



Facebook class groups of high school students: their role in establishing social dynamics and learning experiences

Jaël Muls¹ · Free De Backer¹ · Valérie Thomas¹ · Chang Zhu¹ · Koen Lombaerts¹

Received: 9 January 2019 / Accepted: 17 October 2019 / Published online: 31 October 2019
© Springer Nature B.V. 2019

Abstract

The study's main aim was to explore the role of Facebook class groups, created and managed by high-school students, in facilitating social dynamics and learning experiences. Fourteen Facebook class groups were observed online and students were subsequently questioned through focus-group interviews. Our findings show that Facebook class groups can promote both bonding and learning. Bonding can be enhanced because Facebook class groups foster a sense of solidarity and unity among students. Also, Facebook can stimulate (social) learning because students gain more insights in the subject matter and are challenged to carry out an evaluation of their own study methods and progress. Therefore, drawing on the theories of seamless learning and affinity spaces, we conclude that Facebook class groups are important for social affiliation and effective learning.

Keywords Class groups · Facebook · High-school · Social media

Introduction

Social network sites (SNSs) such as Facebook are often exclusively considered as social spaces. However, these sites evolve and so does the way in which students use them (Lampe et al. 2011). Students are not only using Facebook for leisure purposes, but also to communicate and collaborate closely on classroom activities (Lampe et al. 2011; Manca and Ranieri 2014). National School Boards Association (2007) found that more and more students use SNSs to discuss education-related topics online, especially homework issues. Therefore, Facebook groups are gaining popularity for students to discuss homework, whereas the schools' digital learning environments are used far less for this purpose (Mediaraven and LINC 2016). In particular, students in senior high school actively use Facebook, as well as Facebook Messenger and private Facebook groups. According to Dalsgaard (2016), these students usually create a Facebook group involving all students of the class.

SNSs, like Facebook, can facilitate informal communication about learning purposes and classroom activities (Lampe et al. 2011; Madge et al. 2009). Manca and Ranieri (2014) identify advantages in the simplicity, accessibility, and speed and ease of use of Facebook's

✉ Jaël Muls
jael.muls@vub.be

¹ Department of Educational Sciences, Vrije Universiteit Brussel, Brussels, Belgium

basic functions (e.g. wall, discussion groups, photos). In a study of adolescents' use of Facebook, Heyman (2015) considers that the combination of responsiveness, versatility and ease of use makes Facebook the most efficient communication tool compared with other media. In addition, Facebook can be beneficial for learners because it allows them to quickly ask questions and share information (e.g. about instructions and deadlines) and educational resources (e.g. study notes), encourages peer-to-peer dialogue, facilitates collaboration and interaction, and creates and manages work groups (Greenhow 2011; Manca and Ranieri 2013, 2014; Siemens and Weller 2011). Several students indeed experience SNSs and Facebook as useful and supportive for checking class-related material, interacting with peers, building mutual support and learning collaboratively, while simultaneously being engaged also in more-broadly social communication (Bosch 2009; Meishar-Tal et al. 2012; Selwyn 2009).

Despite the strong potential of Facebook being connected and networked to create, collaborate and contribute knowledge, there is relatively little empirical research has addressed this new communication and interaction phenomena (Cheung et al. 2010). Therefore, the current study examined the use of Facebook class groups for school purposes and how students perceived the role of Facebook class group in establishing social dynamics and learning experiences.

SNSs and social dynamics among students

Through their interaction and communication possibilities, social media and Facebook influence social dynamics, which we understand as the ongoing social processes and group behaviour resulting from the interactions of individual group members, as well as to the relationship between group-level behaviours and one's individual behaviours. More specifically, they offer students an extramural platform to talk and discuss issues, to find mutual and social support, to vent emotional feelings and to relieve school-related stress (e.g. by chatting online, students can blow off steam), which reinforces interpersonal relationships (Greenhow 2011; Manca and Ranieri 2014). Through these opportunities, Facebook might be able to encourage social connectedness and cohesion, community building, and socialisation among students (Greenhow 2011; Grieve et al. 2013; Madge et al. 2009; Manca and Ranieri 2014; Vlieghe et al. 2015; Weber et al. 2008).

