The role of an EnTranCe learning community facilitator with regards to autonomy support.

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Abstract

A Learning Community (LC) is defined as an interprofessional team which includes employees, field experts, students and researchers alike, who combine their insight and expertise, while promoting individual and group learning. A key position within LCs is the facilitator, who is responsible for guiding the learning process of the LC group as a whole as well as guiding the learning processes of the individual LC members. One organization in the infant stages of implementing LCs is EnTranCe, Centre of Expertise Energy. The literature shows that it is important to provide autonomy support when guiding a learning process within educational contexts. While not a teacher, the facilitator role also guides learning and is found in an educational context, therefore this case study is intended to uncover what the current role of a facilitator at EnTranCe entails with regards to autonomy support and how this changes over time.

This study uses a qualitative design by providing a descriptive analyses of observed LC sessions, processing transcripts of the sessions on autonomy support utterances and using semi-structured interviews. The results show that the facilitator does provide autonomy support to the participants of the LCs, however the majority of autonomy support provided is of a low level (Instruction, providing information or closed questions). Furthermore, except for the levels 'Providing information' and 'Closed/Knowledge-based question', there is not much change in the levels for autonomy support over or within the sessions. This study provides a first step in exploring whether LC facilitators provide autonomy support, providing a broad overview of the current role of the facilitator. Future research should focus on understanding the difference between an internal and external LC facilitator.

Introduction

Although there have already been a great many steps in transitioning the current fossil-fuel based society towards an energy neutral one, there is still much work to be done. Therefore, the Dutch government has proposed several policies aimed at lowering the amount of greenhouse gas emissions. These policies in turn, require new knowledge, skills and competencies from energy professionals (Vermeulen et al., 2018) as the current knowledge, skills and competencies are not sufficient for the energy transition (Topsectoren, 2019).

A frontrunner with regards to the energy-transition are the northern parts of the Netherlands, dubbed Hydrogen Valley by Europe (Waterstof Werkt). The province of Groningen, for example, is diligently working towards lowering emissions and moving towards a green and sustainable future (Homan, 2019). One of the organizations on the precipice of the energy transition is EnTranCe, Centre of Expertise Energy, which trains energy professionals and stimulates the development of new and sustainability technologies and ideas.

This is no simple task however, as the issues surrounding sustainability are becoming increasingly complicated and complex. This increased complexity surrounding sustainability issues demands different disciplines to come together, to share and improve their knowledge about sustainability to build the most suitable solutions for these complex issues. However, sharing specific knowledge between different disciplines is no easy feat, requiring a new way of learning altogether. Learning communities (LC) have presented themselves as a promising new way of learning through which the transdisciplinary challenge of sustainability can be best met, understood and solved (Topsectoren, 2019).

What is a learning community

There is a plethora of research to find on what LCs are, what benefits they have and how they improve the learning process and knowledge sharing between the participants. That being said, it is important to be aware of the type of LC that is being discussed, as there are many different types of LCs that share similarities, but work with different participants and in different settings. For example, there are professional learning communities (Stoll et al., 2006), which focuses on a group of people within a discipline improving their practice by using reflection and collaboration through the lens of growth. Another form of a LC is a Community of Practice, which is defined as 'a group of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly' (Wenger, 2011). Both of these types of LC are predominantly homogenous, as their group members are all working within the same discipline (e.g groups of teachers, students or artists). This is a key difference with regards to the LCs in this study, as these have a heterogeneous character.

This heterogeneity is a necessity when it comes to finding solutions to the complex and complicated issues of sustainability advancements. Within these LCs, members of many different disciplines and specializations can be found, such as students, teachers, researchers, field experts, law experts etc. Therefore, the definition for a LC in this study will be: 'An interprofessional team which includes employees, field experts, students and researchers alike, who combine their insight and expertise, while promoting individual and group learning, which allows for personal growth for all members involved' (Corporaal et al., 2020). This type of LC stems from practice, the specific theoretical framework for this more inter- and transdisciplinary LC is still largely unknown, and the process and principles for a robust design of a LC are still in their pilot phase (Hubres et al. 2021, Van Rees et al., 2022).

In spite of the limited research on LCs, Van Rees et al. (2022) have identified three core aspects. These core aspects are: There is a need for all the participants to feel safe within the learning process, the topic or outcome of the LC needs to motivate participants to actively participate by being in line with their daily work and an external facilitator should be assigned as a guide to the learning process of the LC as a whole as well as for the individual participants.

The facilitator

There is still a substantial lack of research into the role of the facilitator in LCs within the literature. Despite this, many studies do advocate for the role of the facilitator being key in improving the usefulness of LCs, as a facilitator provides support in creating and sustaining a safe and effective learning environment (Ortquist-Ahrens & Torosyan, 2009). In spite of this, there is an ongoing discussion on what the role of a facilitator entails. Kolb et al. (2008) argue that the primary role of the facilitator is guiding group discussions, through the encouragement of group members to achieve their planned goals. According to them, the definition of a facilitator is: 'A person who remains neutral in the actual decision(s) of the group but who assumes a responsibility for guiding the group's process while it is attempting to solve a problem or reach a decision' (p. 123). Van Maurik (1994) and Bentley (1994) draw similarities between the role of the facilitator and leadership, as both the position of facilitator and leader attempt to manage a situation or problem to the best of their abilities. One clear distinction between leadership and facilitation, however, is that with leadership a leader guides a team to move towards a specific direction, whereas the facilitator has a more observational role. They still guide the learning process, but they should encourage a team to take control of their own learning process without guiding them towards a specific outcome (Bentley, 1994; Macneil, 2001). Furthermore, LCs work with external facilitators, which is beneficial as the facilitator will

be unaware of the in-depth characteristics of the task content (Van Rees et al., 2022). This is beneficial for the group, as the unfamiliarity of the facilitator allows them to act in an objective way, which in turn encourages team members to share, explain and discuss the implicit knowledge more than would otherwise be the case (Van Rees et al., 2022). In this view, members of the LC become more responsible for the self-regulation of their learning (Corporaal et al., 2021), which in turn indicates that the behavior of the facilitator will change over time, as the members of the LC become more and more independent with regards to their own learning. The definition of Kolb et al. (2008) shows the opposite, as they believe a facilitator is responsible for guiding group processes and discussion, achieved by interacting with the members through asking questions and being critical (Van Maurik, 1994). This view postulates that the role of the facilitator is flexible, with their main influence on the group being to decide when and how to intervene (Hunter et al., 2009; Shaw et al., 2010). The facilitator should remain vigilant for new information or insights during LC meetings, allowing them to adapt to new situations effectively, indicating that the behavior of the facilitator does not change much over time. Despite these definitions about the role of the facilitator being different, Vermunt & Verloop (1999) have shown that there is a complex interaction between the self-regulation of the facilitator and the self-regulation of members, which opens the possibility of multiple ways in which the initiating and supporting behavior of the facilitator change. That being the case, all definitions agree that the facilitator's role includes guidance and support with regards to the learning process of the LC and all members in it. There is a lot of research within educational contexts on the ways in which educators (i.e teachers and professors) can stimulate the learning of their students, which has not been explored for the facilitator yet, despite a LC being an educational context and the facilitator being a key role within this context.

