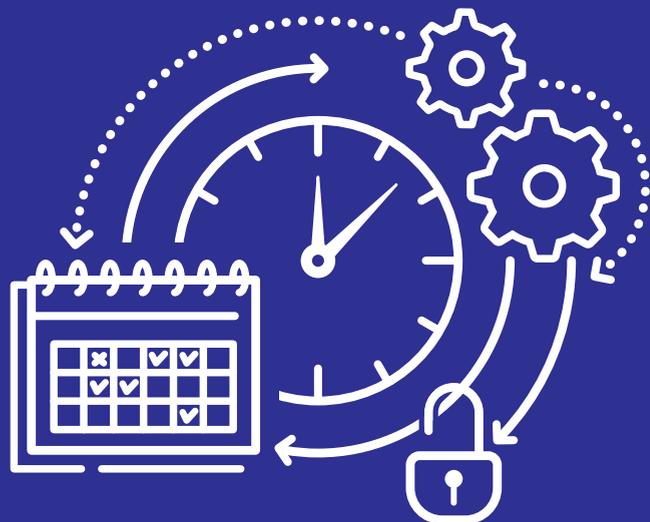
Introduction

Greater flexibility is high on the list of priorities in higher education. A growing number of educational institutions are experimenting with personalised, flexible education in which students can put together their own student paths to suit their learning preferences, pace, learning needs, knowledge and experience.

Flexible education: personalised student paths

Because students work with personalised student paths, it may be that a student's peers in a programme are working on different learning outcomes at a particular time. This is the case, for instance, with the Modular Learning and Own Pace student paths set out in the Acceleration Plan for Educational Innovation with IT. Another consequence of personalised student paths is that the group of students with whom the student is taking a programme may differ per period or module. This is the case with the Own Pace student path.

For more information about the four student paths, please see the Flexibilisation of Education zone.

However, the fact that there is no longer a traditional fixed class or group in flexible education creates challenges in terms of students' social connectedness with each other, the programme and their lecturers. For example, how do you get people to connect so that they trust each other and can create a safe learning environment? COVID-19 created additional challenges when on-campus learning abruptly ceased and education had to take place exclusively online. How do you ensure that people know how to find and reach out to each other in online learning?

Effect of social connectedness on student success

We know from research that social connectedness and learning together have an effect on student success[1,2,3,4,5,6,7,8,9]. That is why – especially with these personalised, flexible student paths – explicit attention must be paid to creating a sense of connectedness between students and between students and the programme, for example by forming learning communities.

Designing a suitable learning community

A learning community, therefore, is a means of stimulating and strengthening social connectedness. But how do you design the most optimal learning community? What aspects do you need to take into account? What can you do as a lecturer and what aspects can you fine-tune? To make this more concrete, we have drawn up design principles based on a literature review and empirical data collection. Seven specific aspects emerged that can be used to shape the online and blended learning community in a way that creates and fosters social connectedness.

Focus on online and blended learning communities in the context of COVID-19

All educational institutions have had to deal with the consequences of the COVID-19 pandemic in the past months. They were forced to switch to (mostly) online learning. The literal distance this created was a major challenge in terms of students' social connectedness with each other and with the study programme. It is against this background that we conducted our research. We therefore chose to focus on online and blended (partly online and partly on-campus) learning communities.

Although on-campus learning will again take place in the future, we expect online learning to remain a structural part of higher education. After all, we have also experienced the benefits of online learning, such as facilitation of more flexible student paths.

These developments highlight the relevance of this publication for promoting social connectedness in online and blended learning communities, specifically in the context of flexible education.

Finally, the use of IT tools has become increasingly common as a result of experiences with online learning. Consequently, these tools are no longer always perceived as innovative or recognised as a 'tool' at all. We believe this is positive, as it means these tools have become an integral part of education. Thus, IT tools have become a means to an end and no longer an end in themselves.

Research question

On the instructions of the Flexibilisation Zone of the Acceleration Plan for Educational Innovation with IT, a group of researchers and professors from The Hague University of Applied Sciences, the Hanze University of Applied Sciences in Groningen, University of Applied Sciences Leiden and Saxion University of Applied Sciences set to work on the following question:

Which design principles can lecturers use to optimise social connectedness in online and blended learning communities of students and lecturers (and professionals in the field) in programmes in which students differ in either learning outcomes or the pace at which they complete the programme and which practices and IT tools are conducive to this?

The research team conducted experiments with the design principles drawn up after the literature review in order to test their effectiveness and practicality. The results of this research have been incorporated into this publication as set out below.

This publication is divided into two parts:
- Part 1: A concrete guide to design principles with examples, working methods and IT (and other) tools which lecturers and teams can use to create social connectedness within their online and blended learning communities in the context of flexible education.
- Part 2: A methodological justification and substantiation of research on which the guide is based as well as a description of the results, ending with a conclusion, discussion and recommendations for further research.

Part 1: Lecturers' guide

This is a guide to support you, the lecturer. We hope this guide will provide you with the information you need and inspiration to take the next step in strengthening social connectedness in your learning community. By way of inspiration, we provide concrete examples, practical tips, possible methods and IT (and other) tools for each design principle.

Reading guide

The guide is based on a literature review and design-oriented research in the context of flexible education. If you would like to read more about the research method and results, please refer to Part 2 of this publication.

- Learning communities can also exist in contexts other than education. That is why, in this guide, we refer to participants and facilitators of learning communities rather than students, professionals and lecturers.
- This guide focuses on flexible, online and blended education. The guide can also be used for learning communities in a non-flexible and on-campus or hybrid context.
- We refer to personalised, flexible student paths when participants of a learning community work on a different learning outcome or when the composition of the participants forming a learning community differs per period or module.

1.1 Seven design principles

Based on a literature review, we identified what is already known about factors that can contribute to social connectedness in online and blended learning communities in the context of flexible education and the associated personalised, flexible student paths. The literature review led to the formulation of seven design principles that can be used to encourage social connectedness:

A. Getting to know each other
B. Trust and cooperation
C. Shared and common goals
D. Willingness to participate
E. Programme and instruction strategies
F. Sharing information and knowledge
G. Resources and preconditions

For each design principle, we provide suggestions for IT (and other) tools where possible, but do not in any way wish to give the impression of being exhaustive. We have endeavoured, where possible, to incorporate IT (and other) tools that are already known and used in educational institutions.

1.2 Diagrammatic representation

We can group the design principles into two categories:

1 Design principles focused on underlined substantive aspects and behavioural aspects of the participants that are important for social connectedness in an online and blended learning community (dark blue cogs).
2 Design principles focused on form and preconditions that can be used when setting up an online and blended learning community (light blue cogs).

Diagrammatic representation as a 'prompting board'

Use the diagrammatic representation of the design principles as a 'prompting board' for discussions with colleagues.

- Discuss how you can collaborate on strengthening social connectedness within the learning community and what design principles you want to work with to achieve this.
- We recommend starting on a small scale using measures within one or two design principles. Bear in mind that all design principles are interrelated and cannot be seen in isolation from each other. Measures can be at the level of several design principles. It may also be the case that the team will have to work on several design principles simultaneously to achieve the desired outcome.
- When deciding which design principles to work on you should bear in mind the target group, context and phase of the learning community. Is the learning community just starting out or has the composition changed recently? Do the participants know each other or not at all? Are the participants starting the programme for the first time or have they already completed some programme components?
- Dare to experiment and discuss with your colleagues and participants how they experience the chosen measure. This will allow you to make adjustments at a later stage if necessary.
- The principles can be tested or rolled out at different times in the learning community.

1.3 Explanations, tips and examples for each design principle

We explain the design principles you can apply, as a lecturer, to promote social connectedness in online and blended learning communities when flexible student paths are involved.

Design principles for social connectedness in online and blended learning communities

Design principles aimed at fostering social connectedness in blended and online learning communities for flexible education were collected through design-oriented research. The seven design principles that emerged this are depicted and elaborated on this prompting board.
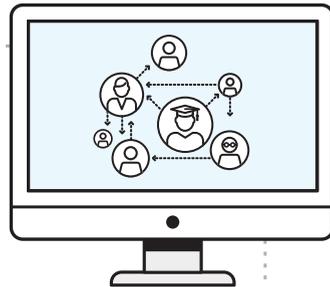
Use the prompting board to encourage discussion with your colleagues and students about how you can work together to strengthen social connectedness in learning communities.

✓ Start small and work with one or two design principles.

✓ Dare to experiment and discuss with the participants how they experience the chosen measure.

✓ When deciding which design principles to work on you should bear in mind the context, target group and phase of the learning community.

✓ Bear in mind that all the design principles are interrelated and that chosen interventions may relate to several design principles.

For a detailed explanation, tips and working methods for each design principle, see the 'Design principles for social connectedness in online and blended learning communities'.

⚙ Substantive aspects and behavioural aspects

⚙ Form and preconditions

Shared and common goals
– Formulate a common goal for the learning community
– Individual goals should be aligned with the common goal

Sharing information and knowledge
– Encourage interaction
– Discuss content with each other

Resources and preconditions
TECHNICAL Knowledge of and access to tools and budget

SUBSTANTIVE Access to relevant network and information sources

Willingness to participate
– Active participation is a prerequisite
– Shared ownership
– Take responsibility for each other's learning process

Trust and cooperation
– Encourage teamwork
– Ensure equal participation
– Create a safe and open atmosphere

Getting to know each other
– Continue to invest time in getting to know each other
– Encourage personal and professional development
– Initiate informal meetings

Programme and instructional strategies
– Group size of 8-10 participants is ideal
– Have participants switch roles
– Organise activities suited to the goals
– Encourage boundary crossing
– Organise peer feedback

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A. Getting to know each other

This design principle is about participants truly getting to know each other. In this way, they lay the foundations for mutual trust and building a good relationship, both between participants and between the facilitator of the learning community and individual participants.

More than getting acquainted

Getting to know each other goes beyond simply getting acquainted. Once participants know more about each other – and therefore know each other better – they get a greater sense of being part of a team[3], which contributes to social connectedness within the learning community. Furthermore, getting to know each other creates room for trust (see also the 'Trust and cooperation' design principle).

Intentionally set aside time

When starting the learning community, it is important to intentionally set aside time to get to know each other better. This is especially important for participants who have to work with varying group compositions, as they are always part of a different learning community. Spending extra time on this can also create social connectedness relatively quickly.

Aspects to consider in 'Getting to know each other' are:

- The frequency and timing of activities and the intensity of interactions. A higher intensity is needed in the initial phase of a learning community than at the end.
- The time you invest in getting to know each other. Ensure that participants continue to learn about each other's backgrounds by exchanging personal details and work experiences, among other things[10].
- Mutual connection and connection with the facilitator. Invite participants to make themselves seen, both personally and professionally, and set a good example. It is important that both the facilitator and the participants get to know each other better[8].
- Informal contact. Initiate or organise personal and informal contact and make sure that participants know how to get in touch with each other.

Example of an IT tool: getting to know each other online

At the time of this research, the learning communities and thus also the introductions took place online. One programme had an online and interactive introduction game where participants had to solve puzzles together in small groups.

The introduction started as a plenary session in Microsoft Teams. Afterwards, groups were formed in breakout rooms. Participants were able to solve the puzzles with the help of an app.

Participants reported that this was a pleasant way to get to know other people in an accessible way and that it made it easier to reach out to them at a later date.

Practical tips and methods:

- Start the learning community informally with informal online activities like an online introduction game, an escape room or a pub quiz. A useful platform for this is, for example, Fizzinity. See also an overview of other methods of online introduction and connectedness produced by the Radboud University.

- Make sure that participants know how to get in touch with each other. First, pay attention to the practical aspect – that participants can get in touch in person, by phone, by email or online. Also make sure that participants speak the same language/are on the same page and therefore know how to reach out to each other. Think about coordinating and using the same terms and words[11].

- Create a 'buddy book' where participants can post a photo and answer questions about themselves, such as 'What is your family composition?' and 'What is your guilty pleasure?' One tool you could use for this is Padlet, but a Word format would also work.

- Facilitate finding a 'buddy'. When you do this with the Core Quadrant Game, participants can decide for themselves whether they want a counter-pole or a like-minded person. The Core Quadrant Game is based on the Core Quadrant theory as described in the book 'Inspiration and Quality in Organisations' by Daniel Ofman[12].

- For some participants, it is difficult to participate in informal activities outside classroom hours, so see if the curriculum offers time to organise an informal activity. Another option

is to schedule a drop-in coffee hour (online or offline) before or after a class which participants can join when they feel like it.

- Start each session of the learning community with a short check-in and finish with a check-out: how are you all today? In online sessions, participants can use emoticons to express how they are feeling, for example. Participants can talk about this if they wish. You can find more tips and inspiration below: How to enter a virtual classroom or meeting? 15 ways to check-in online with students or colleagues.