Resulting from the above, different social and academic consequences for students are distinguished. First, social support, belonging and connectedness have been found to be strong determinants of engagement, motivation and persistence in educational settings (Greenhow 2011; McNeely and Falci 2004; Sarason et al. 1983) and to be associated with positive psychological outcomes such as lower depression and anxiety and greater subjective wellbeing (Grieve et al. 2013). Second, social support, connection and feelings of community might be supportive for a connected classroom climate. A Facebook class group is considered a supportive communication environment in which students feel a sense of connection with classmates, experience a sense of community and are mutually concerned about one another (Dwyer et al. 2001). Third, although university students initially use online social networks for fun, it can promote learning about peers and universities (Yu et al. 2010). Likewise, according to Madge et al. (2009), social media, especially Facebook, can contribute to students' social integration into the school environment because it helps students to settle into school life and aids in communication (especially about social events) among students. Online interactions might create a safe space for students who don't feel at ease or who are unable to express themselves (e.g. shy or introverted students)

(Bowers-Campbell 2008). However, it might discourage face-to-face communication as well, so that students miss opportunities to learn real-life social skills or even lose ‘real’ personal contacts (Manca and Ranieri 2014).

SNSs and learning experiences of students

Social interaction is considered an essential component of learning in the online environment (Bolliger and Inan 2012). Because Facebook supports social connectedness, socialisation and community building, it also provides opportunities to develop social and collaborative learning (Manca and Ranieri 2014). Social learning acknowledges the tectonic shifts in society from learning as an internal, individualistic activity (Siemens 2005) to interaction with the environment as crucial for all learning. The central premise of social constructivism is that knowledge and learning are not being an individual acquisition activity, but something that is socially constructed through interaction with others (social discourse) is precisely (Chen and Bryer 2012; Crook 2008; Lave and Wenger 1991; Vygotsky 1978). Thus, interaction with others can help students to learn and construct their own knowledge and learning processes (Lin 2011). Unlike teacher-centred educational theories (e.g. behaviourism), which demand only passive learner involvement and consider learning as an individual activity, social constructivism emphasises the importance of learner-centredness, goal negotiation, authenticity, and collaborative and active learning (Jonassen 1991; Valcke 2007). Entering a new digital age, Siemens (2005) felt the need to develop the connectivism perspective on learning, with connections enabling learning opportunities. As a result, learning is no longer considered as an internal, individualistic activity, but as being “based on exploration, connection, creation and evaluation within networks that connect people, digital artefacts and content” (Manca and Ranieri 2013, p. 488). One of the key pillars of connectivism is the ability to access and address what is needed instead of what the learner currently possesses (Siemens 2005). In other words, both perspectives stress that interaction and connection between an individual and the environment are critical for learning.

In research into the connection between cooperative, individualistic and competitive forms of instruction, achievement in English as a foreign language and perceptions of classroom climate, Ghaith (2003) showed that the more that learners work together, the more that they feel that their classmates like them and care about them, both personally and academically. Thus, studying cooperatively is positively correlated with a supportive and cohesive class climate (Ghaith 2003). Crook (2008) reported that SNSs, as Facebook, are considered powerful settings for facilitating socially-constructive learning because of their richness of exchange possibilities. Additionally, they are considered supportive for the co-creation of knowledge (Armstrong and Franklin 2008).