Autonomy support

Within educational contexts, participants vary in the motivation they have to perform their learning tasks and their studying (Ryan & Deci, 2000a). The participants can either be intrinsically or extrinsically motivated (Habgood & Ainsworth, 2011). Intrinsic motivation is characterized by a feeling of pleasure when performing an activity and a desire to perform the task for the task itself, rather than extrinsic rewards or punishments. Extrinsic motivation on the other hand concerns itself with external factors such as feelings of guilt or shame, as well as tangible rewards or punishments (Lepper, Corpus, & Iyengar, 2005). These types of motivation, intrinsic and extrinsic, find their roots within the self-determination theory (SDT) , which is a framework that provides explanations for human motivation and functioning (Deci & Ryan, 1985, 2000). What type of motivation an individual experiences while performing a task is linked to the concept of autonomy. Those who feel they are in control of their own decisions, their thoughts and feelings experience a high degree of autonomy. Those who do not have that ability, for example by being internally or externally punished for certain behaviors, experience a low degree of autonomy (McElhaney, Allen, Stephenson, & Hare, 2009). When a high degree of autonomy is present, an individual voluntarily chooses to engage in a certain task based on their own values, interests and wants. This is known as autonomous motivation (Gillet, Vallerand, & Lafrenière, 2011). In the motivational literature there are two types of autonomous motivation: Intrinsic motivation and identified regulation. Intrinsic motivation occurs through the enjoyment and the fulfillment of the task itself. Meanwhile, identified regulation is an autonomous form of extrinsic motivation. With this type of motivation, an individual may engage in a task not because that task inherently enjoyable, but rather the values and goals of the individual align with those of the task itself, therefore the task holds value to the individual making them choose

to engage in it (Deci & Ryan, 1985; Ryan & Deci, 2000b). In contrast to autonomous motivation, there is controlled motivation. Controlled motivation includes two types of extrinsic motivation: external regulation and introjected regulation. Those engaging in external regulation are attempting to attain rewards or to avoid punishment through interaction with the task. Introjected regulation is a little more internalized, where those engaging in it are attempting to avoid feelings of shame or guilt and trying to maintain a sense of self-worth, by meeting the specific requirements they experience from their environment (Deci & Ryan, 2008). There is strong scientific support that autonomous motivation shows great benefits within educational settings. When compared to controlled motivation, students that are autonomously motivated show higher psychological well-being (Núñez, Fernández, León, & Grijalvo, 2015), better academic performance (Kusurkar, Ten Cate, Vos, Westers, & Croiset, 2013) and they show higher engagement (Hafen et al., 2012).

To promote autonomous motivation within their students, educators should take into account that they can act in a way that supports the autonomy of their students (Deci & Ryan, 1985). Autonomy support refers to the way in which interpersonal behavior between student and educators can identify and nurture the students' inner motivation (Deci & Ryan, 1985; Reeve, Deci & Ryan, 2004). Autonomy support is the atmosphere educators create, where their students do not experience pressure to behave in specific ways, rather the educator takes responsibility to encourage all the students to be themself (Ryan & Deci, 2004). For an individual to feel that their autonomy is being supported, there are certain conditions that need to be met according to Deci, et al. (1994). These researchers found that providing meaningful rationale, acknowledging negative feelings and using non-controlling language are key interpersonal components for educators to make their students feel that their autonomy is supported. Furthermore, by providing

meaningful choices as well as by strengthening the inner motivational resources of students, the feeling of their autonomy being supported can grow even more. Later on, Assor et al. (2004) added the element of unconditional positive regard and Reeve (2009) added the element of displaying patience to this list of conditions.

In earlier research, autonomy support was seen as contrasting with structure (Daniels & Bizar, 1998). This was due to the fact that the concept of structure was misunderstood as control. Structure, however, is not the same as control and should be understood as the clarity an educator provides towards their students about the educational outcomes that are strived for and how to effectively reach those outcomes (Skinner & Belmont, 1993). Providing clear structure through guidelines and expectations, contrary to what earlier research believed, helps in preventing chaotic situations in which educators are contradictory and unclear. Instead of structure being the opposite of autonomy support, the two concepts strengthen each other and should be deployed together. Using both autonomy support and structure has positive effects on student motivation as well as on student engagement with the material (Jang, Reeve, & Deci, 2010, Sierens, Vansteenkiste, Goossens, Soenens, & Dochy, 2009). The actual opposite of autonomy support has been identified as controlling behavior (Reeve, Jang, Carrell, Jeon & Barch, 2004), forming a continuum ranging from controlling behavior on one end to very autonomy supportive on the other (Soenens & Vansteenkiste, 2005). On this continuum, the end of autonomy support implies promoting choice, allowing freedom to perform tasks in the students preferred way and encouraging initiative taking, whereas the controlling side is characterized by deadlines and external rewards and punishments. More specifically, the opposite of autonomy support is controllingness (Reeve & Jang, 2006; Tessier, Sarrazin & Nitoumanis, 2008). The definition of controllingness is the interpersonal behavior displayed by an educator to force their students to

comply with a prescribed way of thinking. Educators that engage in a lot of controllingness motivate their students through extrinsic rewards and punishments and use pressuring language (e.g 'have to' or 'must'), creating an environment where the students are not handling in accordance with their inner motivational resources. Autonomy supportive educators on the other hand offer choices, use non-controlling language, provide informative feedback and accept expressions of negative affect from their students (Reeve, 2009; Su & Reeve, 2011). When an educator acts in an autonomy supportive manner, and the students perceive that their autonomy is being supported (Hagger et al., 2007), the autonomous motivation that students experience increases. In addition to this, providing autonomy support within a classroom is shown to relate to greater well-being (Black & Deci, 2000), better student performance (Vansteenkiste, Simons, Lens, Sheldon & Deci, 2004), higher levels of student engagement (Hafen et al., 2012), higher levels of intrinsic motivation (Reeve & Jang, 2006), better time management and concentration (Vansteenkiste, Zhou, Lens & Soenens, 2005), more creativity and less feelings of stress (Nuñez & Leon, 2015).

In collaboration with the broader research from Assies (2024) from the Hanzehogeschool Groningen, this explorative case study will attempt to gain insight into the autonomy support deployed by the facilitator within the LCs in EnTranCe. Drawing from the connection between educators and autonomy support already established within the literary body of motivational research, the research question that this study seeks to answer is: What is the role of a facilitator within an EnTranCe learning community with regards to autonomy support?. This research question will be answered through the use of the following two sub questions;

1. What is the current role of the facilitator within learning communities in EnTranCe with regards to autonomy support?

2. How does the autonomy support within a facilitator within the learning communities of EnTranCe change over time?

Method

Participants

This research is an explorative case study. The case used in this study is one facilitator from EnTranCe, who is responsible for two different LCs. In total, four sessions (two from each LC), each around two hours long, were observed and used as data. These sessions will henceforth be referred to as LC A1, LC B1, LC A2 and LC B2, where A/B refers to the LC and 1/2 refers to the number of the session. Although EnTranCe is an international environment, the LC sessions were held in Dutch or English interchangeably. The participants of the LCs were lecturers, field experts, clients but predominantly students. The facilitator is a professor at the Hanzehogeschool Groningen and has a lot of in-depth knowledge on the topics discussed in the two LCs. EnTranCe nominated this specific facilitator for this study as he is the most requested facilitator by the student body.

Research design

An explorative research design was chosen, to create a first snapshot of the current situation, both with regards to the current role of the facilitator regarding autonomy support and the change of autonomy support over time. A qualitative approach was used, as this provides this explorative study with a rich and broad view of the empirical situation, allowing future research to use focussed quantitative approaches. The qualitative character also allows for the flexibility necessary to answer both questions. Furthermore, this study is part of a larger study at the Hanzehogeschool Groningen. In the study by Assies (2024) he aims to improve the functioning of the facilitator within the LCs at EnTranCe. This study is a smaller part of this research.

Instruments

In total there were 3 instruments used, which were all focused on providing more insight into the autonomy support displayed by the facilitators. The instruments used are: a codingbook (Appendix A) with audio recordings, an observation scheme, and finally a semi-structured interview. All three of the instruments will be discussed in more detail below.

Codingbook and audio recordings

Audio recordings of the observed LC sessions were made and used to analyze the data, using a bottom-up approach to identify autonomy supportive statements. Using the general definition of autonomy support:'The interpersonal behavior teachers provide during instruction to identify, nurture, and build student's inner motivational resources', a codingbook was constructed detailing all the steps of transcribing the audio recordings into usable data. The codingbook is based on the 'Levels of stimulation' by Vondel et al (2017). These levels of stimulation were then adapted to the current data. This led to six levels of autonomy support utterances: Instruction, Providing information, Closed/Knowledge-based question, Open question, Encouragement and Stimulating follow-up (see Table 1). The levels function as an ordinal scale, with 'Instruction' being the lowest level and 'Stimulating follow-up' as the highest level. The levels 'Instruction', 'Providing information' and 'Closed/Knowledge-based question' are clustered together as the low levels of autonomy support while the other three levels (Open question, Encouragement and Stimulating follow-up) are clustered as high levels of autonomy support.

Table 1

Levels of autonomy support

	Example
Instruction	*We will start by introducing ourselves.*
Providing information	*You can also use a thermographic camera.*
Closed/Knowledge-based question	*The gas is also very cheap, I assume?*
Open question	*How can hydrogen contribute within the buildings?*
Encouragement	*It is very inspiring, you have certainly shown us that!*
Stimulating follow-up	*Perhaps there are some more questions about this, anyone?*

Note. The levels of autonomy support utterances and an example per level. The levels are ordered from lowest at the top to highest at the bottom.