- Halfway through the learning community session, you can hold a quiz with personal questions and facts to get to know each other better. You can use Kahoot to make the quiz. Ask participants to give you some personal details you can process in the quiz.

- Use non-standard questions to get to know each other better. Tools you draw inspiration from include: Check-in Generator and Icebreaker Questions that Won't Make You Want to Poke Your Eyes Out.

B. Trust and cooperation

Trust and the willingness to cooperate with each other are essential for a well-functioning learning community[4]. Both aspects therefore deserve explicit attention[8].

Trust through a safe and welcoming atmosphere

Getting to know each other better is essential for trust and cooperation 'Getting to know each other'design principle). It is also important to create a safe and welcoming atmosphere, as this allows the participants of the learning community to be open to each other[13], which promotes active learning[3,5].

A safe and welcoming atmosphere provides a sound basis for participants to respect each other and each other's contributions[9,14,15]. Going forward, it is essential to maintain this atmosphere; this requires ongoing attention at group level to both mutual relationships and the way people communicate with each other[16].

Collaboration through reciprocity

In addition to fostering trust in each other, good cooperation within the learning community also affords room to be able and willing to learn from and with each other, to help and support each other and to divide tasks based on the knowledge and skills to be acquired and the talents and affinities in the group[7]. This reciprocity fosters interaction and thus collaboration between participants of the learning community[17].

Encouraging focused *teamwork*[3] and equal participation by all participants of the learning community[18] are conducive to this collaboration. Once these aspects are embedded in the learning community, they form a solid basis for further collaboration. At the same time, it is also essential to pay explicit attention to individual interests in the collaboration[16].

New and established learning communities

If you are a facilitator of a learning community where participants follow their own student path (and are therefore together for a relatively short period of time in varying compositions or are all working on a different learning outcome), it is important to regularly devote time and attention to creating trust and a safe and welcoming atmosphere[19]. For established learning communities, it is especially important to continue to work in creative and stimulating ways on mutual trust, atmosphere and collaboration.

Example of an IT tool: Journalling

Journalling is a method that can be used to collect participants' experiences, thoughts, feelings and ideas and share them with each other. This method allows participants to reflect independently, on the basis of a number of auxiliary questions, on how they experience trust and cooperation within the learning community and share this with the other participants.

If you are holding an online session, after explaining what they will be doing and why, ask participants to turn off their camera and sound for privacy and focus. After the session, the participants can go to separate breakout rooms to share, in assigned pairs, the outcome of the reflection.

This gives participants an idea of what the other person's expectations are and what this means for their own role as well as the other person's role within the learning community.

Practical tips and methods:

- Sharing personal experiences fosters empathy and mutual understanding. It is therefore important to provide a safe environment where participants can share their experiences, for example about their current assignment, module, internship or research. You can set up a forum or message board for this purpose in the digital learning environment. It is also possible to use a peer-review method, for instance one of the 27 detailed methods in Praktijkboek Intervisie (in Dutch).

- Collaboration between participants of a learning community can take place at many levels. Consider, for example, working on shared themes and helping each other by responding to requests for help. For this to work, it is important that participants can find and communicate with each other easily and conveniently. An online platform, message board or your own Microsoft Teams channel can facilitate this.

- Collect propositions and possible agreements that can strengthen trust and mutual cooperation. During a session, have participants respond to a statement or agreement by holding up a coloured object: green means 'agree', red means 'disagree' and yellow means 'have doubts'. Give the floor to the 'yellow' participants and help clear up their doubts. Ask them to choose a colour again. Then give the floor to the 'red' participants so that they can explain their choice. Conclude the session by stating how the input gathered might be used.

- Make clear working arrangements with the participants. Make sure the agreements made can be retrieved centrally and refer to them for the duration of the learning community. This ensures equal participation in the learning community by all participants and makes them co owners of the learning community. For more information see the 'Willingness to participate' design principle.

- Provide scope for using the professional knowledge, skills and affinities of individual participants. You could ask an individual participant to specifically suggest challenging plans and ideas in relation to the learning community, for instance. Have the participant post this on a forum or message board in the digital learning environment and ask the other participants how they might help on the basis of their own expertise and talents.

C. Shared and common goals

To give direction and relevance to a learning community, it is important that its goals are clear and that these goals matter to the participants. There must therefore be a shared and common goal to work towards and which the participants are willing to commit to[20,3,4,13,8].

Learning as a goal

Learning is always the focus of a learning community. The shared and common goals must therefore contribute to a participant's learning process[1,4,8,19]. Conversely, it is also important that the individual goals of the participants are well aligned to the shared and common goals of the learning community[21,13]. This can be a challenge in a learning community where participants are following their own student path and are therefore working on different learning outcomes.

As a facilitator, you therefore play an active role in formulating the goals for the learning community. In doing so, you can include the following insights:

- It is important to clearly establish the goals of the learning community and the individual goals of the participants[10], especially when the participants are all working on different learning outcomes.

- The goals discussed may relate to different educational objectives: qualification, socialisation and personalisation[22]. A different focus can be chosen for each learning community, in line with the participants' needs.

- You yourself can set the goals of the learning community, or have the participants set them themselves based on their questions and needs. Keep in mind that these needs may change in response to developments within and outside the learning community, especially when learning communities exist over a longer period of time. The goals can be adapted to the changing needs as desired[1,20].

- Where one or more goals are predicated on mutual interaction and interdependence, this can have a positive effect on participants' willingness to support each other and the extent to which they experience meaningful collaboration[8,17]. See also the 'Willingness to participate' design principle.

- Once the goals are clear, it should also be made explicit how the learning community intends to achieve them. The planned activities must of course match the goals. You can read more about this in the 'Programme and instructional strategies' design principle[13,8]. This can, in an educational context, be a group activity or an individual activity, such as graduation or other large individual projects in the educational programme[19]. The latter is often the case in learning communities where participants work on different learning outcomes.

Example of an IT tool: Coaching groups

A university of applied sciences works with learning communities in which the participants each follow a different student path. Within these coaching groups, participants do not work on a joint product; instead, shared goals are important to create and maintain social connectedness.

For the facilitators of these learning communities, the university has therefore drawn up a set of instructions which includes an overview of common themes which they can use to achieve shared goals. Overarching themes include, for example, study skills and professional career development, or social issues and innovations in the field.

The goals facilitators can agree on with their participants include, for example:
– acquiring the necessary skills for studying at a university of applied sciences;
– combining their studies with work and private life;
– using the environment of their work practice as a valuable learning environment;
– making use of the free choice option programme;
– completing the graduation phase;
– learning how to reflect and using tools of reflection;
– gaining insight into themselves as people and professionals (talents, motives, convictions, ambitions);
– learning how to network;
– following and reflecting on trends and developments in the professional field;
– contributing to the professional field;
– lifelong development.

Practical tips and methods:

- Put the goals of the learning community on the agenda and discuss them with the participants, even if they seem largely clear or obvious beforehand. This is not always the case, especially when participants of a learning community are working on different learning outcomes.

- Does the fact that participants work on different learning outcomes mean that the learning community is not delivering a group product? Consider general goals and activities that are of added value to all participants You can also seek opportunities for mutual interaction and interdependence by using and exploiting each other's expertise.

- If a learning community exists for a longer period of time, it is advisable to review the relevance of the goals with the participants and adjust them collectively where necessary.

- Ask participants about the goals they hope to achieve by participating in the learning community. Try to find a common question or need, or find out what the common denominator of the individual goals is. Do the participants require peer-to-peer review, feedback and sparring partners or do they have more practical needs? By sharing these needs with each other, expectations are articulated and concrete goals can be formulated that match the participants' real needs.

- Have participants actively provide input for the formulation of shared goals. Several online tools are available for this, where participants can post their own ideas and vote on propositions, for example. Examples are Miro, Padlet and Google Jamboard. You can also use the features of educational applications such as an online whiteboard or create a poll in Microsoft Teams or Blackboard Collaborate.

- Participants who have just started a programme may still find it difficult to formulate substantive objectives focused on the profession or their own professional development. It is a often a period in which they are still preoccupied with practical matters and trying to find out what is expected of them in terms of level and study skills. As a facilitator, you can initially take on the role of a coach, guiding the participants step-by-step through the process of formulating goals. After a while, you can put the goals on the agenda again to ask whether they still correspond to the participants' wishes and expectations and whether new goals have in the meantime arisen.

D. Willingness to participate

For a learning community to flourish, it is important that the participants are willing to participate and feel involved and committed to the learning community.

You can recognise their willingness to participate by the following:
- Participants identify with and feel at home in the group[14,9,16];
- Participants take the initiative to pursue the shared goals;
- Participants take responsibility for each other's learning process;
- Participants actively contribute to the learning community or are encouraged to do so[7] from a sense of co-ownership[13].

Facilitate, activate and stimulate

By taking a facilitating, activating and encouraging role you can, as a facilitator, encourage the participants to participate in various ways. You can encourage the participants to take part in a discussion or help them develop or create materials, for example[x]. However, in the long term the initiative for this should ideally come from the participants themselves, as it is ultimately they who create a successful learning community.

For a participant to be able to commit to the learning community, it is also important that the objectives of the learning community are clear and relevant. See also the 'Shared and common goals' design principle.

Example of an IT tool: Participants put together their own programme

Participants taking a minor will build their own network with substantive resources. They do this by organising their own guest lectures and workshops on topics they personally find relevant or that are relevant to their research or assignment. By taking the initiative to organise guest lectures and workshops, participants actively contribute to the learning community and share responsibility for each other's learning process.

Practical tips and methods:

- Have participants explicitly commit themselves to the goals of the learning community. See also the 'Shared and common goals' design principle. You can do this, for example, by recording the goals in a joint mission statement and having it signed by the participants. In this way, you make them aware of their individual roles and create more ownership of the learning community. Sample questions to help you prepare a mission statement include:
  – What is the raison d'être of this learning community?
  – What is the significance of this learning community in the programme and the learning process of the individual participants?
  – What do you find only in this learning community and nowhere else?

- Draw up joint agreements for communication and collaboration within the learning community. A format for these 'house rules' can be found in the Template guidelines of the University of Leiden. These agreements can also be formalised by having the participants sign them as a type of contract. In this way, the participants can call each other to account when agreements are not honoured.

- Actively invite participants to participate in discussions (online or offline) in the learning community. As a facilitator, you can get the discussion going and keep it going by, for example, discussing propositions or dilemmas. You can also respond yourself or invite other participants to respond. This can be done both during in-person meetings and online with the help of tools such as an online poll or an online whiteboard, e.g. Mentimeter and Miro.

- Ensure that participants perform actions that are beneficial to the learning community, such as collecting and sharing relevant materials. As a facilitator, explicitly express your appreciation for this to encourage others to do the same.

- See if you can increase the participants' interdependence so that individual participants feel called upon to contribute. This can be done through peer feedback, for example. See the 'Programme and instructional strategies' design principle.

- Set up smaller groups in which participants can work together for a certain period of time. Regularly check how the groups are performing and whether they need to be rearranged: not all participants will always be equally active. Take a leading role in this as a facilitator.

- Encourage active participation by having participants take on rotating roles. You can divide the roles of chairperson, timekeeper, record-keeper and Head of Fun (responsible for energizers) among different participants for each meeting, for example. See if you can allocate the roles according to the participants' own talents and learning needs[11].

E. *Programme and instructional strategies*

A well-designed programme of activities and appropriate instructional strategies can contribute to the success of the learning community. This is where you, as a facilitator, have an important guiding and coaching role.

Personalisation

When drawing up the programme and the instructional strategies, it is therefore important to carefully consider the characteristics of the target group and to adjust them accordingly. This is because participants who are all working on different learning outcomes require a different approach than participants who are working on the same learning outcome but who come together for a short period of time and in varying compositions.

Finding the right balance

Ultimately, a learning community's success depends on the commitment of its participants. That is why it is important to find the right balance between coaching and 'letting things happen' and between imposing activities and letting the participants decide for themselves how to interpret them. In learning communities for flexible education, a facilitative instructional strategy is a particularly relevant aspect. Although the facilitator supports the learning community, the participants themselves generally take the lead.

Whatever balance or strategy you choose, it is important that the instructional strategy leads to shared group learning that challenges and encourages participants to discuss and reflect on relevant topics[7,18].