Furthermore, Facebook enables students to move away from top-down, classroom-based, structured (e.g. in terms of learning objectives, time or support) and formalised learning to bottom-up informal learning that is learner-centred, spontaneous (non-intentional) and collaborative (Commission of the European Communities 2001; Manca and Ranieri 2013, 2014; Marsick and Watkins 1990; Siemens and Weller 2011), and to informal learning resulting from daily activities (e.g. relations and conversations related to work, family and leisure) (Commission of the European Communities 2001) or a need, motivation or opportunity for learning (Marsick and Watkins 2001). Multiple authors (Madge et al. 2009; Siemens and Weller 2011; Tsovaltzi et al. 2014) specifically refer to Facebook overstepping the traditional boundaries between formal and informal learning

contexts. Tsovaltzi et al. (2014, p. 1342) indicated that, when Facebook is an integral part of a student's life, certain learning applications (e.g. conversations or groups) can offer possibilities to bridge formal and informal learning "by situating learning opportunities within their everyday social contexts and appropriating peer interactions on both curricular and extra-curricular topics".

Seamless learning bridges such different learning settings (e.g. in- and out-of-class, academic and non-academic) and "extends formal learning time, usually limited to the classroom, into informal learning time" (Wong et al. 2015, p. v). In seamless learning spaces, students are encouraged to embrace learning resources both inside and outside (e.g. through involvement in an online learning community) of the classroom (Wong and Looi 2011; Wong et al. 2015). Seamless learning implies that students can learn in a variety of scenarios and "can switch from one scenario to another easily and quickly using the personal device as a mediator" (Wong et al. 2015, p. v). Possible scenarios vary according to group size (individually, with another student, a small group or a large online community), the people involved (teachers, mentors, parents and members of other supportive communities) and the place where it occurs (face-to-face, virtually or at a distance (e.g. classroom, campus, home, outdoors)) (Wong et al. 2015). According to Manca and Ranieri (2014), the informal nature of Facebook might contribute to this hybridisation of learning contexts.

Class groups and online learning spaces

Various scholars have attempted to describe these social and informal learning practices within group structures. Lewin (1943, 1948) believed that, without cohesiveness, a group could not exist because the essence of a group is interdependence of its members. In this case, a group is considered as 'a dynamic whole', meaning that a change in the state of any member or subgroup changes the state of any other member or subgroup. In a cooperative situation, participants are inclined to promote effective actions of a group participant (which improve a person's chances of obtaining his/her goals) and prevent bungling actions (which reduce a person's chances of obtaining his/her goals) (Deutsch 1949). According to Weick (1995), ICT is able to create a 'group mind' through which members engage in a collaborative sensemaking process or "the process by which members interpret events that occur within the organization" (Lampe et al. 2011, p. 331). Therefore, individuals use technology to take advantage of other people's knowledge and search for additional information. Lampe et al. (2011) point to the importance of the process of collaborative sense-making for learning.

Virtual communities offer social communication which is considered essential in the educational process (Jiménez Guamán 2012). Bosch (2009) highlights the potential of Facebook to create 'educational micro-communities'. Following Ma's definition (2006), Facebook groups can be seen as online learning communities, which are groups of people "who meet online and communicate via communication networks, sharing common interests and goals, engaging in knowledge-related transactions, and supporting each other in their learning agendas" (p. 11).

According to Gee (2005), these communities are preferably viewed as affinity spaces, which are spaces for informal learning where people with different levels of knowledge, skills and experiences participate and interact in many different ways based on a common interest or endeavour. Gee discusses some features of affinity spaces by comparing them with current classrooms. First, in classrooms, the common endeavour is often unclear to students, and race, social class, gender and disability are more at the foreground than in

an affinity space. Second, students are often segregated based on abilities and skills rather than mixed together across the whole continuum of these. Third, in classrooms, students are encouraged to gain more or less the same knowledge, are rarely allowed to teach the teacher and other students, and seldom engage in collaborative learning. Additionally, classrooms tend to encourage and reward individual knowledge (stored in the head) instead of distributed knowledge which involves students networking with each other as well as various tools and technologies. In contrast to affinity spaces, classrooms usually provide neither multiple routes to participation nor engage students in different ways, to different levels, in different contexts (Gee 2005).