Observation scheme

The observation scheme was used as an observation tool and handhold during the LC sessions. The observation scheme was used to write a descriptive analysis of the LC sessions. It provided an overview of the context in which this study took place. The observation scheme used a simple structure, dividing the LC sessions into three phases: Intro, Core and End. The moment to moment behaviors of the facilitator would be written down for each phase of the session. This includes for example their interactions with the participants, their expressions, their questions as well as their body language. This instrument provided an in-depth recreation of the flow of the session and the facilitator's role during the session.

Semi-structured interview

Lastly, the semi structured interview focussed on answering the first research question, mainly focussing on the perspective the facilitator held with regards to their role. It was also meant to uncover restrictions not observable during the observations (e.g limited access to resources). For the interview there was an extra facilitator available, facilitator B. By conducting the interview with both the facilitator A and facilitator B, there was a more robust set of answers that could be compared against one another to spot similarities and contrasts in their experiences.

The questions were mainly targeting both successes and failures the facilitators had experienced

in their role as facilitator. Examples of main questions that were always asked are 'Could you

point at a moment in which you experienced success within the LCs with you as facilitator?' and

'Could you point to a moment in which you were not satisfied during the LCs with you as

facilitator?'. For all the main questions asked during the interviews, there were possible sub

questions that would allow for more follow-up on the answers given by the facilitator.

Furthermore, as this is an exploratory study, the interview also proved useful in providing the

context that the facilitator works in and how the facilitator perceives this context themself.

Analysis

First a descriptive analysis will be conducted using the definition of Corporaal et al.

(2020) and the three core aspects of an LC by Van Rees et al. (2022). The observation scheme

and interview will contribute to the descriptive analysis. The observation scheme will be used as

a framework, by scanning for commonalities between the different sessions. The descriptive

analysis will show how the LC sessions went and what was observerd over the different sessions.

The interview supplements this process by adding the facilitator's perspective.

Next, the first research question will be answered with the help of the transcripts. A

visual inspection will be conducted to show which levels are used most frequently, with in

particular what levels are used most and least both in total and session specific.With the help of

the descriptive analysis, this will provide a clear overview of the current situation regarding the

role of the facilitator and their autonomy support provided.

The final research question will use the frequencies obtained from the transcripts. A

visual inspection will show which levels of autonomy support show the largest change, the

smallest change and the general trends visible in these changes. The change in levels of

autonomy support will first be inspected over all the sessions, then within the same LC (A or B) and finally within sessions (from intro to core). For the change of autonomy support within the same LC, only the core phase for LC B has been taken into account, as the audio recording did not include an intro for LC B2. For the change within sessions the end phase is not included, because the data from the audio recordings during the end phase is unintelligible.

Results

Descriptive analyses

During the study, there were a total of four LC sessions equally spread over two different LCs (two sessions per LC). All of these LC sessions were led by one facilitator. All of the LC sessions have been used for data collecting, except for the Intro for session LC B1, as there was no audio recording for the intro of this session.

The LCs at EnTranCe do exhibit an interprofessional nature, as there are indeed a mix of different disciplines and professions present, however, the focus of the LCs at EnTranCe is geared towards the students. The insight that teachers and field experts provide is meant to improve student learning. This is in contrast with the definition of a LC, which states that individual and group learning is encouraged, with personal growth for all members involved. The LCs at EnTranCe instead do not show learning and growth for all members but rather only for the student participants.

It seems that the first core aspect of a LC is represented, participants appear to feel safe within the LCs in EnTranCe. The second core aspect is less represented. Although the LCs are in line with the daily work of all the participants, it is not always a motivating environment. Many participants minimally participate during the LC sessions, often only sharing their thoughts once or twice. The core phase of the LC sessions always included participants giving presentations,

which was not conducive to the active participation of the LC participants. The third core aspect

that a facilitator should be assigned to guide the learning process is partly fulfilled. Though there

is a facilitator present, he often engages the participants through the perspective of an 'expert'

rather than being a guide to the participants' learning. Moreover, according to this aspect LCs

should work with an external facilitator precisely because he is further removed from the

in-depth knowledge discussed by the participants of the LC, but the facilitator observed at

EnTranCe is an internal facilitator. In summary, the three core aspects of a LC are not sufficiently

ingrained in the LCs at EnTranCe.

The intro of each LC session was characterized by short progress updates from the

different project groups within the LC. The facilitator would initiate this by asking the different

groups what they were working on, typically following up with a few (closed) questions. The

core of the sessions would include multiple presentations. Some of these presentations were

announced before the session had started, but most of the core had a flexible structure, allowing

participants to present their topics when the facilitator deemed it relevant for the LC. Lastly, the

end of the sessions was filled with smaller, interindividual discussions happening simultaneously.

What is the current role of the facilitator within learning communities in EnTranCe?

An overview of the autonomy support utterances can be found in Table 2. In total, there

were 394 utterances from the facilitator, 212 of which had to do with autonomy support. This

table shows the total number of times that each level of autonomy support was used by the

facilitator over the four sessions. The usage of these autonomy support utterances is further

divided by whether they were used during the intro or the core of the session. There are no rows

for the end phase of the session, as the end of the sessions always included open discussion,

making the end phase portion of the audio recordings unintelligible. The intro of LC B2 is also

left empty, as there was no audio recording for the intro phase of this particular LC session.

Table 2

Autonomy support utterances per session

	LC A1	LC B1	LC A2	LC B2	Total	Average
			Intro			
Instruction	4	5	6	-	15	5.00
Providing Information	6	4	1	-	11	3.67
Closed/Knowledge-based question	4	8	5	-	17	5.67
Open question	1	3	3	-	7	2.33
Encouragement	2	2	2	-	6	2.00
Stimulating follow-up	1	4	1	-	6	2.00
Total	18	26	18	-	62	20.67
			Core			
Instruction	2	3	6	4	15	3.75
Providing Information	5	19	10	7	41	10.25
Closed/Knowledge-based question	13	1	27	7	48	12.00
Open question	3	0	8	1	12	3.00
Encouragement	1	6	9	3	19	4.75
Stimulating follow-up	4	2	6	3	15	3.75
Total	28	31	66	25	150	37.50
			Total			
Instruction	6	8	12	4	30	7.50
Providing Information	11	23	11	7	52	13.00
Closed/Knowledge-based question	17	9	32	7	65	16.25
Open question	4	3	11	1	19	4.75
Encouragement	3	8	11	3	25	6.25
Stimulating follow-up	5	6	7	3	21	5.25
Total	46	57	84	25	212	53.00

Note. The table displays the total amount of autonomy support utterances by the facilitator over the four LC sessions. The data for the intro from LC B2 is left blank, as there was no audio recording for this data.

Figure 1 shows a visual overview of the total amount of autonomy support utterances. It

shows that the low levels of autonomy support (Instruction, Providing Information and

Closed/Knowledge-based question; 30, 52 and 65 respectively) were used a lot more by the

facilitator than the high levels of autonomy support (Open question, Encouragement and Stimulating follow-up; 19, 25 and 21 respectively).

In total, during session LC A2, the most amount of autonomy support utterances were used (84), with in particular 'Closed/Knowledge-based question' being used more than the other levels. Aside from the level 'Providing information', LC A2 was the session where all of the individual levels of autonomy support were used the most compared to the other sessions as well. The only exception to this is the level 'Providing information', which was used an equal amount (11) during LC A1 and was used more during LC B1 (23).