As a facilitator, you can ensure:

- **A clear structure**: schedule regular meetings and work with an agenda for each meeting[10]. This agenda can be drawn up by the participants themselves or you can do it together. Also make sure that the purpose of each meeting is clear to all participants and what preparation and input is expected from them.
- **Activities suited to the goals**: propose or organise activities that are in line with the goals of the learning community[13]. If the learning community is focused on a specific topic or content – because participants are all working on the same learning outcome – it can invite guest speakers, for example. And for participants who are all working towards a different learning outcome, a method of allowing participants to give feedback on each other's learning can be organised.
- **A proper start (in-person or online) begins with online learning or collaboration**: see the 'Getting to know each other' design principle. In any case, make sure that the participants know what the start entails and what preparations they may need to make[5].
- **Suitable group size**: the size of the group has an impact on the a learning community's success. Literature and various practical examples suggest that a group size of 8 to 10 participants is ideal for a learning community[4].
- **Critical reflection on situations in practice**: this applies to learning communities where the participants are working towards the same learning outcome. As a facilitator, you can then provide a critical reflection on situations from the participant's study or work practice[13]. Recognising and reflecting on each other's stories creates a sense of community, which in turn contributes to the success of a learning community.
- **Organising *boundary crossing***: boundaries are also determined by socio-cultural differences between participants and may give rise to barriers in interaction and action. However, when a boundary is experienced, there is also room for learning as a participant becomes acquainted with new insights when crossing that boundary. As a facilitator, you can therefore encourage and enhance the process of exploring socio-cultural boundaries and exchanging expertise[19]. In boundary crossing with other programmes, participants experience that the dynamics and connection with the participants from their own programme also changes and strengthens. One of the reasons for this is that they learn to share more readily and often with each other how group collaboration is progressing.
- **Actively organising peer feedback**: with peer feedback, a participant gets feedback from a peer. Research shows that participants learn at least as much from this feedback as from expert feedback because they look at feedback from peers more critically[23]. Peer feedback can lead to 'deeper learning' and therefore be a valuable activity within a learning community.
- **Challenge participants in their learning process**: ask open-ended questions as much as possible and give participants the room to ask open-ended questions themselves. Give participants their own responsibility and inspire confidence[2].

Example of an IT tool: Boundary crossing

In the 'Thinking outside the box' honours minor, students from different programmes work on an individual assignment. Together with 15 to 17 other students, they form a learning community within the minor.

Part of each assignment is to choose a book the individual participants will use for their own research. A subgroup of five participants then discusses what the common denominator is in the research and literature used, which requires participants to delve into each other's topics. The subgroup jointly presents the common denominator to the other participants of the learning community.

Practical tips and methods:

- Prepare an action plan for your learning community's activities, considering the target group, purpose, design, risks and platform choice. For an example, see the Action plan of Leiden University template (in Dutch).

- Organise peer feedback. Before giving feedback, provide instructions on how to give good feedback. You can find more information about these instructions on the SURF website. One of the tools you can use for feedback is FeedbackFruits.

- Encourage boundary crossing by organising guest lectures or workshops together with professionals in the field. Alternatively, you can have participants work on an assignment together from different perspectives and/or programmes, possibly with the aim of delivering an end product together. For tips, see 'How do you teach students interdisciplinary thinking'.

- Organise 360-degree feedback among the participants of the learning community. In the learning community, first discuss which components are important, such as cooperation, dealing with feedback and acting responsibly. Based on this discussion, you can put together a 360-degree feedback form, such as this one by Kessels en Smit (in Dutch).

F. Sharing information and knowledge

In practice, sharing information and knowledge is about sharing experiences and learning materials[13]. This promotes interaction within the learning community, both from the perspective of performing tasks and of social interaction[4]. Discussing information and knowledge with each other encourages active learning and promotes the deepening of knowledge and social bonds.

Specific content

What exactly is shared in terms of information and knowledge also depends on the objective of the learning community and how it works together. Encourage participants to share information and knowledge related to a specific topic or theme[10]. This promotes interaction and discussion among the participants of the learning community, which can lead to a deeper understanding of the specific topic or theme[3].

The initial phase of a learning community involves intensive interaction. In this phase, sharing information and knowledge is necessary to foster social connectedness, among other things[7]. It can lead to shared emotional attachment – see also the 'Willingness to participate' design principle – and better mutual relationships[14,9,15]. It also ensures that participants know how to reach each other because they speak the same language when sharing information and knowledge[17].

Suitable form

Sharing information and knowledge should take place in a suitable manner. It must appeal to the imagination and take shape in varied ways so that participation in the learning community is attractive to the participants.

One way of doing this is by using the participants' expertise: by sharing and discussing everyone's expertise, the participant of the learning community learns from their own activities as well as those of others[1]. Sharing this individual knowledge and expertise – which is basically private property – actually promotes social interaction. It does so by creating a culture in which participants support each other in solving problems and seeking new challenges, and it promotes reciprocity. In this way, the sharing of expertise can also enhance the aim of the learning community[21].

Active and encouraging role

Finally, sharing knowledge and information can help participants to look beyond their own boundaries. As this often requires an active and supportive role from you as the facilitator of the learning community[19], it is useful to follow the practical tips and methods explained below.

Example of an IT tool: The World Café

The World Café is a method that can be used to have participants work in subgroups – physically or in online breakout rooms – on an issue 'that matters'. The World Café involves different rounds with varying compositions in order to get to work on an issue 'that matters'. The host of the meeting ensures that the participants of a session write down their ideas and suggestions, for example, on a Jamboard. In a subsequent session, the host shares the results with the new participants and they add to the results based on their own experience. After several rounds, the subgroups share the findings in the form of new information, knowledge and insights.

You can find more information about the method here: The World Café method.

Practical tips and methods:

- Invite participants to briefly talk about a challenge they have worked on (possibly with others) and of which they are proud. Ask the participant who has the floor to explain the context and the success factors. Then have the participants interview each other in pairs for further exploration of the issues. In groups of four, each participant then tells the story of the interview partner. The collected insights and patterns are noted on an online whiteboard, for example Jamboard or Miro.

- Organise a peer review in which all participants formulate what they need from others in order to achieve a specific goal. Then have the participants break out into groups of four, with one participant asking their question (1 min.), two others asking clarifying questions (2 min.) and all participants then offering ideas, suggestions, coaching and advice (5 min.). Finally, the participant shares their most valuable insights (2 min.). Then switch roles and start again so that every participant gets a chance to ask their question.

- Use the 'Open Space' method to allow everyone to contribute to specific themes or topics. In an Open Space session, 10 to 1000 participants can work together to find a solution to a problem or discuss a complex issue.

  Open Space has one principal rule: the Rule of Two Feet. This means that: '*If people find, during the meeting, that they are not learning or contributing anything in a particular situation, they should use their two feet to move to a more productive place.*'

There are also four basic rules and beliefs:
- The people attending are the right people;
- Whatever happens is the only thing that could have happened;
- The starting time is always the right time;
- When it's done, it's done.

How it works: you invite participants to work together on the agenda for a session on one or more topics they are passionate about. Start with a marketplace where participants can propose and pitch topics.
The final sessions are coordinated by the facilitator of the learning community. Participants can take part in the session in two roles: as a butterfly (relaxed, thinks about the topics, new ideas can arise) or as a bumblebee (cross-pollination of knowledge by 'flying' from topic to topic). This allows participants to choose which role suits them best and which knowledge and information they can and want to share.

You can find more information about this on the website of the website van de Agile Scrum Group.

G. Resources and preconditions
To be able to learn effectively with and from each other in a learning community, it is important that the participants have the necessary substantive resources at their disposal and that the right technical and organisational preconditions are met.

Substantive resources
For the learning community to function well, it is essential for the learning community to have relevant knowledge, appropriate to the shared goal. If this knowledge is not yet available, it will have to be obtained from outside the learning community. As a facilitator, you can play a key role in this by tapping into relevant contacts in the field or other external sources of information. If the learning community has existed for a long time (in the same composition), it is especially important to continue to acquire new knowledge[7,18,13].

Technical and organisational preconditions
To be able to interact and cooperate effectively within the learning community, communication tools are essential. This is especially true when the learning community is partly or fully organised online. Participants must therefore be able to reach each other with these communication tools, both for social interaction and for exchanging information and sharing knowledge.

As a facilitator, you can organise this by:
- Establishing a structure for communication (see practical tips and methods);
- Providing communication tools;
- Making agreements with the participants on how to use these tools and guiding them in this process[20,21,2,18,8,7,17].

Where appropriate, the learning community should also have access to suitable physical locations and an adequate budget[7,17]. Whether this is relevant depends on how the learning community is organised and the type of learning activities that correspond to the set goals. It will therefore vary greatly from one learning community to another.

Example of an IT tool: Digital buddy book

Participants of a learning community at a university of applied sciences developed a digital group book via Padlet. Participants were explicitly asked whether their email address and/or telephone number could be shared with the other participants of the learning community.

This digital buddy book has become an important source of information for the students. It gives them the opportunity to connect on the basis of geographical proximity or having a professional connection (working for the same or a similar organisation). Another important source of information is the app group which is set up for each programme year.

Practical tips and methods:

- As a facilitator, you will obviously have your own network and access to relevant information sources, but make sure you do not forget the participants' network. This applies in particular to participants who are already working professionally.

- Explore the interactive (and other) communication tools within the digital learning environment used at your educational institution. Options include a discussion forum, digital notice board, chat, digital whiteboard, group email function, online meeting space, file sharing and announcements. As a facilitator, make sure you have the skills to use these tools properly.

- Establish a basic structure for communication and encourage interaction. Consider, for instance, a subdivision into themes on a forum, notice board or file-sharing environment. An app group is also a possibility, but make sure that the participants are comfortable with this.

- Agree with the participants on how to communicate within the learning community. This 'netiquette' – a combination of the words 'network' and 'etiquette' – includes guidelines and rules of conduct for using the internet and communicating online.

- Ask participants not to send their questions by email but to post them on a digital forum or notice board. This way, you avoid having to answer the same questions several times and participants can learn from each other's questions or even answer them for each other.

- Exchange the participants' email addresses and, if desired, also their telephone numbers.

- If the learning community meets physically, provide a suitable room.

Part 2: Methodological substantiation

To answer the research question about social connectedness in online and blended learning communities and to be able to prepare the practical guide for lecturers, both theoretical and empirical data was collected in a number of ways. This part of the publication provides a justification for the research method, discusses the results and presents the conclusion and discussion.

2.1 Method

For this publication, design-based research was carried out into the educational practice of higher vocational education in the context of flexible education. To substantiate the design and implementation of the research, first the research question and key concepts are defined. This is followed by clarification of the experiment conducted, the literature review and good practices. Finally, the research instruments are discussed.

Research question

This research revolves around the following research question:

What design principles can lecturers use to optimise social connectedness in online and blended learning communities of students and lecturers (and professionals in the field) in programmes in which students differ in terms of learning outcomes or the pace at which they go through the curriculum, and what practices and IT (and other) tools can be of use?

Definition of key terms

Sociale binding

The concept of 'sense of community' as described by McMillan and Chavis (1986)[14] was taken as a starting point in defining social connectedness in this context:

'Social connectedness as a feeling that participants have of belonging to a learning community, a feeling that participants matter to one another and to the group, and a shared faith that participants' needs will be met through their commitment to be together.'
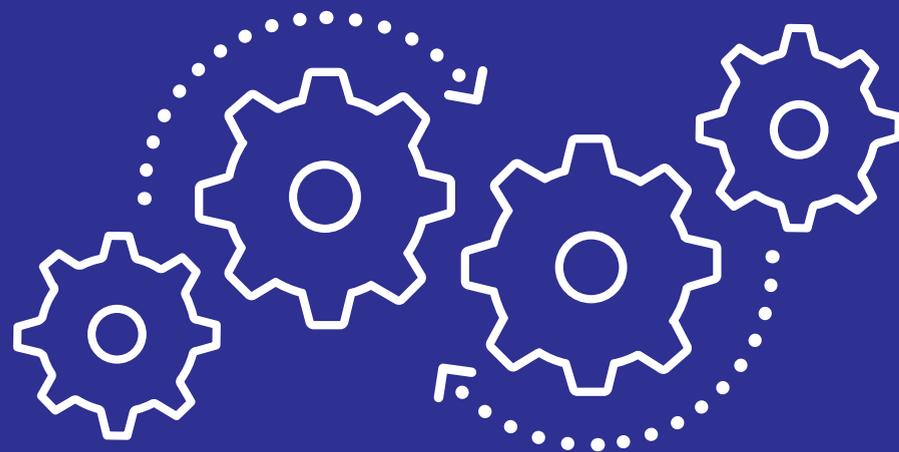
The concept of social connectedness in the educational context can be broken down into two underlying dimensions[24]:

- **Social connectedness**: The feeling that participants have regarding drive, cohesion, trust, safety, reciprocity and interdependence in the learning community and their sense of community.
- **Interactive learning**: The feeling participants of a learning community have regarding the extent to which there are shared group values and norms and the extent to which their learning goals and expectations are met by being part of the learning community.