According to Gee (2005), young people today are confronted with and enter more affinity spaces, which makes them aware of a different and arguably powerful vision of learning, affiliation and identity. Affinity spaces are considered an important form of social affiliation and places where effective learning can occur (Gee 2003). Therefore, youngsters are “in a position to compare and contrast how learning works in such spaces and how it works in schools, not always to the credit of schools” (Gee 2005, pp. 231–232).

In conclusion, literature about SNSs emphasises the importance of connecting students through their more informal methods to achieve educational goals. However, to date, the social dynamics arising from Facebooking, in general, and Facebook class groups, in particular, remain unclear. Also, several studies indicate the value of Facebook for learning processes, but knowledge about how students experience their learning when participating in Facebook class groups is lacking.

Research aim and questions

The current study explored the social and educational potential of SNSs by focusing on Facebook class groups initiated and managed by high-school students without any teacher being involved. The following research questions were identified. What roles do Facebook class groups and group conversations play in establishing social dynamics among students? What roles do Facebook class groups and group conversations play in gaining learning experiences?

Research context and methodology

A qualitative ethnographic research design, characterised by a phased multi-method approach consisting of observations and focus-group interviews, was used.

Participants and procedure

Participants were drawn from high schools in Flanders and the Brussels Capital Region in Belgium (Europe). Respondents in this study were students in high school (i.e. ISCED level 3, aged 16–20 years) who organised themselves into a Facebook group or Facebook Messenger chat group. It has been argued that this age group is less researched than higher-education students in relation to social media (Hew 2011; Madge et al. 2009; Rodríguez-Hoyos et al. 2015). All Facebook groups and Facebook Messenger group conversations involved in this study, hereafter referred to as ‘Facebook class groups’, were created voluntarily, meaning that teachers did not ask their students to create them (Dalsgaard 2016).

The Facebook class groups were selected without using strict sampling rules, but relied on personal acquaintances of the researchers (Ranieri et al. 2012). In total, 14 class groups over seven different schools participated in the study. Four classes with students of the fifth year (68 students) and ten in the sixth year (169 students) of high school. An overview of the Facebook class groups is presented in Table 1.

Before any research activity was undertaken, all classes were visited to introduce ourselves and the research. Students were informed about the research design concerning the process and different phases and their rights, research ethics (e.g. the right of withdrawal at any time) and confidentiality of processing. Students received an information letter explaining these study details. After the information session, students were able to ask questions and share concerns. Final approval for the observation was obtained through filling out an informed consent form. When students preferred not to be involved in the study, their online contributions were not taken into account. All students were willing to participate. Finally, students were asked to provide the researchers with access to their Facebook class groups.

Observation

In the first phase, the Facebook class groups involved in observations that were retrospective and focused on students' contributions (i.e. posts and comments, messages, photos, hyperlinks, ...) during the first academic semester. A retrospective approach was chosen to avoid changes in students' online behaviour and activities because of the researchers' presence. The researchers did not participate in any way, but took up the position of complete observer (Gold 1958) and left all groups immediately after saving students' contributions and interactions. Thus, the conversations were all authentic,

Table 1 Overview of the class groups involved in the research ($n = 14$)

Group	Year	No. of students in the class	Kind of Facebook group	No. of focus groups
1	6	28	Messenger group conversation	2
2	6	15	Messenger group conversation	1
3	5	11	Messenger group conversation	1
4	5	12	Closed group	1
5	6	10	Messenger group conversation	1
6	6	15	Messenger group conversation	1
7	6	22	Secret group	2
8	5	27	Messenger group conversation	2
9	6	26	Closed group	1
10	6	9	Secret group	1
11	6	7	Messenger group conversation	1
12	6	13	Secret group	1
13	5	18	Secret group	–
14	6	24	Secret group	–
Total	Year 5: 4 Year 6: 10	237	7 Messenger group conversations 2 Closed groups 5 Secret groups	15 Students involved: 195

meaning that the researchers had no control on the content that was uploaded and being discussed (Rap and Blonder 2016). In total, 237 students were involved in the Facebook class groups.