Figure 1

Total autonomy support utterances
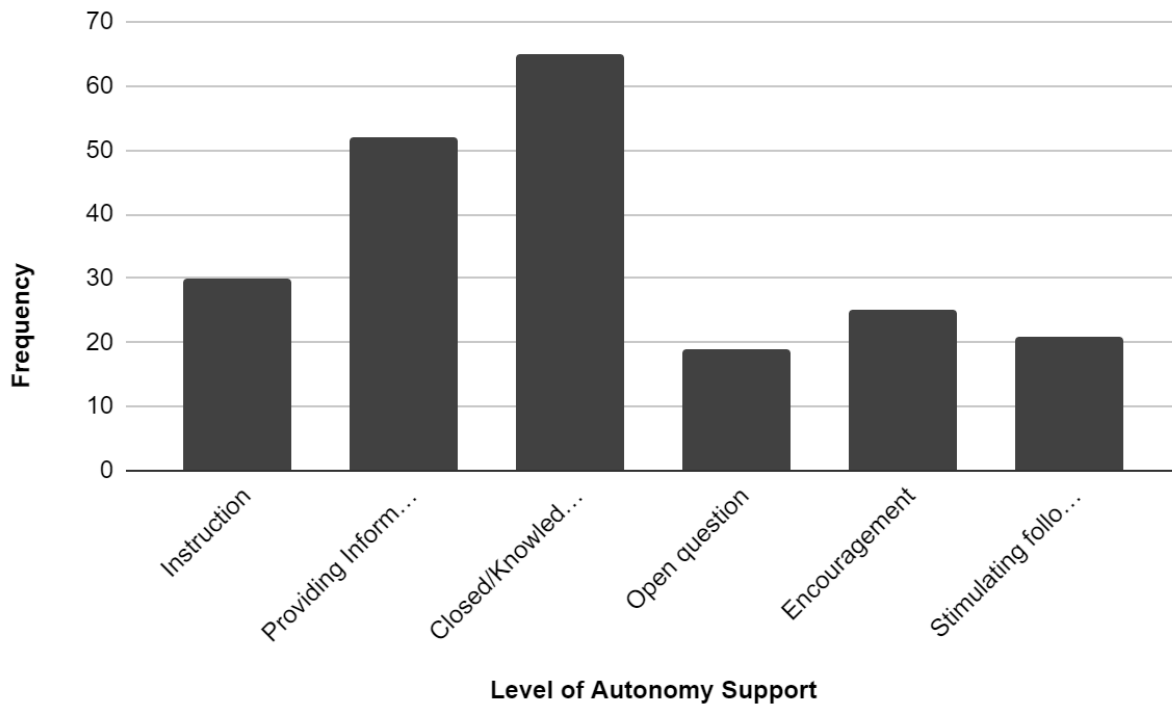
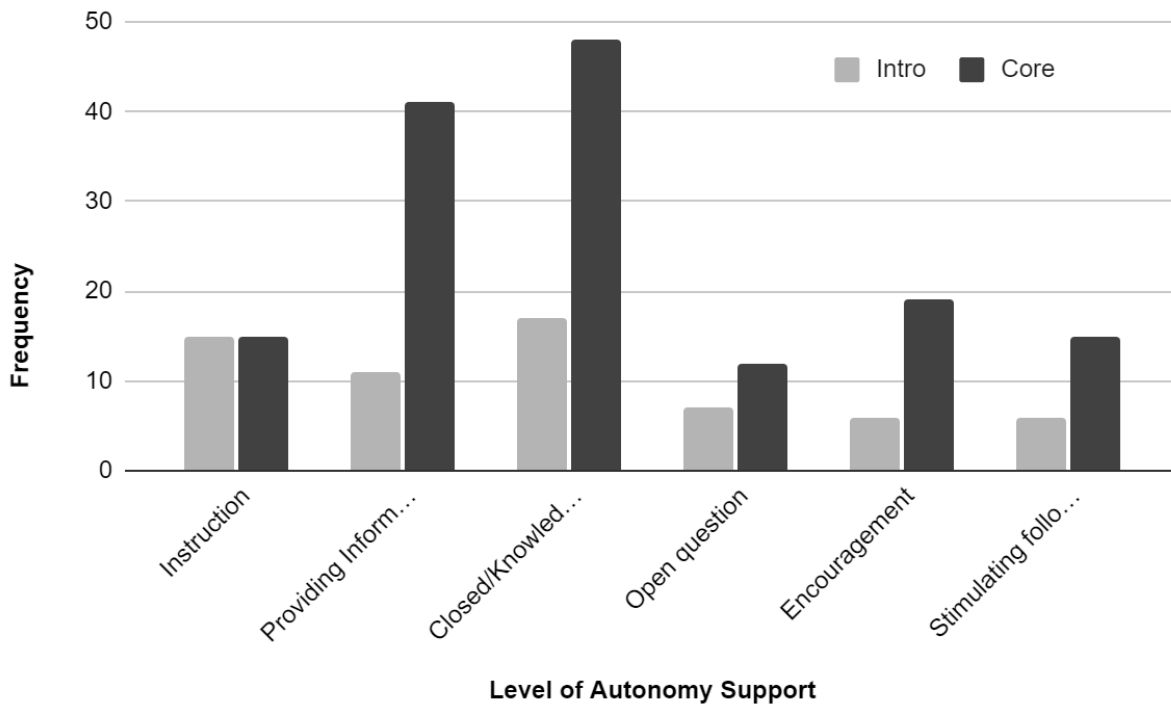*Note.* Frequency of autonomy support utterances per level

The two levels of autonomy support utterances that were used the most show an interesting pattern. During LC A1 and A2, the level 'Closed/Knowledge-based question' is used

the most (17 and 32 respectively), whereas with LC B1 'Providing information' is used the most

(23). A similar effect can be seen for the level 'Open question'. Though this is a much smaller

difference, this level is also used more during LC A when compared with LC B (see Table 2).

Finally, comparing the total amount of autonomy support utterances used during the intro

(62) and the core (150) (see Figure 2), it is visible that autonomy support is utilized more during

the core of the LC sessions. The levels 'Providing information' and 'Closed/knowledge-based

question' show the greatest difference between intro and core, from 11 to 41 and 17 to 48

respectively. The three high levels of autonomy support show smaller increases in usage, the

biggest difference being the level 'Encouragement', from six to 19. The level 'Instruction'

remains stable at 15.

Figure 2

Autonomy support utterances total during the intro and core
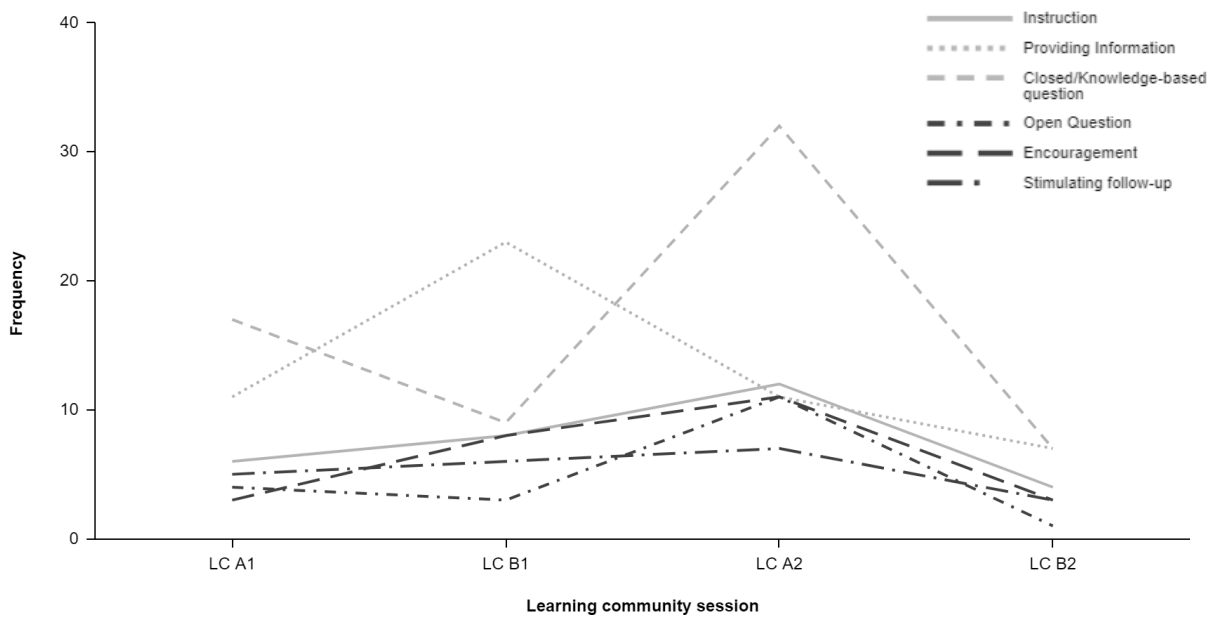

Note. Frequency of autonomy support utterances per level during intro and core

How does the autonomy support within a facilitator within the learning communities of EnTranCe change over time?

Over the LC sessions, the high levels of autonomy support do not show much change (see Figure 3). All three of the high levels show small increases up to LC A2, with the levels 'Open question' and 'Encouragement' reaching just above 10 utterances during the session LC A2, both being used 11 times. After this session, both these levels show a decline moving toward LC B2, as 'Encouragement' is used three times, while there is only one utterance from the level 'Open question'. The level 'Stimulatig follow-up' does not show much change at all, starting at five uses during LC A1, climbing to seven utterances during LC A2 before falling down to three utterances during LC B2.