Learning community

In the context of this project, a learning community can be defined as:

A group of students and lecturers (and professionals in the field) who actively collaborate using IT tools with the aim of learning and promoting knowledge creation, based on shared values and practices[8]. Learning communities may vary in terms of goals and contexts, but they always focus on collaborative learning, research and innovation[19].

Literature review

We conducted a literature review to identify what is known about factors that contribute to social connectedness in online and blended learning communities in the context of flexible education.

Origin of sources

The researchers were already familiar with some of the sources for this literature review from previous research on related topics. New sources were also obtained through a literature search in databases for academic literature, including Google Scholar. In some cases, Google Scholar provided links to other databases where the full-text version could be accessed. The search was based on combinations of key concepts from the research question and the snowball method (cited publications).

Factors associated with social connectedness in a learning community were identified for each source. Where possible, this was carried out in the context of flexible education. Subsequently, the findings from all individual sources were compared, which resulted in seven clusters of points of interest. On the basis of the above, the team formulated the following seven design principles:

Design principles focused on substantive aspects and behavioural aspects:
A. Getting to know each other
B. Trust and cooperation
C. Shared and common goals
D. Willingness to participate

Design principles focused on form and more peripheral aspects:
E. Programme and instructional strategies
F. Sharing information and knowledge
G. Resources and preconditions

These design principles– see page 16 for a visual representation – are the basis for the lecturers' guide. This guide explains the principles in more detail and provides examples and practical tips and tools.

Good practices

In supplementation of the findings from the literature review, good practices from the field of practice of four educational institutions involved in the research were identified: The Hague University of Applied Sciences, Hanze University of Applied Sciences, Leiden University of Applied Sciences and Saxion University of Applied Sciences. To this end, the researchers' networks were used to look specifically for examples of measures that had been successful in promoting social connectedness in online and blended learning communities. In addition, good practices were sought outside the educational institutions involved by attending webinars and reading professional publications on the subject.

Experiments

To explore and test the applicability and practicality of the design principles, a number of lecturers were approached to take part in the research. They were asked to experiment with one or more of the design principles from their learning community, in four sessions as outlined below.

Learning communities taking part in the experiment

The lecturers are affiliated with eight programmes of four participating universities of applied sciences: see the table below. Each lecturer chose the learning community with which they would participate in the research. As a result, the participants in the experiment ranged from a learning community with participants with individual student paths who followed a module together during the period of the experiment to a learning community with participants who followed different modules at different times but who were part of the same learning community throughout their studies.

The experiments were conducted in semester 2/quartile 3/period 3 of the 2020-2021 academic year.

Educational institution	Programme	Variant
University of Applied Sciences Leiden	Teacher Training programme in Social Skills, Health Care & Welfare	Part-time
	AD (Associate Degree) Management in Care	Dual
Saxion University of Applied Sciences	Nursing (coaching group)	Part-time
	AD in Management (coaching group)	Part-time
Hanze University of Applied Sciences	Nursing	Full-time
	Management in Care	Full-time
The Hague University of Applied Sciences	Teacher Training	Part-time
	Nutrition and Dietetics	Part-time

Learning communities participating in the experiment

Design and approach

An evaluative and design-based approach was used for the experiments. This involved four sessions in which the lecturers and a number of students, assisted by the researchers, went through a design cycle. The result is an experiment consisting of one or more measures, working methods and IT tools aimed at strengthening social connectedness in a learning community in the context of flexible education.

The sessions were organised, per educational institution, online in Microsoft Teams and were led by the researcher associated with the relevant institution. A second researcher was always present to write up a report of the session and to record data for the research. A recording was also made of each session as a backup. Before the first session was held, the participants in the sessions received and completed an informed consent form.

Four sessions to prepare an action plan

During four sessions, the participants worked on action plans (per educational institution) to stimulate social connectedness in the learning community. The researchers always made a suggestion based on the previous session, after which the learning community contributed their own ideas. The definitive action plans can be found in Appendix 1.

Session 1: Identifying the current state of affairs and the desired situation
The first session served to explore what was already being undertaken in terms of social connectedness within the learning community: which measures, methods and IT tools are already available? Aspects lecturers and students were already satisfied with in this context were also discussed. The participants then discussed and clarified their satisfaction with specific measures or methods. This was done on the basis of several components: the original design, the method of organisation and how the measure was carried out.

After identifying the current situation, participants were asked what the desired situation looked like for them and which positive experiences from the past they could draw on. Based on these aspects, a 'How?' question was formulated relating to social connectedness in their online and blended learning community. This question served as the starting point for the design process in the second session.

Session 2: Designing the desired situation and preparing an action plan
In the second session, the participants chose which of the seven design principles they wanted to work with to answer the 'How?' question from session 1. The participants also brainstormed about which measures, work forms and IT tools could be used.

At the end of the session, the participants prepared action plans in two groups. In these action plans, they recorded which design principles they wished to work with, which measures, work forms and IT tools they intended to use and when this was to take place. The participants of the two groups presented these action plans to each other and provided mutual feedback.

Session 3: Interim evaluation and fine-tuning of the design
The third session took place halfway through the experiment. The theme of this session was an interim evaluation of the action plans and any required fine-tuning of the proposed measures, methods and IT tools. During the session, the participants shared their experiences and results achieved thus far. They also considered the possibilities of strengthening social connectedness in the learning community.

On the basis of this evaluation, the intended measures, methods and IT tools for the second half of the experiment were adjusted where necessary.

Session 4: Recap and evaluation
In the fourth and final session, the participants presented the experiments to each other. They focused on the target group, the chosen design principles, the measures, methods and IT tools used and the role of the lecturer and students. The participants also explained

how they had experienced the experiment and which measures, work forms and IT tools they would keep but also what they would do differently. The design process itself in the four sessions was also evaluated.

Analysis of the data

The design principles provided the framework for the analysis of the data from these sessions – that is, the reports made during the sessions and the action plans that were prepared. The recordings were only consulted when there was doubt about what exactly had been said and it had not been possible to write this down properly during the session. In respect of the data, specific attention was paid to which input from the participants confirmed or added something to the design principles that had already been elaborated conceptually.

Research tools

In addition to the findings from the experiments, a questionnaire and group interviews were used to collect data on the effectiveness and usefulness of the design principles and the measures, methods and IT tools used. This provided more insight into how the participating students experienced social connectedness in the learning community.

Questionnaire

A largely quantitative questionnaire was sent twice – in the form of a preliminary survey and a follow-up survey – to all students of the participating learning communities. See Appendix 2 for the full questionnaire.

Contents of the questionnaire

An existing questionnaire for measuring social connectedness in the educational context was used[4, 25]. This questionnaire consists of two scales – sense of community and interactive learning. Because the literature review identified mutual trust as a third important pillar and condition for social connectedness, additional statements were added to measure mutual trust within the learning community. These items are taken from the questionnaire on reciprocal behaviour in learning networks by Zuidersma (2012)[xi].

All questions on closed items could be answered on a five-point Likert scale from 'totally disagree' to 'totally agree'. There was also a limited number of open questions in which respondents could clarify explain their completed scores.

Additions to the follow-up survey

AA number of statements and open questions focused on the design of the measures, the work formats and the IT tools used in the experiments were added to the follow-up survey.

These items focus mainly on the design principles of 'Getting to know each other', 'Shared and common goals' and 'Willingness to participate'. The reason this focus was chosen was that it became clear from sessions 2 and 3 that all the experiments were based mainly on these design principles.

Timing and distribution

The questionnaire was distributed online via the Enalyzer programme of Hanze University of Applied Sciences. The link to this questionnaire was distributed via the lecturers involved with the experiments. The preliminary survey was conducted at the start of the experiment, the beginning of semester 2/quartile 3/period 3 of the 2020-2021 academic year. The follow-up survey was conducted in the weeks immediately following the end of the experiments. After completion of the follow-up survey, the results of both the preliminary survey and follow-up survey were exported and analysed.

Analysis of the data

The quantitative data analysis was carried out in SPSS. For this purpose, the negatively formulated items were first recoded. The reliability of the scales was checked by means of Cronbach's alpha. A t-test for independent samples was used to determine whether there were significant differences between the preliminary survey and follow-up survey at both scale and item level.

It was then examined, broken down by learning community, whether there were significant differences between the preliminary survey and follow-up survey. Due to the limited scope of these surveys, the Mann-Whitney U test was applied. The items related to the design of the measure, work method or IT tool were only surveyed in the follow-up survey and are illustrated by means of descriptive statistics.

Arranging the data

To analyse the answers to the open questions, the data was first arranged by summarising the answers in labels (open coding) and then combining synonyms. Colour coding was used to indicate the relevance and focus of the answers. This makes it possible to distinguish between points for attention, neutral statements, positive experiences, suggestions for improvement aimed at social connectedness and suggestions for improvement aimed at the questionnaire.

Where the answers refer to the use of specific measures, methods or IT tools, the number of times this measure or tool has been mentioned by the respondents was counted. Finally, the answers to the open questions were, where possible, linked to the design principles they relate to and incorporated into the guide.

Group interviews

Uit iedere leergemeenschap zijn twee à drie studenten die niet participeerden in de sessies, gevraagd om deel te nemen aan een groepsinterview. Op deze manier kon er ook een beeld worden verkregen van de ervaringen van studenten die niet direct betrokken waren bij het ontwerp van het experiment. Ook hadden de onderzoekers op deze manier de gelegenheid om door te vragen.

Design and approach

In a semi-structured group interview (see Appendix 3 for the guidelines), the students were asked about the social connectedness they experienced in the learning community during the experiment and the aspects that made a difference to them. Further questions were asked about the measures, teaching methods and IT tools used by the lecturer and a picture was formed of how the students view these in relation to the social connectedness in their learning community.

The group interviews were held, per educational institution, online via Microsoft Teams and were led by two researchers in a similar way to the design sessions. A recording was also made of each interview as a backup. Before the interview was held, those taking part in the interview received and completed an informed consent form.

Analysis of the data

The design principles provided the framework for the analysis of the data from the group interviews – that is, the report made during the interview. The interview recordings were only consulted when there was doubt about what exactly had been said and it had not been possible to write this down properly during the interview. In respect of the interview data, specific attention was paid to which input from the interviewed students confirmed or added something to the design principles that had already been elaborated conceptually.

2.2 Results

The research results are outlined below. For specific and relevant points of attention and recommendations arising from the data in relation to the design principles and the research question, please refer to the lecturer's guide in Part 1 of this publication.

Quantitative results of the questionnaire

The preliminary survey had a response of 87 and the follow-up survey a response of 54. All three scales of the questionnaire are sufficiently reliable ($\alpha \geq .769$). The t-test shows no significant differences between the preliminary survey and the follow-up survey at scale level.

Scale	M preliminary survey	M	t	df	p
follow-up survey	t	df	p	93	.68
Sense of connectedness	3.26	3.21	41	93	68
Interactive learning	3.62	3.64	-.25	139	81
Mutual trust (reciprocal behaviour)	3.71	3.61	1.19	139	24

Quantitative results of the questionnaire

Results at item level

At item level, there is one item that scores significantly higher in the follow-up survey than in the preliminary survey: 'I only learn superficially in this learning community' ($t = -2.22$; df = 139; p = .03). The fact that the score on this negatively formulated item has been recoded means that respondents in the follow-up measurement indicated that they learn more intensively in the learning community than in the preliminary survey.

Results at the level of the learning community

When the results are broken down by learning community, the Mann-Whitney U test shows that there is a significant increase within one group on the 'interactive learning' scale ($U = 83.50$; p = .04). The items on the design score on average between 3.13 and 3.41 with a relatively large spread between .94 and 1.14.

Qualitative results of the questionnaire

Both in the preliminary survey and the follow-up survey, open questions were asked (see Appendix 2) in which respondents could share their experiences with social connectedness in their own learning community. In addition, an evaluation session and a group interview took place for each educational institution. Below is an explanation of the analysis of these qualitative results.

Preliminary survey

Online education and social connectedness

The preliminary survey showed that respondents felt they were missing out on not being able to meet each other physically. This has a negative impact on design principles like 'Getting to know each other', 'Trust and cooperation', 'Willingness to participate' and working towards 'Shared and common goals'. Respondents expect on-campus learning to contribute to their sense of community. However, there are also participants who see the advantages of meeting online, such as the ease of organising meetings online and the time saved.

Aspects that foster online learning and social connectedness
Respondents mentioned a number of concrete aspects they experienced as positive in relation to social connectedness, namely having a shared group app, well-functioning coaching groups and lecturers who were closely involved in the learning community.

Aspects that impede online learning and social connectedness
Aspects respondents experienced as negative include allowing participants to organise their own groups ("it feels like a popularity contest"), groups that are too small and that change in composition too often, and the varying attendance and non-committal nature of online meetings, which do not create a sense of joint responsibility and a safe climate.