The observation data were thematically analysed by two researchers. First, a tentative coding scheme was created to reveal trends and create labels to identify the activities and discussions within the groups. Issues that arose during the coding process (e.g. how to interpret specific fragments of the online posts and comments and where and how to code them within the structure and themes that were occurring and being shaped) were recorded and discussed consistently. This phase revealed trends and created labels that allowed for consistency across findings. We redefined the structure multiple times according the ongoing data coding process. As a result, a framework for the interview scheme was created with the intention to provoke discussion amongst the students during the next focus groups. In other words, the observation phase was two-fold: gaining insight into the activities and discussions within the Facebook class groups; and guiding the focus groups.

Focus group interviews

In the second phase, we conducted focus groups during which students were invited to reflect upon their experiences with the Facebook class group. According to Aaen and Dalsgaard (2016), focus groups can be useful for unravelling the dynamics and relations among students, as reflected the first aim of the study. Also, the focus groups provided greater insight into student ideas on educational use of Facebook, especially its role for learning. Students not involved in the Facebook class group were also invited for the focus group because their perspective was considered important because they were able to reflect, to a greater or lesser extent, from an outsider perspective. Before starting, students were informed about the study's aim, the duration (approximately 50 min, one lesson hour) and the audio-recording of the focus-group discussion. Again, permission was obtained through written informed consent.

There are no strict guidelines concerning the number of people involved in a focus group, with groups size ranging from 3 to 14 participants (Pugsley 1996). In the present study, the researchers tried to gather all students of the same class group in one focus group. However, if a class group exceeded 15 students, the class was divided over two focus groups. However, because of practical constraints and logistics (e.g. the teachers could not afford losing additional teaching hours), it was not feasible to organise two separate focus groups for class group 9 and a focus group with class groups 13 and 14. The total number of students involved in the focus groups was 195, with an average of 13 students per focus group.

The focus-group interviews were transcribed verbatim and analysed thematically through an iterative process using the software package NVivo11. After constructing a coding scheme consisting of recurring themes (Braun and Clarke 2006), two researchers separately performed a first analysis to add new themes or topics or merge existing ones. During a second round, the researchers compared notes and codes, discussed problems, and refined the coding scheme through a process of consensus to increase the reliability of the findings. Thirdly, before reporting the findings, the data were revised a last time to focus on clustering themes according to the research questions and the selection of theme-representative quotes. These are used in the findings section to balance researchers' voice with those of the participants (Hammersley and Atkinson 2007).

Findings

The findings from the observations and focus-group interviews are reported simultaneously to support each other. We first elaborate on Facebook as a medium for class communication to illuminate how it can foster social interactions and learning experiences. Students chose Facebook for their online class group because they considered it to be a practical, fast, easy and thus user-friendly medium. Conversely, their learning management system (LMS) (e.g. Smartschool and Schoolonline) was deemed impractical because of the lack of notifications and clarity. The effort it took to check the school platform was mentioned as annoying, while on Facebook “you’re just for your spare time, and when you get a notification about school you check it, and it makes you think about it again” (Group 4). Therefore, it can be seen in students’ comments that these Facebook or Messenger notifications quickly made other classmates aware of new posts and messages. Furthermore, Facebook enabled students to reach out quickly to all of their classmates at once instead of sending separate messages to individual classmates. It would seem that Facebook ensured a better chance for someone else in the class to see the message or post and thus receive an answer. Ultimately, Facebook was considered to be a very useful medium because of the previously-discussed features (i.e. user-friendliness and usability, wide reach and responsiveness). Generally, students considered Facebook as an immediate, less-time consuming, more-effective and more-efficient medium. However, the amount of notifications received—especially in the case of a Messenger chat group—could be high. This was repeatedly mentioned as annoying by the students because of the distracting nature of a large amount of notifications. In the following sections, we dwell on how the Facebook groups can be considered as a place for bonding and learning.