Figure 3

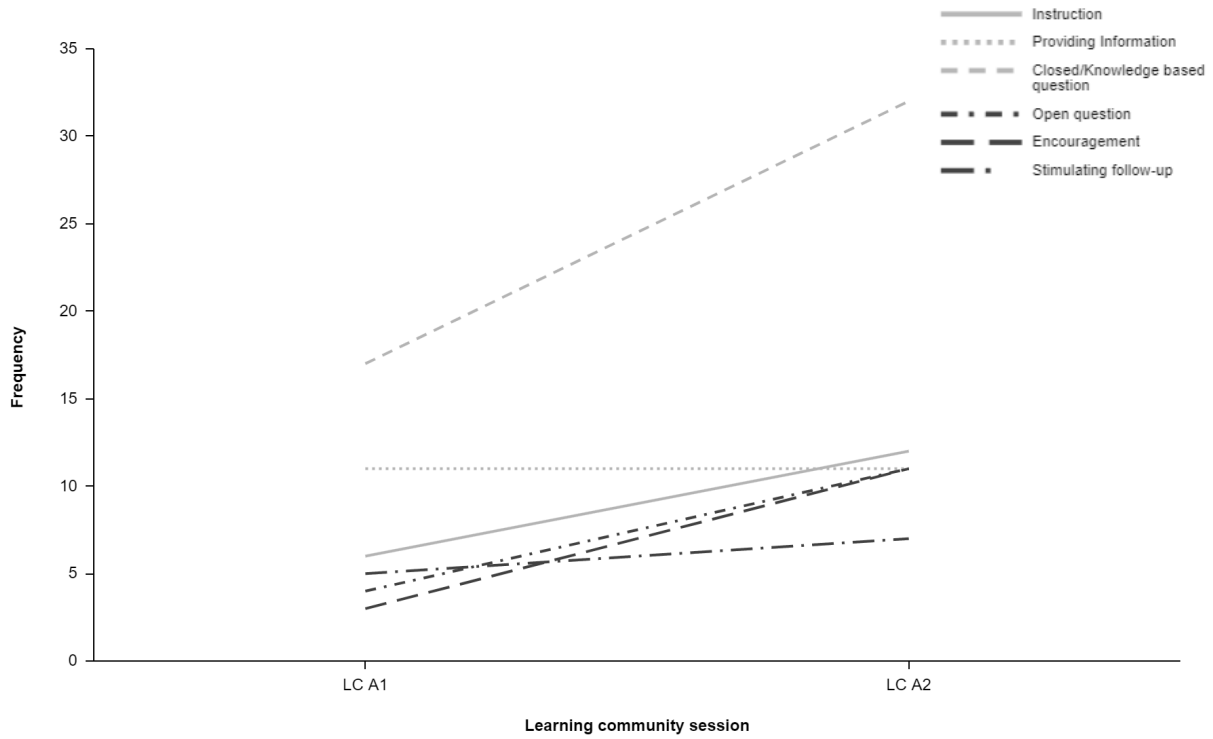*Change in autonomy support utterances over all the sessions*

Note. Change in frequency of autonomy support utterances over all sessions

The level 'Instruction' shows a similar development to that of the high levels of autonomy suppor. Starting at six utterances during LC A1, rising to 12 utterances during LC A2 after which it decreases to only four utterances during LC B2. The other two levels of low autonomy support, however, show much more change. The level 'Providing information' starts with an increase from 11 to 23 from LC A1 to LC B1, then it decreases to 11 from LC B1 to LC A2, further decreasing to seven in LC B2. The level 'Closed/Knowledge-based question' has the most fluctuations. It decreases from 17 during LC A1 to nine during LC B1, increasing to 32 utterances during LC A2 and finally decreasing all the way down to seven utterances during LC B2. A final interesting point is that the frequency of utterances for all the autonomy support levels decreases from LC A2 to LC B2.

Next, the change of autonomy support over the same LC. Looking at the change of autonomy support within LC A reveals that, except for the level 'Providing information', the amount of autonomy support utterances increased for all levels of autonomy support (see Figure 4). The level 'Stimulating follow-up' shows a small increase from LC A1 to LC A2, the levels 'Instruction', 'Open question' and 'Encouragement' show a moderate increase, while 'Closed/Knowledge-based' question shows a steep incline. The level 'Providing information' remains stable at 11 utterances.

Figure 4

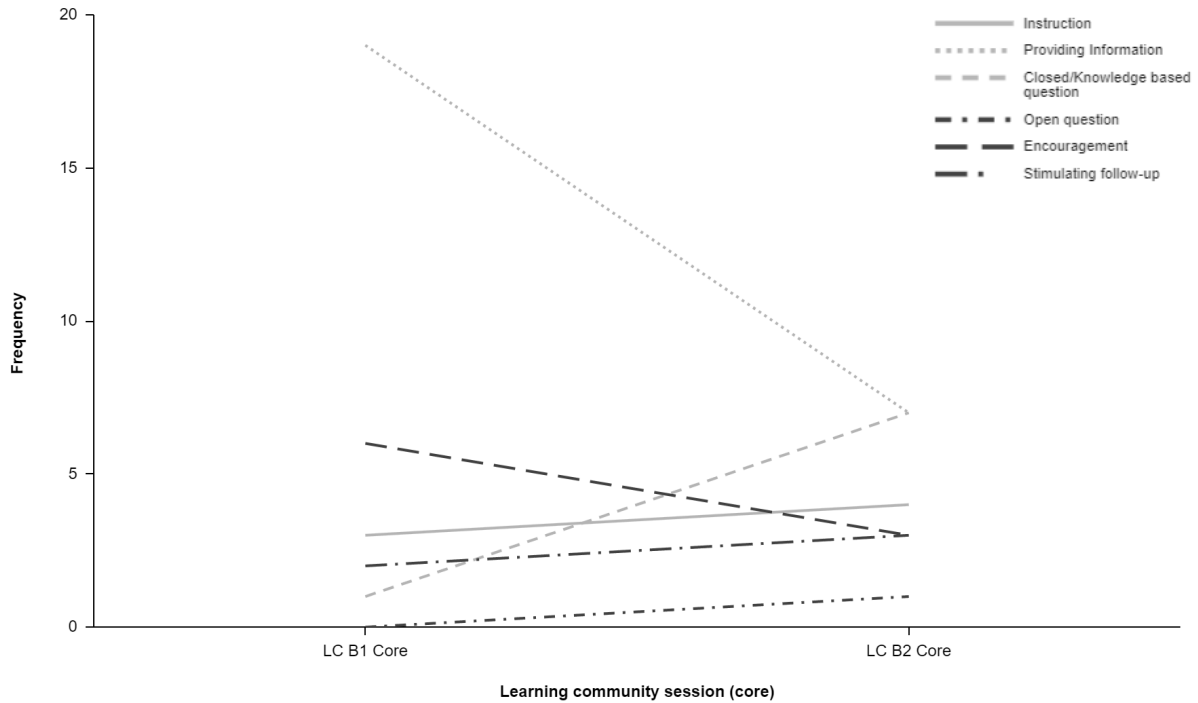*Change in autonomy support utterances in LC A*

Note. The change in frequency of autonomy support utterances in LC A

Within LC B there are four levels that show an increase (see Figure 5). For the level 'Closed/Knowledge-based question' this is a moderate to large increase, whereas the levels 'Instruction', 'Open question' and 'Stimulating follow-up' only have very small increases between LC B1 and LC B2. The remaining two levels show a decrease in uses, with 'Encouragement' showing a small decrease and 'Providing information' showing a strong downwards slope.