A number of respondents also felt that no explicit attention was paid to getting to know each other and that not enough activities were organised, which resulted in limited social connectedness.

Activities and IT tools
When asked which activities and IT tools are considered useful for social connectedness in the learning community, respondents mentioned:
- Coaching classes
- On-site/physical activities
- The use of forums and app groups
- Online collaboration in alternating groups formed by the lecturer

One respondent indicated to have found it helpful for participants to write down their expectations of the learning community on a Padlet at the start of the learning community and then to discuss this together afterwards.

Role of the lecturer
Finally, respondents indicated that they appreciated it when the lecturer assumed an active and facilitating role. Examples they gave were encouraging introduction rounds and holding students accountable for their responsibilities in the learning community. One respondent also mentioned the importance of lecturers' IT skills for the use of platforms and tools.

Follow-up survey, evaluation sessions and group interviews
Because of the big overlap in the answers to the open questions in the follow-up survey, the topics discussed in evaluation sessions and the results of the group interviews, these items were discussed together. For each result, the source is indicated.

Online education and social connectedness
Both in the follow-up survey and in the group interviews, respondents indicated that online learning was an impediment to social connectedness. They indicated that meeting each other online exclusively did not suit everyone and that this might well cause people to leave the learning community.

Aspects that impede online learning and social connectedness
A group interview and the follow-up survey showed that not all participants were always present at the learning community's online meetings. Respondents indicated that this absence does not contribute to social connectedness and a sense of safety within the group.

Another respondent indicated in the follow-up survey that the varying composition of the learning community in each period makes social connectedness more difficult. Respondents also indicated in the follow-up survey that they felt they were left to their own devices, or that they had to actively seek help from fellow students.

Aspects that foster online learning and social connectedness
Respondents indicated a number of aspects they found positive, such as being a participant of a learning community, recognition of each other's qualities, an open attitude towards each other and the willingness to share documents. Being able to look back at online classes was also seen as positive, both in the follow-up survey and during the group interviews.

The coaching group was mentioned several times as a success factor. However, respondents in the follow-up survey, evaluation sessions and group interviews also indicated that success depends on who you are in a group with. Furthermore, fellow students must be committed to the goals and activities of the learning community and be actively involved in the group. If this does not happen, respondents say, you might invest time and energy in giving feedback to someone but get little in return.

Group size and getting to know each other
During the interviews, respondents indicated that it is easier to achieve social connectedness in small groups. One of the learning communities used a buddy system for this purpose. The respondents concerned indicated in the follow-up survey, the evaluation session and the group interview that they were positive about this system.

However, when working with small groups, it is important that lecturers encourage students to get to know other students outside their group. A 'buddy book' can help with this. Furthermore, respondents in several evaluation sessions were enthusiastic about using non-standard questions during the introduction.

Shared and common goals

During the group interviews, a useful example of how to create social connectedness emerged – jointly drafting a contract regarding the purpose and performance of the learning community. This contract made it easier for the participants to hold each other accountable for their roles.

In one of the evaluation sessions, it was indicated that the joint formulation of substantive goals can be difficult for students who are just starting their studies. In the initial period, they are much more concerned with practical questions, finding out what is expected of them and getting into the flow of their studies. As a result, they are still unfamiliar with the subject matter and what their professional development needs are.

Moreover, one of the evaluation sessions showed that finding common goals and connecting themes that are relevant and appealing to all participants can be a challenge for learning communities in which participants do not always work on the same learning outcomes.

Activities and IT tools

As regards activities and IT tools that contributed to getting to know each other and formulating and achieving shared goals for the learning community, the following top five emerged from the follow-up survey:

1. Microsoft Teams
2. Coaching sessions
3. Blackboard (Collaborate)
4. Working together on assignments in smaller groups
5. A group app

According to the respondents, paying explicit attention to getting to know each other – in various ways – and jointly addressing students' needs also helped to create a sense of community. Giving and receiving peer feedback was also identified as an effective approach. What was striking, however, was that many respondents could not name a specific IT tool.

Role of lecturer and student

Respondents indicated in the questionnaire, the evaluation sessions and the group interviews that the lecturer's role continued to be significant throughout the duration of the learning community. This applies both to the start of the learning community – to encourage participants to get to know each other – and throughout the duration of the learning community – to continue to monitor whether the study/coaching groups are functioning well. And during the evaluation sessions, lecturers indicated that they would be happy to motivate their colleagues to adopt a similar approach in their learning communities.

The evaluation sessions and group interviews show that participants felt that giving students a major role in preparing and leading meetings with the learning community, with rotation of roles if necessary, was beneficial. One of the learning communities reported good experiences with the division of roles among participants, including chairperson, timekeeper, minute taker and Head of Fun.

Both in the questionnaire and in the group interviews, several respondents mentioned their own role and that the more you put in, the more you can get out. As a side note, they indicate that there are also students who do not need this type of involvement and that there should be room for this.

2.3 Conclusion

For the purposes of this publication, we looked at design principles for optimising social connectedness in online and blended learning communities within the context of flexible education (programmes in which students differ in either learning outcome or the pace at which they complete the curriculum).

Seven design principles

The research resulted in the following seven design principles:
Design principles focused on substantive aspects and behavioural aspects:
A. Getting to know each other
B. Trust and cooperation
C. Shared and common goals
D. Willingness to participate
Design principles focused on form and more peripheral aspects:
E. Programme and instructional strategies
F. Sharing information and knowledge
G. Resources and preconditions

These design principles are interrelated and cannot be seen separately from each other. The principles can also be tested or rolled out further at different times within the learning community.

Important findings

The design principles were tested in practice by means of experiments at four educational institutions, in a total of eight programmes. Analysis of the quantitative data did not provide a lot of significant information on the effect of the design principles on social connectedness. In contrast, the qualitative data – collected through design and evaluation sessions, the

questionnaire and the group interviews – provided a number of significant findings:

- The participating programme providers found the framework with seven design principles to be helpful and suitable for optimising social connectedness in online and blended learning communities. The process of discussing the design principles with each other and implementing possible measures played a key role in this.
- There is no 'one size fits all' solution for optimising social connectedness. It is therefore important to be aware of the factors that influence each individual learning community. These factors also help establish and prioritise design principles that benefit the learning community. Factors that influence this include:
  - *The context of the learning community*. This includes the programme and field/domain, programme form (full-time/dual/part-time), the form of education (online/blended/physical) and whether it concerns a flexible or regular student path.
  - *The target group and composition of the learning community*. Are the participants first-year or senior students, for example, or is the learning community mixed? Who is the facilitator? Has the learning community consisted of the same participants for some time, or does this change regularly (every six months or so)? Are the participants working on the same learning outcomes or not?
- The role of facilitator is important; this person plays a key role in the success of the learning community as a liaison, motivator and good example in the learning community but also acts as a coach and facilitator in formulating the various design principles.
- The use of IT tools is inextricably linked to the application of the design principles in online and blended learning communities. These tools can therefore make an important contribution to the sense of community in the learning community. For each design principle, the guide includes practical tips and working methods as well as a specific example of an IT tool.

2.4 Discussion and recommendations

Several factors may have influenced the results of this research, which is why the following discussion points and recommendations for follow-up research have been formulated:

The context of COVID-19

This research took place during the COVID-19 pandemic – a period in which meetings of learning communities took place almost exclusively online. This means that the design principles were mainly tested in online and blended learning communities and not yet in physical learning communities. At the same time, the fact that meetings had to be organised and held online may have led to a greater willingness among participants to follow online learning and greater self-evidence of the use of IT tools in the experiments.

Recommendation: To gain more insight into the effectiveness and applicability of the design principles in blended learning communities, research should also be conducted in the context of on-campus learning.

Influence of programme characteristics

The characteristics of the programme providers that participated in this research may have influenced the results. All participating programmes were in the social and healthcare domain. In addition, most of the programmes involved a part-time or dual student population. And finally, in light of the focus of this research, all participating programme providers had flexible curricula in which students differ in either learning outcomes or the pace at which they go through the curriculum.

However, the literature review suggests that the design principles can also contribute to promoting social connectedness in programmes in other domains, with other target groups and in a less flexible educational setup. This research does not provide any empirical data on this.

Recommendation: To gain a better understanding of the effect of the design principles on social connectedness in different types of learning communities, research should also be conducted in different contexts.

Focus on all design principles

The participating programme providers could choose for themselves which design principles to apply in the experiments conducted in the context of this research. As a result, the focus shifted to three design principles: Getting to know each other', 'Shared and common goals' and ´Willingness to participate'. This research has shown that explicit attention to these principles is less obvious than initially thought and that each principle requires sustained and conscious attention.

The context of online learning may have played a role in the choice of these three principles, because 'Getting to know each other', for example, is seen as a greater challenge in online learning than in on-campus learning. However, the consequence of choosing this limited number of design principles is that relatively less information on the applicability and feasibility of the other design principles was collected from educational practice.

Recommendation: Follow-up research should be conducted on a larger scale and in different contexts so that experiments can be performed with all design principles.

Long-term quantitative research

What is striking about this research is that the quantitative data and the qualitative data show different pictures. Based on the quantitative data from the preliminary survey and follow-up survey, there appears to have been little change in the social connectedness experienced by participants in the learning communities. No significant differences were found at the scale level and at the item level, only one significant difference was observed in relation to the depth of learning. The qualitative data, on the other hand, show that the measures in the experiments did result in a change, which – according to the respondents – contributed to the sense of social belonging.

Possible explanations for this may be the duration of the experiment, the nature of the instruments used and the size of the group of respondents. The duration of the experiment – and thus the time between the preliminary survey and the follow-up survey – was relatively short, namely one 10-week period. A longer duration of measures may be needed to achieve a quantifiable difference in the sense of social belonging within a learning community.

Furthermore, a quantitative measurement instrument does not allow for granularity and clarification and respondents may have interpreted items differently. The qualitative instruments did offer this room for granularity and clarification. The preliminary survey also revealed that the quantitative baseline of the experienced social connectedness was already relatively high, which may make it more difficult for it to grow significantly. Due to the relatively small group of respondents, it was not possible to test the quantitative data at the level of the individual learning communities.

Recommendation: Longer-term quantitative research and a larger sample size would make it possible to track the social connectedness experienced in learning communities over a longer period of time and within a larger group.

Interdependence and relative importance

This research has not yet looked at the mutual relationships and relative importance of the design principles in relation to each other. Relevant questions in this regard include Are certain design principles conditional on effective application of other design principles? Is the effect on social connectedness of one design principle greater than that of another? Are there any particular combinations of design principles that have a mutually reinforcing effect? If so, under what conditions does this apply?

Recommendation: Follow-up research into interdependencies and the relative importance of the design principles can provide additional insights to further develop and enrich the model of design principles.

Role of the facilitator

Although the expertise of the facilitator of the learning community was beyond the scope of this research, the role of the facilitator has proven to be very important in fostering social connectedness in learning communities. It is therefore important to pay attention not only to the effectiveness and applicability of the design principles but also to the expertise of the facilitator (usually a lecturer) and the professional development required to fulfil this role effectively in different types of learning communities and different contexts.

The 'Facilitating professional development for lecturers' Zone of the Acceleration Plan for Educational Innovation with IT provides building blocks for professional development activities which can be used to increase the necessary knowledge and skills of lecturers (the facilitators).

Recommendation: Follow-up research will provide more insight into the knowledge and skills needed for facilitators of different types of learning communities in different contexts.

Epilogue by the researchers

We started this research in September 2020. This was an experiment in itself, as we part-nered with researchers and professors from four different universities of applied sciences to form a mini-learning community collaborating exclusively online.

Our own online learning community

Without realising it at the time, we ourselves started experimenting with a number of design principles like 'Getting to know each other', 'Sharing information and knowledge', 'Shared and common goals' and 'Willingness to participate'. We gradually gave further substance to these design principles from within our own online learning community. Looking back on the process, we can say that applying these design principles was in fact instrumental in giving shape and substance to our online collaboration, in inspiring each other and in drawing on each other's expertise.

Enthusiasm, willingness and motivation

The approach we chose, i.e. to identify design principles on the basis of a literature review and good practices and subsequently experiment with these principles was embraced by all participating programme providers. The programme providers were highly motivated and willing to work on strengthening social connectedness within their own learning com-munities, suited to with their specific context. The programme providers had a real need for guidance and were therefore open to learning with and from each other.

We are particularly pleased that participants explicitly indicated that they appreciated the clarity of the experiments, the framework provided by the seven design principles and the guidance provided by the researchers during the experiment. We would therefore like to thank all the lecturers and students of the participating institutions, the professors, and the Steering Committee of the Flexibilisation Zone of the Acceleration Plan for Educational Innovation with IT for their valuable input and contribution to this publication.