A place for bonding

Discussing the findings, we report how respondents experienced the Facebook class group as a place for bonding because it allows students to (1) interact, (2) provide (emotional) peer support, (3) reduce loneliness and (4) share experiences and express frustrations and humour.

Students indicated that the way in which they behave and relate to each other in the class is parallel to the Facebook class group. For example, when looking to students’ behaviour, more introverted students during the lessons were mostly reading, and eventually liking or reacting but seldom posting messages in the Facebook class group. Importantly, according to the students, the threshold for asking or sharing something seemed to be lower in the Facebook class group than in the classroom. A possible reason for this was fear of being teased when fellow students considered the posting. For example: “If you ask a silly question in the classroom, 2 or 3 days later you are still teased about your silly question, while online it’s just ‘haha’ and it’s over” (Group 1, FG1).

Concerning interrelations, participants often reported the existence of little cliques within their classes. The same existed for the Facebook class group, with students revealing that they are faster to respond or offer help to closer friends of the class. However, help was also provided to others. More importantly, the Facebook class group encouraged several respondents to interact with peers with whom they were less familiar: “It’s a useful tool for interacting with peers you don’t always talk to in the classroom, because you do talk to them in the group” (Group 12); “There are a lot of people in our class group I would never

talk to or ask something and now, with the chat, I do” (Group 1). Thus, although cliques or groups of friends might be present in the Facebook group too, students go beyond the ones with whom they are close when interacting in the online group. Students showed involvement and interest in each other’s life in the Facebook class group. For example, they asked how things were going, asked about leisure and weekend plans, encouraged each other and wished each other good luck. One student reported how the class group supported her when her grandmother died:

Then you notice that the people supporting you first are the ones in the chat group. You just feel that. It is really striking. So you know you always have someone to go to. In the group chat, we also post when we’re having a difficult time and something is wrong. We always cheer each other up. It’s not always about school work. We are a kind of little family that knows best how to deal with each other. (Group 5)

As the example shows, the Facebook group allows all students in the class to be at each other’s disposal after school hours. Consequently, as the Facebook class group facilitated interaction outside the school walls and enhanced a sense of proximity and accessibility, students heard each other more often, got to know each other better and were better informed about each other’s daily lives, thereby feeling more close as a class group. According to the students, this group feeling created by participating in the Facebook class group contributes to a positive class atmosphere: “Without the Facebook group, the class atmosphere would be less warm. Really, you would feel alone while, now, you still have a bit of a group feeling and you can share something with someone” (Group 8, FG2). As mentioned in the previous illustrative quote, more students mentioned the potential of the Facebook class groups decreasing feelings of loneliness: “I don’t like to be alone and want to keep that bond. With that group, I have the feeling that a bond remains” (Group 5).

Next, sharing common experiences (e.g. during periods of examinations) contributed to a sense of unity which, according to the participants, was stimulated by the Facebook class group. The focus groups revealed that this sense of unity is also caused by expressing frustrations in the Facebook class groups. Students often cope with a lot of stress and frustrations about the school in general and their teachers and assignments in particular. The opportunity to express their frustrations, feelings of dislike and stress seemed to have a calming and comforting effect. The Facebook group is a space to blow off steam, often in a humorous way: “With the class, we all think the same about something and then we just joke about it together. ... That creates a group feeling, when you have to deal with the same situations and you all laugh with the same.” (Group 7, FG2). Indeed, when observing their postings, it was noticed that students shared humorous reactions, pictures, gifs or videos about their own, their pet or just random issues. Students stated that this kind of post created some ‘lightness’ which is a welcome alternative with the education-related posts. Furthermore, it added to a greater sense of solidarity and togetherness: “I think that’s great, it gives the feeling that we’re really a class, that we’re close” (Group 1, FG2). Thus, a closer bond was created among peers outside the school walls through the Facebook class groups. However, a minority of the students, who are only members for school purposes, found this enhanced group feeling less important than the school-related information. Nevertheless, all students still stressed the importance of face-to-face interaction for discussing private matters or asking each other something during school hours.