Figure 5

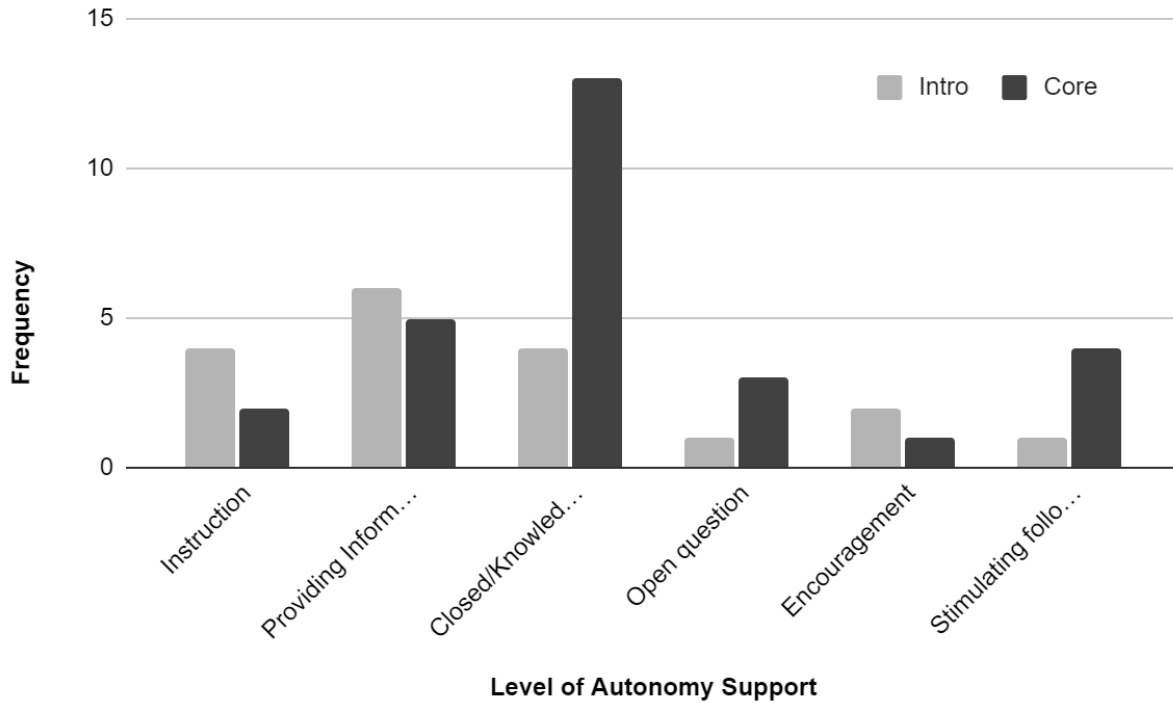*Change in autonomy support utterances in LC B*

Note. The change in autonomy support utterances in LC B. Only the core of the LC B sessions were used

Finally, the change of autonomy support within the sessions. For LC A1, the majority of the autonomy support levels do not show much change in their usage from the introduction to the core of the sessions (see Figure 6). The levels 'Instruction', 'Providing information' and 'Encouragement' show a small decline from intro to core, whereas the levels 'Open question' and 'Stimulating follow-up' show the opposite effect. These two levels increase slightly from the intro to core. The most notable change in LC A1 is the level 'Closed/Knowledge based question'. This level of autonomy support shows a vast increase in frequency from intro to core, increasing from four utterances during the intro to 13 utterances in the core.

Figure 6

Change of autonomy support within LC A1

Note. Frequency of autonomy support utterances in LC A1 during intro and core

In LC A2, all of the levels of autonomy support, apart from the level 'Instruction', show an increase in usage from intro to core (see Figure 7). The level 'Instruction' remains stable at six utterances during both intro and core. The most notable change is in the level 'Closed/Knowledge-based' question, which increases from five utterances during the intro to 27 utterances in the core. The other levels of autonomy support show smaller changes, with the next biggest change being in the level 'Providing information', which increases from one utterance in the intro to 10 utterances during the core.

Figure 7

Change of autonomy support within LC A2
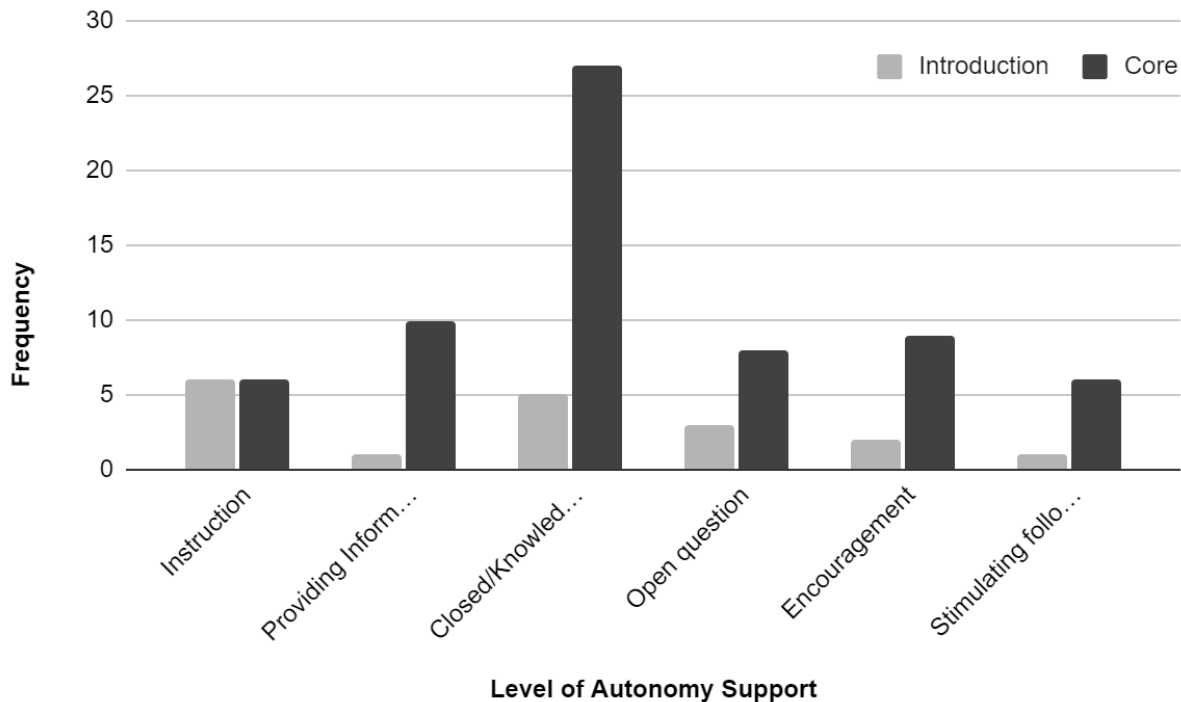
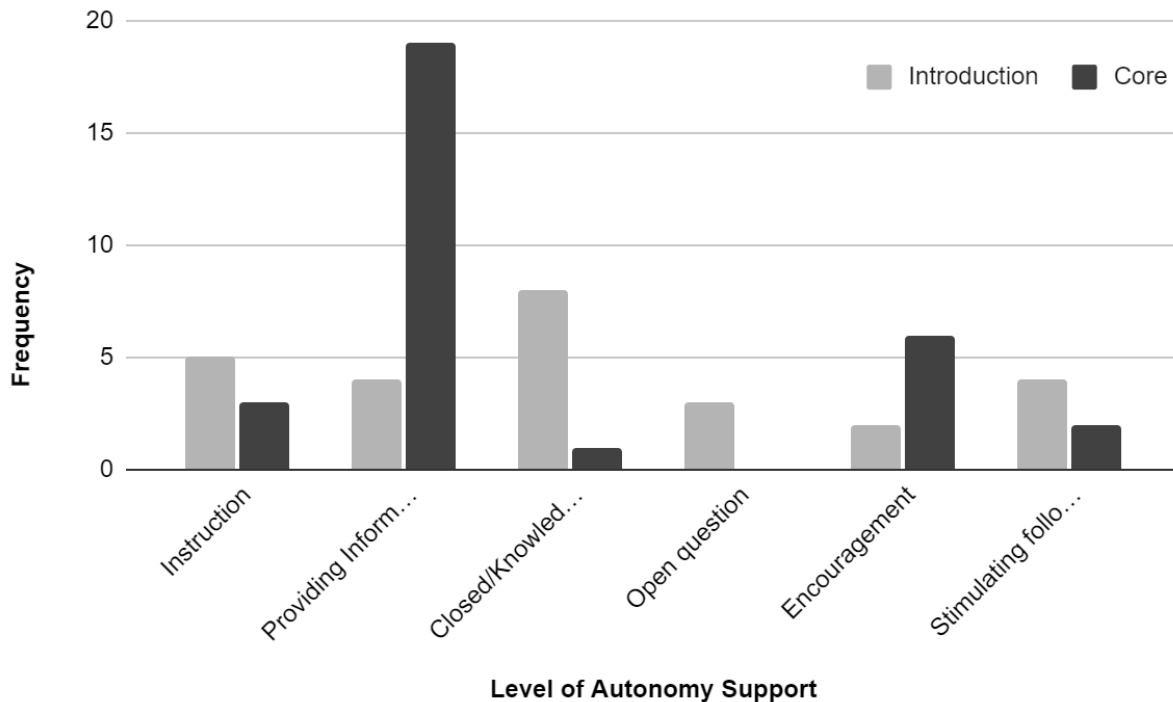*Note.* Frequency of autonomy support utterances in LC A2 during intro and core

Comparing LC A1 and LC A2 with each other, it becomes clear that for both these sessions, the level that showed the most change is 'Closed/Knowledge-based question', although the change in LC A2 is much larger than the change in LC A1 (an increase of 22 compared to an increase of nine). Furthermore, LC A2 has a more positive trend from intro to core overall, as all the levels show an increase in frequency (except for 'Instruction', which remains stable), whereas in LC A1 there are levels that show a decline.