No 'one size fits all'

At the conclusion of this research, it is clear to us that there is no 'one size fits all'. If you want to strengthen social connectedness in an online or blended learning community, you have to consider many different aspects in the planning and design phase. Take, for example, the target group (full-time/part-time/dual), the effect of flexible student paths on the composition of the learning community (are these learning communities where the composition changes frequently or have they been together for a longer period but with everyone working on a different learning outcome) and your role as facilitator of the learning community.

We have experienced ourselves, as a mini-learning community – and through the partici-pating programmes – that social connectedness does not happen automatically. The most important lesson we have learned is to make a plan, start small, experiment and evaluate! Share your experiences and discuss the different steps with colleagues and students. In this way, you can continue to learn from and with each other and work together to strengthen social connectedness.
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We welcome questions or comments

We have enjoyed working on this research and hope that this guide will inform and inspire you to take the next step in strengthening social connectedness in your learning community.

We are also happy to help if you have any questions about the practical tips, the methods used or the research itself. Contact the Acceleration Plan at communicatie@versnellingsplan.nl so that we can help you achieve greater social connectedness!

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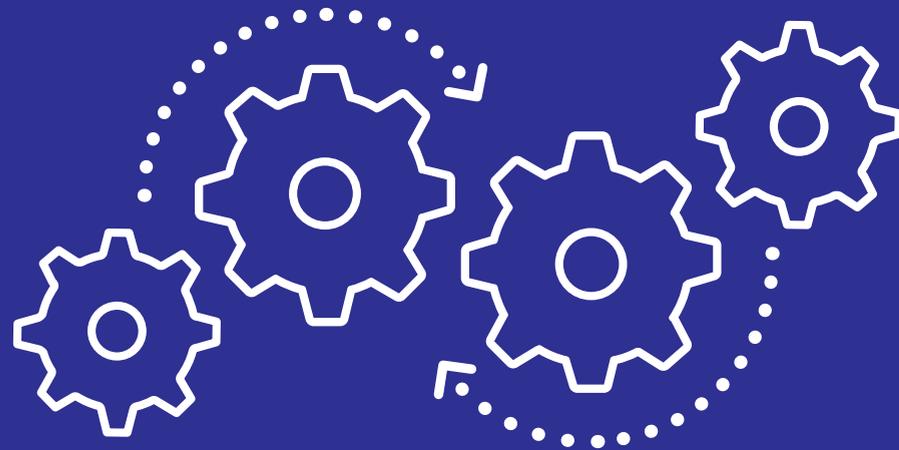**Rosalien van der Meer MSc** and **Dr Kariene Woudt-Mittendorff** (Saxion University of Applied Sciences)

Appendix 1: Action plans

To explore and test the applicability and practicality of the design principles, lecturers from four institutions experimented with one or more of the design principles. The experiments were conducted in semester 2/quartile 3/period 3 of the 2020-2021 academic year. Two action plans per institution were elaborated as shown in the tables below.

University of Applied Sciences Leiden – Action plan 1 of 2

Description of the experiment	
Learning community (programme/name)	**Bachelor Teacher Training programme in Social Skills, Health Care & Welfare**
Who are the participants of the learning community?	Part-time students participating in coaching groups of the Teacher Training programme in Social Skills, Health Care & Welfare. *Comment: A student has chosen to use participation in this experiment for her graduation project. She plays a key role in designing and implementing the action plan. All lecturer-coaches (five in total and one lecturer taking part in this experiment) of the part-time programme and the students participating in the coaching meetings are involved in the experiment.*
Which 'how' question was formulated at the start of the experiment?	How can we use the coaching sessions to ensure increased willingness of the students to participate (commitment)? How do we build on this towards common goals to strengthen the learning community?
Which design principles were elaborated in the experiment?	• Shared and common goals • Willingness to participate • Trust and cooperation

Which 'how' question was formulated at the start of the experiment?	The student has devised a structure/design for five coaching sessions. Students do the check-in themselves at the start of each meeting. An assignment/work format focused on reflection was also devised for each meeting. These measures are focused on the learning process, who you are as a person in your learning process and a visualisation exercise about your strengths and weaknesses. A 'learning note' and materials were developed for each meeting. Coaching techniques from the books of Susan van Ass were used for the choice of working methods. After each meeting, the coaches/lecturers complete a questionnaire and the student calls one of the lecturers after each meeting. Shared and common goals: The student also instructed the lecturers to draft a common goal for the coaching group with their students in the first meeting. They also asked the students to reflect on their personal goals. As part of this experiment, the coaches/lecturers were also asked to call the students in their coaching group spontaneously to ask how things were going. This resulted in meaningful conversations and was highly appreciated by the students. During these calls, students were encouraged to attend the coaching meetings (as not all students attend these meetings).
Which design principles were elaborated in the experiment?	• Its Learning • Microsoft Teams
What concrete activities were carried out in the experiment? (describe this for each design principle if possible)	Explicitly ask students to 'check-in' themselves.

Experiences of participants in the learning community	
How did participants rate the following during the preliminary survey: • Sense of connectedness • Interactive learning • Trust	N=18 • 3.02 • 3.78 • 4.03
How did participants rate the following during the follow-up survey: • Sense of connectedness • Interactive learning • Trust	N=16 • 3.37 • 4.27 • 4.27
According to the participants, which activities and IT tools contributed to social connectedness in the learning community?	PPersonal contact between coach and students outside the meetings was also part of the experiment. Teachers were initially reluctant to call students because of the time investment. However, this did pay off in terms of meaningful conversations and a sense of connectedness between lecturer and students. In the various reflection exercises, students broke out into smaller groups to work together and share experiences. Experience shows that keeping up the pace of these exercises is beneficial as it ensures greater focus and involvement. It is not an issue if not all students have finished their discussions by the time you get back to the plenary meeting. Based on the follow-up survey among these students, the mutual bonding and trust in each other's support in particular appears to have increased. The design was also generally appreciated by the lecturers, although some lecturers – whose group of students were not that involved – did have some difficulty with it.
According to the participants, which activities and IT tools contributed to collaborative learning in the learning community?	DThe fact that ample attention is given to the common goals in the first meeting – what do you want to work on together as a coaching group? It is important that students can discuss their questions or issues in the chat at the beginning of a meeting.

University of Applied Sciences Leiden – Action plan 2 of 2

Description of the experiment	
Learning community (programme/name)	**Associate Degree in Management in Care (MiC)**
Who are the participants of the learning community?	Two groups of approximately eight students from the dual Management in Care Associate Degree programme. One learning group consists of students who all started in September 2020. The other learning group consists of a mix of students: some of them started in September 2020 and others in February 2021. The students all work in the care/service sector and also follow the second year of the MiC programme one day a week.
Which 'how' question was formulated at the start of the experiment?	How do we ensure that students get energised by the learning groups/classes? How do we ensure greater connectedness between the learning groups and the lecturer? And can we also ensure connectedness across learning groups?
Which design principles were elaborated in the experiment?	• Getting to know each other • Sharing information and knowledge • Willingness to participate • Trust and cooperation
What concrete activities were carried out in the experiment? (describe this for each design principle if possible)	Each meeting of the learning group should start with a check-in provided by a different pair of students each time. Visualisation: visualise your graduation. Using photos, have students describe how they have felt today or in the past period.
Were IT tools used and if so, which ones?	• Its Learning • Gradework • Osiris • Microsoft Teams • Google Jamboard

Were any adjustments made to the experiment after the mid-term evaluation? If so, which adjustments?	The students were asked to prepare a small part of the class in groups of three for the next time. They are free to organise this in their own way, although the substantive theme is predetermined. This ensures focus not merely on the social aspect but also on content.

Experiences of participants in the learning community		
How did participants rate the following during the preliminary survey: • Sense of connectedness • Interactive learning • Trust	Learning group 1 N=5	Learning group 2 N=5
	3.64	3.42
	3.68	4.02
	3.94	3.98
How did participants rate the following during the follow-up survey: • Sense of connectedness • Interactive learning • Trust	Learning group 2 N=0	Learning group 3 N=2
	-	3.78
	-	4.25
	-	4.00
According to the participants, which activities and IT tools contributed to social connectedness in the learning community?	Being in charge of check-in for each meeting – by different pairs of students – drew attention to the social aspect of the learning community. This is an important step in strengthening social connectedness in the learning community. A learning point here is to provide clear frameworks in advance in terms of timeframe. A small step was taken by making student pairs responsible for a substantive contribution to a class in the learning community. This kind of content-based contribution may have a positive effect on social connectedness. However, one of the prerequisites for this is that the content should be presented in a better and more structured way in the curriculum so that the students know in advance what is expected of them.	
According to the participants, which activities and IT tools contributed to collaborative learning in the learning community?	By dividing tasks among student pairs, the students took responsibility for preparing and completing part of the meetings. We believe that expecting and demanding more substantive input from students enhances collaborative learning.	

Saxion University of Applied Sciences – Action plan 1 of 2

Description of the experiment	
Learning community (programme/name)	**Nursing (coaching group) – Part-time**
Who are the participants of the learning community?	Students in the coaching groups of the Nursing Training programme of the Saxion Part-time School. *Comment: One coaching group comprised students from different academic years and individual study programmes.*
Which 'how' question was formulated at the start of the experiment?	How do you organise online coaching sessions in such a way that they are interesting and manageable for all students?
Which design principles were elaborated in the experiment?	• Shared and common goals • Getting to know each other
What concrete activities were carried out in the experiment? (describe this for each design principle if possible)	There was an introduction session with the entire coaching group and then a separate session for new students in the coaching group. This was followed by another meeting with the entire coaching group. The first meeting, which was about getting to know each other, was not appreciated by all students. It may be that students have different needs and that feelings of safety (online) also play a role. In addition to the coaching group, the lecturer also focused more on getting to know each other by asking students to briefly share something about their background beforehand, for example, asking a question or providing a substantive answer. Differentiating for the various target groups in the coaching group is a challenge and entails searching for solutions. New students do find each other in common issues and themes, and the same applies to advanced students. But how do you connect the two groups and what can students in different stages of their studies do together?
Were IT tools used and if so, which ones?	• Blackboard (Collaborate) • Microsoft Teams

Were any adjustments made to the experiment after the mid-term evaluation? If so, which adjustments?	The idea emerged – not during the experiment itself but from the experiences and exchanges during the sessions – to seek connecting themes in the multidisciplinary areas of the nursing profession in addition to subjects like internships and graduation. This could be a thematic session on working in home care, for example, where students from different home care organisations provide input and the whole group can exchange experiences about this. The purpose is to provide insight into the activities of nurses in that particular sector and to assign meaning to them together. Another goal is to remove prejudices about the different sectors within the profession and encourage students to spend a day or do their internship in the relevant sector (broadening their view/perspective of the nursing profession). These thematic sessions have yet to take place, but they are basically optional meetings that can be differentiated according to the interests and needs of the diverse group of students. It was also suggested that the buddy system be revived. This involves pairing advanced students with first-year students.

Experiences of participants in the learning community	
How did participants rate the following during the preliminary survey: • Sense of connectedness • Interactive learning • Trust	N=15 • 3.01 • 3.34 • 3.41
How did participants rate the following during the follow-up survey: • Sense of connectedness • Interactive learning • Trust	N=13 • 3.00 • 3.45 • 3.34

According to the participants, which activities and IT tools contributed to social connectedness in the learning community?	Organising online meetings with the coaching group, with a round of introductions followed by breakout sessions in smaller groups.
	It is important, in an online environment, that the meeting is easily accessible and that everyone can be seen and heard (camera and microphone). Bear in mind, though, that technology cannot provide everything needed for social connectedness; it is therefore also essential to have physical meetings on location.
	Working for the same organisation can also create an added sense of community.
According to the participants, which activities and IT tools contributed to collaborative learning in the learning community?	Peer feedback and peer review with fellow students. This took place in smaller subgroups. However, it is important for students to actively formulate their own feedback or requests for help.