However, according to respondents, online communication also gives rise to certain misconceptions, despite the emoticons that users can add to their messages. Not receiving a response on a post or message was a source of irritation for students: “Sometimes, when I ask a question, getting no answer can be quite frustrating” (Group 8, FG1). One student

explicitly indicated that the sense of solidarity might disappear when no one responds. Generally speaking, students still think that the group has too much to offer to give up on it: “I think that sometimes you have some frustrations when being ignored, but generally, I think, you’re a group actually and you help each other. In the end, the group will benefit from it” (Group 1, FG1).

A place for learning

Besides being a place for bonding, the Facebook class group is also a place for learning. Students used the Facebook class group to ask each other questions, exchange information and educational resources, and discuss the learning content. Therefore, the Facebook class groups enabled students to gain more insight in the subject matter, their learning method and their study progress and results. Additionally, it was discussed how the Facebook class groups can also be a de-motivator for learning.

Our data showed that participating in the Facebook group supported students in obtaining more insight into the subject matter. The group provided students with improved access to the study notes of peers. Students were also able to ask each other for additional explanations about specific learning content. Reading the study notes and answers and the explanations of peers allowed them to better understand the content and gain more insight in the subject matter: “There is always someone in the class who understands it and explains it very well. Also, students of the same age are able to explain things more easily and therefore I think the group is useful” (Group 3); “If someone doesn’t understand something and then asks a question in the chat, and others respond, I think this can lead to a deeper understanding” (Group 6). In other words, reading the study notes and explanations of peers allowed students to better understand the content and gain more insight in the subject matter. Besides benefiting from the explanation of fellow students, students also learned from explaining the subject or content to their peers:

I think it’s useful because, when someone asks a question and I explain it, I even understand it better myself. When studying for exams, if you take a look in the group chat during the evening, and you see all the questions that have been asked so far, you can read the others’ explanations. In that way, you sometimes understand it even better than if you wouldn’t have access to the group (Group 7, FG1).

The Facebook class groups clearly encouraged and enhanced the idea that “you learn as well when helping others” (Group 1, FG2). Students believed that they can develop a deeper understanding when multiple students try to explain something or figure out the meaning or how something should be interpreted. Occasionally, the explanation of others was experienced as disturbing, caused confusion and made students doubt about themselves: “In the class chat, they are, for example, busy with something, a subject, which you understand, but sometimes while reading the others’ reactions, you don’t understand it any longer. That’s why you might turn it off” (Group 1, FG2).

Based on the questions and answers of others in the Facebook class groups, students often adjust their study method: “Sometimes when we have a test of mathematics, a lot is being said in the group. Questions are asked and everyone answers. You can adjust your work or learning method accordingly. Everyone learns a little from it, well at least that’s what I think” (Group 8, FG2). Also, when undertaking an assignment, students consult each other: “If you are working on something and you don’t really know in what direction it should evolve, you consult someone” (Group 1, FG1). In other words, it gave them insight into the working methods of

others and enabled them to adjust their own working methods in order to study the content or complete the assignment in a more goal-oriented way.

Students also considered explaining study materials to peers and reading the explanations of others as a form of self-evaluation. It is a way to check if they mastered the learning content:

When I finish my homework or my exam on time in the evening and people ask questions, that's a way of evaluating myself. I really learn from it. It becomes clear whether or not I understand everything and if I should have a look at it again. Definitely during the evenings when studying for the exams, such as history and geography, you can really experience if you manage it or not. And it's nice if you can! (Group 8, FG1)