In LC B1, the majority of the autonomy support levels show a decrease from intro to core (see Figure 8). Apart from the levels 'Providing information' and 'Encouragement' all the levels show a small decrease in frequency. While the direction of the level 'Encouragement' is positive, this change is small, increasing from two to six from intro to core. The notable change

lies with the level 'Providing information', which shows a large increase from intro to core, from

four to 19.

Figure 8

Change of autonomy support within LC B1

Note. Frequency of autonomy support utterances in LC B1 during intro and core

What is interesting, when comparing the change within sessions for LC A with LC B is

that in LC A the level that shows the biggest increase is 'Closed/Knowledge-based question'. In

LC B, however, the level 'Closed/Knowledge-based question' instead shows a decline.

Meanwhile in LC B the level 'Providing information' shows the biggest increase, which is not

the case for either LC A sessions, with LC A1 even showing a decrease in the level 'Providing

information'.

<div align="center">

Discussion

</div>

Conclusion

This exploratory study has attempted to provide insight into the amount of autonomy support used by a facilitator within EnTranCe. The results show that the facilitator does indeed provide autonomy support. However, the different levels of autonomy support were not used equally. The current role of the facilitator is represented by the usage of low levels of autonomy support, with the high levels being used sparingly. Furthermore, the facilitator provides more autonomy support during the core of the sessions. Finally, the LC appears to have an effect on the facilitator as well. In LC A the facilitator gravitated towards the level 'Closed/Knowledge-based question', whereas in LC B this was the level 'Providing information'.

For the second research question the findings show that the autonomy support provided does not change much over the sessions. Though the levels 'Providing information' and 'Closed/Knowledge-based question' show fluctuations over the sessions, there is no common trend to be found. For the change within a LC, the findings show that there is a positive trend for total autonomy support provided with regards to LC A. All the levels of autonomy support show an increase from LC A1 to LC A2, with in specific 'Closed/Knowledge-based question' showing a big increase. For LC B, the findings show there is no trend for total autonomy supported provided, as some levels increase while others decrease. Finally, the findings for the change within sessions indicate that the levels of autonomy support only show small changes from intro to core, either increasing or decreasing. It also shows that there is one level of autonomy support for each session, which in contrast to the other levels does show a large increase.

Taking a look at the broader educational literature there is a possible explanation for the difference between the two LCs. In this study, the facilitator and their autonomy support has been studied in isolation. However, in the literature, there is support for looking at education through a

complex dynamic systems approach, wherein the student and the teacher simultaneously modify

and are modified by their changing behaviors during interaction (Steenbeek and Van Geert,

2013). Essentially, from a dynamic systems approach, learning happens over time and is shaped

by the interaction between individuals within the context (Fischer and Bidell, 2006). Looking at

the LCs within EnTranCe through the lens of the dynamic systems approach, it is not surprising

that the two LCs show different patterns. Both LCs share similarities but are ultimately different

contexts and different interactions happen within this context, resulting in different usage of

autonomy support.

Limitations

The biggest limitation of this research is the limited amount of data available. During the

initial phases of this study, the intention was to gather data from multiple facilitators. However,

due to outside influence, the amount of data available for collecting and processing kept

decreasing, eventually leading to only data from one facilitator being usable. With the limited

data in this study, it was difficult to uncover strong patterns. Furthermore, only having access to

the data of one facilitator limits the generalizability of the findings, being less representative of

the general role of the facilitator. In short, the robustness and generalizability of the current

findings are not at an ideal level. Repeating this or similar research with other facilitators in

EnTranCe can strengthen the findings of this study further.

The next limitation is the change in observation scheme made during the study. Before

the first observation, a more in-depth observation scheme was constructed in collaboration with

Assies (2024). This observation scheme included targeted behaviors that would indicate

autonomy support. During the first session, it became apparent that this would not work and the

observation scheme had to be simplified into the phases intro, core and end, forcing a more

descriptive approach to the LC sessions. Although the current observation scheme still proved helpful in writing the descriptive analyses, losing the first observation scheme meant that there was no coding for autonomy support for non verbal behaviors during the sessions. Having data on the non verbal autonomy supportive behavior would have resulted in a set of more well rounded findings.

The third limitation was the lack of neutrality from the facilitator. A facilitator should remain neutral in the decisions from the group (Kolb et al. 2008) and one of the core aspects of an LC is that they work with external facilitators. The facilitator in this study is internal to the organization and has in-depth knowledge about the topics discussed. He would often 'solve' the problems for the participants by using his expert knowledge. This would either be done by providing information (e.g 'The thermographic camera can be used for that') or asking closed, suggestive questions (e.g 'Have you looked at theory X?'), both of which were measured as forms of autonomy support. As it happens, the findings show that these two levels are most used which could be because of the expert knowledge the facilitator brings to the LC.

A fourth limitation is the lack of a common goal or common problem within the LC. One of the core aspects of a LC is everyone sharing a common problem to solve or goal to work towards.. Although the participants discuss the same themes (e.g energy transition, heat loss, hydrogen power etc.), none of their projects are the same. In turn, the group learning processes seem to happen on the project level rather than the LC level. Having multiple group projects within the LC makes it more difficult to guide all of them, as more resources are expended remembering who is working on what. This creates difficulty in providing autonomy support to all members, specifically with a facilitator that operates from an 'expert' point of view.

A final limitation is the amount of autonomous motivation the participants already possess. The literature states that students will only be autonomously motivated in activities they find either interesting, novel or challenging (Ryan & Deci, 2000b). However, it is important to note that these findings are based on students of highschools, where the environment forces the students to engage in activities they do not find interesting. In the environment in this study, this is not the case. The LCs within EnTranCe are not a mandatory element for any of the participants, hence the participants that do show up for the LC sessions can already be expected to be higher in autonomous motivation than those that do not. Looking at the LCs through a dynamic systems perspective, it can be argued that, since the participants already innately have a higher autonomous motivation, the facilitator does not attribute many resources in supporting the participants autonomy.

Future Recommendations

Future research should attempt to understand the difference between an internal and an external facilitator for the purposes of a LC. At this moment, the literature argues for an external facilitator as he is far removed from the in-depth material discussed within a LC, which allows him to focus all their attention on the learning process and the guiding of the LC as a whole. While there are definitely benefits to being far removed from in-depth knowledge discussed in the LC, the LCs at EnTranCe show that it is not always convenient or possible for an organization to appoint an external facilitator. Creating a better understanding of the benefits and drawbacks of both internal and external facilitators can be an asset to uncovering new design principles for future LCs, allowing them to carefully pick and choose which works better for their LC.

A second recommendation is that, since the positive effects of autonomy support and autonomous motivation are already well established within both motivational and educational research, the coming research should endeavor to find these effects for facilitators and participants as well. This study has attempted to create an initial stepping stone that shows that facilitators provide autonomy support to their participants. Despite all research on LCs claiming that the facilitator role is key, there is little known about how facilitators go about their role and whether there is a benefit to them being able to provide autonomy support. This is a crucial concept to study. The benefits of autonomy support are well established in other educational contexts, it would be a loss to not attempt to recreate this effect and reap these benefits within the context of LCs.

Finally, the multiple definitions of a LC should be more clearly defined and differentiated within the literature. As it stands the Professional learning community, the Community of Practice and the definition of a LC as used in this research are all referred to as 'a learning community' in their respective literature. All three of these definitions discuss different forms of LCs, including different members, focus and ways of working. While this may seem minor at first glance, consider that what works in one situation does not (or has detrimental effects) in another. The biggest problem with the overlapping, muddy definition of a LC rises during the translation from theory to practice. In EnTranCe as well, the facilitators admitted that they thought of the term 'Learning Community' as a new 'buzzword' and they filled the facilitator role however they saw fit. In short, LCs can work, but only when applied to the right context.