Saxion University of Applied Sciences – Action plan 2 of 2

Description of the experiment	
Learning community (programme/name)	**Associate Degree in Management (coaching group) – Part-time**
Who are the participants of the learning community?	Students in the coaching groups of the AD in Management programme of the Saxion Part-time School. At the time of the experiment, these students had all just started their studies.
Which 'how' question was formulated at the start of the experiment?	How do you ensure that students truly get to know each other? Also considering the (current) online nature of the programme and the fact that you don't always meet up with each other.
	And how do you ensure willingness to participate (commitment) and initiative of students to help each other and take responsibility for each other's learning?
Which design principles were elaborated in the experiment?	• Shared and common goals • Getting to know each other

What concrete activities were carried out in the experiment? (describe this for each design principle if possible)	Two meetings with the coaching groups were organised before the substantive classes. These meetings were held jointly with all coaching groups (3 groups with a total of 19 students).
	The first meeting was aimed at getting to know each other. The second meeting focused on more practical matters to help students get started with the programme and make it clear what is expected of them.
	The coach then had one-to-one discussions with students to ask how they were doing in terms of their programme. The coach encouraged the students to meet each other outside classes as well.
	To encourage peer feedback and contact, the lecturer set up weekly meetings in Microsoft Teams for the students to discuss professional products. The lecturer was not present at these meetings.
	A meeting was then held with the own coaching group only (5 to 8 students) which focused on what the students see as goals for the coaching group. What do they want to discuss with each other and with the coach (e.g. subject matter, professional development)?
	Many of the students work in the same organisation; social connectedness seemed to occur more easily among these students, but less easily with the rest of the group.
Were IT tools used and if so, which ones?	Unusual, non-standard questions were used to inspire students to say something about themselves. For example, 'what's your dream trip?' This prevents things from becoming boring and brightens up the meeting!
	Tips for websites with similar questions: checkin.daresay.io and toggl.com/blog/icebreaker-questions
	Then there are the standard educational applications, such as Blackboard (Collaborate) and Microsoft Teams.

Were any adjustments made to the experiment after the mid-term evaluation? If so, which adjustments?	The lecturer looked for suitable, connecting themes based on the intended goals and needs the students had indicated. However, students still found it difficult to formulate substantive goals and they were still primarily occupied with finding their way around the programme and getting into the rhythm of studying. The lecturer will therefore discuss the intended goals of the coaching group with the students again next semester.

Experiences of participants in the learning community	
How did participants rate the following during the preliminary survey: • Sense of connectedness • Interactive learning • Trust	N=3 • 3.11 • 3.57 • 3.50
How did participants rate the following during the follow-up survey: • Sense of connectedness • Interactive learning • Trust	N=2 • 4.10 • 4.35 • 4.20
According to the participants, which activities and IT tools contributed to social connectedness in the learning community?	The organisation of online meetings with the coaching group focused on getting to know each other. As personal encounters on location seem to be an essential part of this, IT tools alone are not enough in terms of fostering social connectedness. Furthermore, working for the same organisation can create an extra sense of community and a lower threshold for proactively reaching out and getting in touch with each other.
According to the participants, which activities and IT tools contributed to collaborative learning in the learning community?	Accessible contact through the app group, personal meetings and phone calls. The students also actively used the weekly contact moment created by the lecturer in Microsoft Teams to discuss their professional products (at Saxion Part-time School, testing is based on professional products).

Hanze University of Applied Sciences – Action plan 1 of 2

Description of the experiment	
Learning community (programme/name)	**Nursing – Full-time**
Who are the participants of the learning community?	Ten third-year and fourth-year students completing their second or third internship at different institutions in the mental health sector.
Which 'how' question was formulated at the start of the experiment?	How can the learning community focus on optimising shared pleasure in learning?
Which design principles were elaborated in the experiment?	• Willingness to participate (active participation, shared ownership) • Getting to know each other • Sharing information and knowledge • Programme and instructional strategies

What concrete activities were carried out in the experiment? (describe this for each design principle if possible)	<u>Sharing information and knowledge & Getting to know each other and Willingness to participate</u>
	• Have students jointly organise sparring moments in between the original meetings.
	
	<u>Getting to know each other</u>
	• Have them organise a BBQ in the park.
	  – Organise a fun energiser during break times to get to know each other better
	  – A group app was created
	• All the information and knowledge gathered was put on the Padlet
	• An overview was made of who is doing which internship where and what modules they are taking. Organising walk-in days together
	
	<u>Programming and instructional strategies</u>
	• Giving students tasks within the class.
	  – Voorzitter
	  – Chef plezier (verantwoordelijk voor energizers)
	  – Notulist/dataverzamelaar
	  – Agendamaker
	• It was agreed that opportunities would be created for internship experiences, assignments and peer review
	• The agenda manager checks what should be put on the agenda of a meeting before it takes place

Were IT tools used and if so, which ones?	Padlet for introductions.
Were any adjustments made to the experiment after the mid-term evaluation? If so, which adjustments?	Merge the roles of agenda manager and chair and add the role of timekeeper. One of the wishes was to reflect the learning needs of students more in the agenda items. At present, the students do not seem to seem to feel responsible for the extra agenda items.

Experiences of participants in the learning community	
How did participants rate the following during the preliminary survey: • Sense of connectedness • Interactive learning • Trust	N=5 • 2.98 • 3.76 • 3.86
How did participants rate the following during the follow-up survey: • Sense of connectedness • Interactive learning • Trust	N=0 • - • - • -
According to the participants, which activities and IT tools contributed to social connectedness in the learning community?	Various activities and IT tools were used for the students to get to know each other. The students organised a BBQ, an introduction meeting took place with Padlet and halfway through the period a quiz was created with Kahoot (based on personal input from the students, such as an interesting experience, hobbies, a quirky fact about yourself – something the others don't know about you).
According to the participants, which activities and IT tools contributed to collaborative learning in the learning community?	The lecturer focused on willingness to participate (commitment) through peer feedback and the assignment of student roles. By assigning student roles, students took responsibility for preparing and completing part of the meetings. Assigning different student roles (timekeeper, agenda manager, note taker, Head of Fun) is highly effective in getting students involved more actively and seeing them from different angles. The participants responded well to the Head of Fun. This brings a sense of fun and energy to the meetings, which enhances the atmosphere.

Hanze University of Applied Sciences – Action plan 2 of 2

Description of the experiment	
Learning community (programme/name)	**Management in Care – Full-time**
Who are the participants of the learning community?	The students are graduates. Four to five students are supervised in consultation groups by two lecturers.
Which 'how' question was formulated at the start of the experiment?	What can students in the learning community do to take control of their own learning process?
Which design principles were elaborated in the experiment?	• Shared and common goals – formulating goals for the meetings • Willingness to participate – active participation during but also before the sessions • Sharing information and knowledge – interaction and feedback • Getting to know each other – reaching out to each other outside of sessions • Trust and cooperation – safe and open atmosphere, equal treatment • Resources and preconditions – see platform/IT tools • Programme and instructional strategies – clear structure/rotating roles
What concrete activities were carried out in the experiment? (describe this for each design principle if possible)	SShared and common goals + Willingness to participate: Rules were agreed on and structure was introduced in the first meeting. It was then indicated that students should take more control from the second meeting onwards. Trust and collaboration: Microsoft Teams was used so that students could upload documents, read each other's assignments and give feedback (peer feedback plays an important role in this learning community, as it creates interdependence and a sense of responsibility for each other's learning processes). Sharing information and knowledge: Students were asked to specify their feedback needs and what they would like to discuss during the meeting when uploading their documents (parts of their thesis). This determined the contents of the agenda.

	Willingness to participate + Programme and instructional strategies: The roles of chair, note taker and timekeeper were rotated. The meetings lasted for two hours, which gave all students about 20 minutes per person. Students spoke first and gave each other feedback. The lecturer only took the floor when necessary and only said something at the end to add to what the students had said. The lecturer spoke less than was previously the case.
Were IT tools used and if so, which ones?	• Blackboard Collaborate • Microsoft Teams
Were any adjustments made to the experiment after the mid-term evaluation? If so, which adjustments?	We would like move towards making more use of each other's talents (both in students' role in the meeting and their role in the group, considering how students help each other/give feedback/work together in between the meetings). How do you unleash the students' talents? That way, you can also look at how you can mutually benefit from each other's talents. For example, there is currently a student in the group who is very good at infographics. There are, of course, many more talents in a group but they are currently not explicitly utilised.

Experiences of participants in the learning community	
How did participants rate the following during the preliminary survey: • Sense of connectedness • Interactive learning • Trust	N=7 • 3.49 • 3.80 • 4.03
How did participants rate the following during the follow-up survey: • Sense of connectedness • Interactive learning • Trust	N=3 • 3.37 • 3.70 • 3.67

According to the participants, which activities and IT tools contributed to social connectedness in the learning community?	The group used Microsoft Teams, where documents are uploaded and students give each other feedback. Peer feedback plays an important role in this learning community, as it creates interdependence and a sense of responsibility for each other's learning processes.
According to the participants, which activities and IT tools contributed to collaborative learning in the learning community?	When uploading their documents, students specified their feedback needs and what they would like to discuss during the meeting. This determined the contents of the agenda.

The Hague University of Applied Sciences – Action plan 1 of 2

Description of the experiment	
Learning community (programme/name)	**Teacher Training programme – Part-time**
Who are the participants of the learning community?	Students who are starting the part-time Teacher Training programme.
Which 'how' question was formulated at the start of the experiment?	How do you get students to get to know each other properly at the start of the programme in order to foster social connectedness and informal contacts and to form learning communities, taking into account different learning styles, needs and pace?
Welke ontwerpprincipes zijn in het experiment uitgewerkt?	• Getting to know each other • Trust and cooperation
What concrete activities were carried out in the experiment? (describe this for each design principle if possible)	A digital kick-off meeting was organised on 1 February for the students to get to know each other. All students were invited to contribute to the 'buddy book' and introduce themselves there. Students were also asked about their individual need for contact. There have now been three Q&A sessions. No informal online meetings were organised.

Were IT tools used and if so, which ones?	Online introduction through an online game (fizzinity.nl) proved to be a success. The buddy book was completed (Word format), students looked at it and they got in touch with each other – also as a result of the introduction game they played in groups – and app groups were created. The students had many questions. One Q&A session alone does not meet the many different needs of students. Incidentally, this is not always the case with on-campus classes either.
Were any adjustments made to the experiment after the mid-term evaluation? If so, which adjustments?	Initially, the meetings of the February intake and the September intake were scheduled separately, which meant these groups would have to be attended to separately. However, as student numbers did not allow for this, the groups (September and February intake) now have classes together. This fosters cross-fertilisation between the groups and students can help each other. In the new design, lecturers are required to pay more attention to the needs of both student groups in their classes. In the future, we want to give the coaches an active role in the online introduction/game. Coaches normally have an active role in physical meetings, but now there was a degree of non-committal participation on the part of the lecturers.

Experiences of participants in the learning community	
How did participants rate the following during the preliminary survey: • Sense of connectedness • Interactive learning • Trust	N=8 • 3.61 • 3.68 • 3.86
How did participants rate the following during the follow-up survey: • Sense of connectedness • Interactive learning • Trust	N=2 • 3.72 • 3.45 • 4.05

According to the participants, which activities and IT tools contributed to social connectedness and collaborative learning in the learning community?	• A buddy book, for which students had to provide their details, but also answer some fun/original questions about themselves • Drawing from the buddy book, an app group was then created. The app group played a big role in fostering mutual contact and helping each other through the chaos. Somehow, this chaos also contributed to the students' sense of connectedness with each other • An introduction activity in the form of a game via Microsoft Teams • The fact that the programme was involved in this research meant that much more time was taken to get to know each other • The COVID-19 situation meant that things had to be organised differently, i.e. it had to be made covid-proof. And by discussing with each other how we could achieve social connectedness and collaborative learning, i.e. with both lecturers and students, we took a much more critical look at this than we would otherwise have done

The Hague University of Applied Sciences – Action plan 2 of 2

Description of the experiment	
Learning community (programme/name)	**Nutrition and Dietetics – Part-time**
Who are the participants of the learning community?	Students of the new February intake of the part-time Nutrition and Dietetics programme.
Which 'how' question was formulated at the start of the experiment?	How do get students to truly get to know each other at the start of a module within a study group so that social connectedness and informal contacts are facilitated, taking into account different learning preferences, needs and pace?
Which design principles were elaborated in the experiment?	Getting to know each other.

What concrete activities were carried out in the experiment? (describe this for each design principle if possible)	Introduction to the contents of the module: A student shared their experiences with the module. Social introduction: Plenary. Telling the group something about yourself/photo + name and surname (tel. or email address?) Also posting something about yourself on Yamboard or Padlet – a mix of serious and more trivial information (like a Tinder profile) and then getting to know each other in small groups. Getting started in study groups. Facilitating an online class before or after an instructional day to talk with each other some more.
Were IT tools used and if so, which ones?	A Padlet was created for all modules as an introduction; this was properly completed. This took up a lot of time during the meeting, leaving little time for the class itself. In addition to this Padlet with profiles of all the students, study groups with six to eight students were created. The introduction activity started in Blackboard Collaborate, after which the students broke up into groups. The students themselves created a permanent group for study groups in Microsoft Teams.
Were any adjustments made to the experiment after the mid-term evaluation? If so, which adjustments?	Contacts with colleagues in other modules could have been better coordinated. Agreements have been made about this and we aim to improve this together. This has not yet been embedded in the system. Study groups are not a formal part of the structure. For propaedeutic groups, a more uniform approach was taken. For each new submodule, pay attention to whether there are study groups, how the study groups are performing and whether everyone is in a study group. Social connectedness seems to have an influence on enjoyment of one's studies: if I like the study group, I will stay in it even if I have an exemption. Although informal meetings were organised, they felt uncomfortable and not much information was exchanged. The lecturer had to work hard to keep the conversation going. It did not feel like a successful measure.