Implications for research and practice

This study has shown that the established concept of autonomy support has a place within the research focused on LCs. As an explorative case study, it has shown that autonomy support is

indeed present within the role of the facilitator and that it should be uncovered further, to reproduce the benefits of providing autonomy support seen in the motivational and educational research. Furthermore, having provided this initial step into autonomy support within LCs, the role of facilitators is a little more defined than it was before.

The study by Assies (2024) has not used autonomy support for their research, instead he has worked with the competencies established by the International Association of Facilitators (IAF). There are six main IAF competencies, which are all further divided into sub competencies. None of these competencies specifically mention providing autonomy support, however, the relevancy of autonomy support is still reflected through many of the IAF competencies. For example the competency 'Use active listening, summarize and ask follow-up questions' as well as the competency 'Stimulate creative thinking' both have to do with the concepts of autonomous motivation and providing autonomy support. There are many more IAF competencies that share common ground with providing autonomy support. By showing that a facilitator provides autonomy support, this also supports the different IAF competencies that overlap with it.

While the qualitative research design has succeeded in providing a snapshot of the current role of the facilitator within LCs in EnTranCe, I am of the opinion that a quantitative design would have been more beneficial to the study from Assies (2024). The current study provides a broad perspective which is useful as an initial stepping stone for more in-depth research and discussion, however, I believe that it is missing a lot of the focus that would have been useful in attempting to improve the LCs within EnTranCe. As it stands, this study conveys the current situation present in EnTranCe, but it does not suggest what can be improved within

the LCs. Thus, I believe a quantitative design would have been more capable of suggesting the next course of action in optimizing the practical functioning of the LCs at EnTranCe.

To conclude, this study has provided a baseline for the study by Assies (2024), as well as other researchers aimed at LCs. This allows for future research to ask more focussed and in-depth questions aimed at understanding LCs better in addition to contributing to improving the current LCs and it has opened the doors for autonomy support research within the context of a LC.

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Appendix A

Codeerhandboek Autonomy Support van de Facilitator

Gijs Leber

s5681235

Audiobestand opslag

Sorteer de audio opnames op learning community en op datum. Doe dit door de naam van het bestand te wijzigen naar het volgende formaat: Taal_NaamLC_FacilitatorAanduiding_Datum (bv. Nederlands_DENNENOORD_FacilitatorA_2003). Zorg ervoor dat de audio opnames één van de volgende types bestanden zijn: .wav, .mp4, .m4a of .mp3. Dit zijn de type bestanden die door Microsoft Word omgezet kunnen worden in een transcript.

Automatische transcript functie in Word

Open online een nieuw Word document. Kies voor het blauwe microfoon-icoon. Kies voor de optie 'Transcribe'. Kies de juiste taal voor het audiobestand waar je een transcript van wilt maken (Nederlands of Engels). Luister naar het bestand tot je de facilitator hoort spreken. Kijk naar de corresponderende zin in de rechterkant van het scherm. Klik op het potlood bij deze zin en verander de naam van de spreker (nu aangegeven als 'Speaker x', waarin x een getal is) naar 'Facilitator'. Vink het vakje onder de naam aan waarin staat 'Change all speaker x' en klik daarna op het vinkje rechtsonderin om de aanpassing door te voeren. Nu wordt er in het transcript aangegeven wanneer de facilitator aan het woord is. Onderaan de transcribe pop-up staat er een blauwe knop 'Add to document'. Klik hierop en kies voor de optie 'With speakers and timestamps'. Maak een kopie van dit bestand onder dezelfde naam als voorheen, met als extra aanduiding RUW ervoor (bv. RUW_Nederlands_DENNENOORD_FacilitatorA_2003). Bewaar deze kopie als ruwe data en werk hier niet verder in.

Prepareren van het transcript, door het corrigeren van fouten in het transcript

Het transcript staat nu in het Word bestand, en er wordt aangegeven wanneer de facilitator aan het woord is en op welke tijdstippen in het audiobestand dit het geval is, wat het makkelijker maakt om hiernaar terug te refereren. Ga aan de hand van het audiobestand het

transcript door en verwijder onderdelen die niet relevant zijn. Noteer in *schuingedrukt* wat er in deze tussenmomenten gebeurt (bv. *Een deelnemer geeft een presentatie over duurzaam isolatiemateriaal*). Corrigeer in het transcript ook de zinnen van de facilitator, die door het transcribe proces niet volledig of op onjuiste manier waren opgepakt. Laat twee uitingen voor de uitingen van de facilitator en twee uitingen na de uiting van de facilitator over. Wanneer het hele bestand doorlopen is, is het transcript geprepareerd voor het scannen naar autonomy support. Maak een nieuwe kopie van dit bestand onder dezelfde naam, zet hier nu als extra aanduiding PREPPED_ voor (bv. PREPPED_Nederlands_DENNENOORD_FacilitatorA_2003). Bewaar deze kopie als geprepareerde data en werk hier niet verder in.

Scannen op proces of inhoudelijke uitingen

Ga terug naar het begin van het transcript en start de audio opname. In deze eerste slag doorloop je het transcript met oog op uitingen van de facilitator en verdeelt die in 2 categorieën: proces of inhoudelijke. Proces uitingen hebben te maken met de voortgang en flow van de sessie (bv. 'Oke, mooi gezegd, dan gaan we nu door met de volgende deelnemer' of 'Daar kunnen we straks verder of discussiëren, maar nu moeten we door met de volgende presentatie'). Wanneer je een proces uiting tegenkomt, doe deze dan <u>onderstrepen</u>. Inhoudelijke uitingen hebben te maken met de inhoud die besproken wordt tussen facilitator en deelnemers (bv. 'Dat isolatiemateriaal werkt veel beter' of 'Er is ook veel onderzoek gedaan naar waterstof in dat opzicht'). Inhoudelijke uitingen worden **dikgedrukt**. Beide soorten uitingen kunnen te maken hebben met autonomy support, wat wordt bekeken in de volgende slag.

Scannen op autonomy support uitingen

In deze tweede slag start je weer aan het begin van het transcript. Let op de uitingen van de facilitator die te maken hebben met autonomy support, met als definitie: 'The interpersonal

behavior teachers provide during instruction to identify, nurture, and build student's inner motivational resources' (Deci & Ryan, 1985; Reeve, Deci, & Ryan, 2004). Autonomy support heeft dus te maken met het creeren van een omgeving waarin er geen druk wordt uigeofend om op specifieke manieren te handelen, maar in plaats daarvan wordt iedereen aangemoedigd zichzelf te zijn (Ryan & Deci, 2004). Markeer deze uitingen in het <mark style="background-color: yellow">geel</mark>. Het is niet noodzakelijk om het hele audio bestand te luisteren, alleen de momenten net voor en net nadat de facilitator aan het woord is. Gebruik hiervoor de timestamps.

Autonomy support verdelen in verschillende levels

De derde en laatste slag begint ook aan het begin van het transcript. In deze slag wordt er nogmaals naar het audiobestand geluisterd. Let op de geel gemarkeerde uitingen, deze uitingen worden nu onderverdeeld in verschillende 'Levels of stimulation' (gebaseerd op van Vondel et al., 2017) en gemarkeerd met verschillende kleuren: 'Instruction' in het <mark style="background-color: red">rood</mark> (bv: 'We will start by introducing ourselves.'), 'providing information' in het <mark style="background-color: grey">grijs</mark> (bv: 'You can also use a thermographic camera.'), 'closed or knowledge-based question' in het <mark style="background-color: green">groen</mark> (bv: 'Het gas is ook erg goedkoop neem ik aan?'), 'open question' in het <mark style="background-color: yellow">geel</mark> (bv: 'How can hydrogen contribute within the buildings?'), 'encouragement' in het <mark style="background-color: cyan">cyan</mark> (bv: 'Het is ook heel inspirerend, dat heb je laten zien!') en 'stimulating follow-up' in het <mark style="background-color: magenta">roze</mark> (bv: 'Perhaps there are some questions about this, anyone?'). Op deze manier worden alle eerder gemarkeerde uitingen onderverdeeld in proces/inhoudelijke uitingen en in verschillende 'Levels of stimulation'.