Experiences of participants in the learning community	
How did participants rate the following during the preliminary survey: • Sense of connectedness • Interactive learning • Trust	N=21 • 3.29 • 3.79 • 3.70
How did participants rate the following during the follow-up survey: • Sense of connectedness • Interactive learning • Trust	N=16 • 2.97 • 3.45 • 3.39
According to the participants, which activities and IT tools contributed to social connectedness and collaborative learning in the learning community?	Buddy book via Padlet. App groups for both practical matters/questions and more substantive matters. Have a senior student arrange an introduction. The lecturer should take an active role in social connectedness and forming groups. The composition of subgroups should be shuffled regularly.

Appendix 2:

Questionnaire for students in learning communities

The questionnaire below was used to collect data on the effectiveness and usefulness of the design principles and the measures, methods and IT tools used.

Measuring classroom community

The following table contains a validated questionnaire for measuring classroom community[24]. Two subscales can be distinguished in this measurement: 'sense of connectedness' and 'interactive learning'. 'Sense of connectedness' is about social connectedness in the group and 'interactive learning' is about the learning process itself. Items from an existing questionnaire on reciprocal behaviour were also added[11]. These statements relate to mutual trust in the learning community.

Completion and adaptation

All statements could be answered on a five-point Likert scale from 'totally disagree' to 'totally agree'. The items in green were negatively formulated; the scores on these items were recoded for the analysis. In previous research, statements 15 and 17[24] did not seem to belong to the 'sense of connectedness' scale; this subscale is therefore coloured red in the table. Students did not seem to understand how to interpret these questions and what exactly the researchers wanted to know. For this reason, it was decided to reword item 15 (see blue text for the adjustment) and remove item 17.

Additions or adjustments have been made to all statements where necessary to ensure that the questions are appropriate to the context of this research. For example, terms like 'in this learning community' and 'participants' were used instead of 'students'.

Introduction used for the preliminary survey:
Thank you for participating in this questionnaire for the LIFEGO (Dutch acronym of Learning communities in flexible and personalised education) research project. The aim of this project is to investigate how study programmes can optimise social connectedness between students and lecturers in online and blended learning communities. In this project, we are collaborating with four universities of applied sciences: The Hague University of Applied Sciences, Saxion University of Applied Sciences, University of Applied Sciences Leiden and Hanze University of Applied Sciences.

This questionnaire is about the social connectedness you experience in the learning community. We will ask you to specify the learning community you belong to. Please complete the questionnaire from the perspective of social connectedness in this learning community. We would like to hear about your experience. There is no wrong or right answer. In a few weeks' time, you will receive the same questionnaire again so that we can see whether the perceived social connectedness in the learning community has changed.

Introduction used for the follow-up survey:
Thank you for participating in this questionnaire for the LIFEGO (Dutch acronym of Learning communities in flexible and personalised education) research project. The aim of this project is to investigate how study programmes can optimise social connectedness between students and lecturers in online and blended learning communities. In this project, we are collaborating with four universities of applied sciences: The Hague University of Applied Sciences, Saxion University of Applied Sciences, University of Applied Sciences Leiden and Hanze University of Applied Sciences.

Like the previous questionnaire, this follow-up questionnaire is about the perceived social connectedness in your learning community. We are also interested in your experience of how the learning community took shape in the past weeks. We will ask you again later to specify which learning community you belong to; please complete the questionnaire from the perspective of social connectedness and activities in this learning community. The deadline for completing the questionnaire is 16 May.

Vragenlijst studenten leergemeenschappen

Deel 1 vragenlijst: Splitsingsvariabelen

		Response options	Preliminary survey/ follow-up survey
1	Informed consent We ask for your consent to use the research data. There is a digital option for you to provide your consent. This consent has the same value as a form signed on paper. The questions will start after you have given your consent. I hereby declare that I have been adequately and clearly informed of the nature and method of the research. I voluntarily consent to participate in this research. I also consent that the results may be used for research purposes. My data will be processed anonymously. I understand the above text and agree to participate in this research.	• I agree • I do not agree	Preliminary survey and follow-up survey
2	Which learning community do you belong to?	• University of Applied Sciences Leiden: – Teacher Training – Teacher Training programme in Social Skills, Health Care & Welfare – Management in Care • The Hague University of Applied Sciences: – Nutrition and Dietetics – Teacher Training • Hanze University of Applied Sciences: – Nursing Training – Management in Care • Saxion University of Applied Sciences: – Nursing Training – AD in Management	Preliminary survey and follow-up survey
3	How long have you been part of this learning community?	• Since this period/quartile/semester • Since semester 1 of this academic year (started between Sept 2020 and January 2021) • Longer, i.e. since …	Preliminary survey and follow-up survey
4	Are you following the programme full-time, part-time or in dual form?	• Full-time • Part-time or dual	Preliminary survey and follow-up survey
5	What is your age?	[fill in number] years	Preliminary survey and follow-up survey
6	How many of the meetings of this learning community did you attend? *Please choose the answer that fits best*	• None • About a quarter • About half • About three quarters • All	Follow-up survey
7	In which setting did these meetings take place?	• Entirely online • Entirely on location • Partly online and partly on location • Hybrid (online and on location at the same time)	Follow-up survey

Part 2 questionnaire – Items preliminary survey and follow-up survey: social connectedness and trustt

		Response scale	Subscale
		totally disagree — totally agree	
1	I feel that the participants of this learning community are engaged with each other	○ ○ ○ ○ ○	Sense of connectedness
2	I am encouraged to ask questions in this learning community	○ ○ ○ ○ ○	Interactive learning
3	I feel connected to others in this learning community	○ ○ ○ ○ ○	Sense of connectedness
4	I find it difficult to get help when I have a question	○ ○ ○ ○ ○	Interactive learning
5	I do not experience a group feeling in the learning community	○ ○ ○ ○ ○	Sense of connectedness
6	I receive timely feedback from participants of the learning community	○ ○ ○ ○ ○	Interactive learning
7	The participants of this learning community are like one family to me	○ ○ ○ ○ ○	Sense of connectedness
8	I feel uncomfortable if I have to indicate that I do not understand something	○ ○ ○ ○ ○	Interactive learning
9	I feel that I don't belong in the learning community	○ ○ ○ ○ ○	Sense of connectedness
10	I do not like to speak freely at learning community meetings	○ ○ ○ ○ ○	Interactive learning
11	I trust the other participants of this learning community	○ ○ ○ ○ ○	Sense of connectedness
12	I only learn superficially in this learning community	○ ○ ○ ○ ○	Interactive learning
13	I can rely on the other participants of this learning community	○ ○ ○ ○ ○	Sense of connectedness

14	Other participants of this learning community do not help me in my learning process	○ ○ ○ ○ ○	Interactive learning
15	Other participants of this learning community are dependent on me in their learning process	○ ○ ○ ○ ○	Sense of connectedness
16	I get plenty of opportunities to learn within this learning community	○ ○ ○ ○ ○	Interactive learning
17	My learning needs are not met within this learning community	○ ○ ○ ○ ○	Interactive learning
18	I trust that the other participants of this learning community will support me	○ ○ ○ ○ ○	Sense of connectedness
19	This learning community does not stimulate my desire to learn	○ ○ ○ ○ ○	Interactive learning
20.	Collaborative learning is seen as a common interest in this learning community	○ ○ ○ ○ ○	Mutual trust (reciprocal behaviour)
21	In this learning community, everyone is genuinely interested in each other	○ ○ ○ ○ ○	Mutual trust (reciprocal behaviour)
22	In this learning community, people can count on each other when someone has a problem	○ ○ ○ ○ ○	Mutual trust (reciprocal behaviour)
23	There is always an awkward atmosphere in this learning community	○ ○ ○ ○ ○	Mutual trust (reciprocal behaviour)
24	It is not difficult to be candid in this learning community	○ ○ ○ ○ ○	Mutual trust (reciprocal behaviour)
25	In this learning community, it is always about who gets their way and who does not	○ ○ ○ ○ ○	Mutual trust (reciprocal behaviour)
26	In this learning community, people can rely on each other	○ ○ ○ ○ ○	Mutual trust (reciprocal behaviour)
27	In this learning community, everyone is given the opportunity to participate	○ ○ ○ ○ ○	Mutual trust (reciprocal behaviour)
28	In this learning community, it is important to come across as strong	○ ○ ○ ○ ○	Mutual trust (reciprocal behaviour)
29	In this learning community, there is little mutual understanding	○ ○ ○ ○ ○	Mutual trust (reciprocal behaviour)

Part 3 of the questionnaire – Items in the follow-up survey: Evaluation of the experiment

		Response scale	
30	At the start of period 3/quartile 3/semester 2, this learning community focused on getting to know each other.	totally disagree ○ ○ ○ ○ ○	totally agree
31	Halfway through and/or at the end of period 3/ quartile 3/ semester 2, this learning community focused on getting to know each other.	totally disagree ○ ○ ○ ○ ○	totally agree
32	I have got to know my fellow students and lecturers in this learning community in the past period/quarter.	totally disagree ○ ○ ○ ○ ○	totally agree
33	In the past period/quartile, the lecturers in my learning community encouraged informal inter-action between the participants in order to get to know each other better.	totally disagree ○ ○ ○ ○ ○	totally agree
34	Can you explain which activities and IT tools you think contributed to getting to know each other within the learning community? And can you explain why?		
35	In this learning community, we discussed the purpose of the learning community – that is, what we want to achieve together.	totally disagree ○ ○ ○ ○ ○	totally agree
36	In this learning community, we discussed what we expect from each other.	totally disagree ○ ○ ○ ○ ○	totally agree
37	The activities we carried out in the learning community contributed to achieving our shared goal.	totally disagree ○ ○ ○ ○ ○	totally agree
38	Can you explain which activities and IT tools you think contributed to defining and achieving the aims of the learning community? And can you explain why?		
39	Would you like to say anything else about the social connectedness you experience in your learning community or about this questionnaire?		

After completing the questionnaire:

Thank you very much for your cooperation! You can now close the questionnaire.

Appendix 3:

Guidelines for group interview of students

From each learning community, two to three students who did not participate in the sessions were asked to participate in the following group interview.

Objective:

We would like to discuss social connectedness with students from the participating study programmes by means of online and blended learning communities. This will give us a more qualitative interpretation of the results of the experiments. The group interview gives researchers the opportunity to ask more questions about the aspects that made a difference for students in terms of social connectedness in their learning community.

Approach:

- The students sign an informed consent form in advance
- If feasible in terms of organisation, one interview will be conducted for each institution. During this group interview, students from the various experiments are questioned as a group.
- Two researchers are present at each interview. The researcher from the university of applied sciences conducts the interview and acts as interview leader. The second researcher takes notes to record the conversations. A recording is also made as a backup
- The interview is semi-structured
- The researchers use the design principles as a framework to for more in-depths questions and for analysis after the interviews.
- Duration of the interview: 45-60 minutes

Interview:

- The students are briefly introduced to each other
- The researcher introduces the research and the research question. The concepts of social connectedness and learning community are also defined so that it is clear to the students what the survey is about
- The researchers ask the students the following questions:
  a. To what extent did you experience social connectedness with your group?
     – What did this entail? Can you give an example?
     – When did you think: I feel at home here, or not?

b. What made you experience much/little social connectedness?
   – Which activities contributed to this or which activities did you miss?

c. To what extent has social connectedness contributed to your enjoyment of your studies and has it played a role in your decision to continue them, for instance?

d. What do you expect from your lecturer in terms of fostering social connectedness in the learning community?
   – Can you give an example?

e. How do you see your own role and that of your fellow students with regard to fostering social connectedness in the learning community?
   – What influence do you have and what is beyond your influence?

f. What possibilities do you see for improving social connectedness in the learning community?
   – Can you give an example?

g. Which IT tools were used and what do you think of these?

h. Do you have any suggestions for the use of IT tools that can help to create social connectedness within a learning community?
   – Can you give an example?

i. Looking to the future – what do you think post-covid education will look like and what would you like to see?

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The Acceleration Plan for Educational Innovation with IT is a four-year programme focused on bringing initiatives, knowledge, and experiences for digitalisation together. The programme is an initiative of SURF, the Netherlands Association of Universities of Applied Sciences, and the Association of Universities, and is organised in eight acceleration zones. In the Flexibilisation zone, 17 institutions are working on improving flexible education in Dutch higher education.

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