Several students even interrogated each other in the Facebook class group to check if they know the answer. As a result, students feel familiar with questions that the teacher might ask at the test or examination, try to solve them and, therefore, feel well prepared. In the Facebook class groups, students get an indication of how they were doing: “When they ask if someone understands it and you understand it, since you studied it, you feel better because you can explain it. You know how to do it and it immediately gives you a boost that you're doing well” (Group 11). The Facebook class groups served as an indicator for students' study progress and results and, eventually, as a stimulator and even motivator for learning. Students often compare themselves with their peers to see where they situate themselves and their study progress and grades. This observation was confirmed during the focus groups. Students declared that they felt a sense of relief when their peers experienced the same difficulties during an exercise or failed to solve them: “If I'm really not good at something, a kind of mathematical curve for example, and I hear the others aren't able to solve it either, I think ‘ok, chill, take it easy’” (Group 1). When students observed that they were on track or ahead of their peers, they experienced a sense of relief or satisfaction and considered it as a motivator to persevere. Conversely, getting behind compared with their peers was often considered an extra stress factor or stimulus to work more or harder: “If they [peers] are already further along, then I know ‘okay, I have to make an extra effort, I need to pick up the pace’, so that's motivating” (Group 4).

Next to study progress, students compared themselves with peers in terms of results and grades. When grades are in line with those of their peers, it seemed to be a confirmation for the student that (s)he studied well. At the contrary, when they differed a lot, it was a signal to study better or work harder. In case grades were unsatisfactory for everyone, the students shifted the responsibility to the teacher or the difficulty of the test.

So, either way, it gave students an indication of their learning strategies, motivation, effort or difficulties with the subject. Although, for the majority of the respondents, the Facebook class group provided academic support and generates motivation during a demanding task or difficult time (e.g. examination period), continuously comparing with peers appeared to be a stress factor. Some students were influenced negatively, such as when some peers indicated that they would skip a part of the subject material.

Discussion and conclusion

The current study revealed that student-managed Facebook class groups had both social and learning values.

Students identified key features of Facebook as a medium for class communication as being user-friendliness, usability, reachability and responsiveness. These factors were voiced as affording students with a more efficient and effective learning experience. These

findings align with those of Heyman (2015), who points to Facebook as a combination of responsiveness, versatility and ease of use which “renders it the most efficient means of communication compared to other media” (p. 213). The general lack of usability of the schools’ LMS confirmed past findings highlighting the “push to go to Facebook because other platforms are less valuable for communication” (Heyman 2015, p. 214). However, Facebook (groups) also caused distraction and hence slowed down the learning process.

Our findings show that Facebook class groups can enhance interaction and connection among students. Because of the interaction possibilities and, consequently, increased proximity and reachability of peers, Facebook class groups can act as a place to reinforce relationships with peers, provide (emotional) peer support, reduce loneliness, share experiences and express frustrations and humour. Therefore, Facebook class groups can create a strong sense of connectedness, cohesion and socialisation among students. This is in line with findings of Greenhow (2011), Madge et al. (2009) and Manca and Ranieri (2014).

Previous studies confirm that the use of humour in the groups can improve group feeling and social cohesion among students, motivation, confidence, enjoyment of the learning process and even learning, while reducing tension and anxiety (Aboudan 2009; Lomax and Moosavi 1998; Powell 1985; Provine 2002). Yu et al. (2010) found that online social networking can promote knowledge about peers. We found that this is especially the case in Facebook class groups for which (almost) all class students are united and interacting with one another. Although the threshold to express themselves was lower in the Facebook class group, students still attached importance to face-to-face interaction and the warmth of ‘real’ contacts (Manca and Ranieri 2014).

In summary, because of Facebook’s various features fostering interaction, dialogue and connection, the face-to-face interactions encountered in the educational environment can be extended and deepened through online interaction outside the school walls. Therefore, they are able to enhance social connectedness and cohesion, community-building and socialisation among students. For example, the Facebook class group encourages a connected classroom climate and is able to increase students’ motivation, persistence and integration in the class. Although often dreaded for its ‘solitary nature’, Facebook’s opportunities for social connectedness also can counter feelings of exclusion, loneliness, isolation and disconnectedness (Lee and Robbins 1998).

Furthermore, the Facebook class group served as a place for learning, with our findings revealing a better understanding of student learning in Facebook class groups. Facebook class groups can offer help with studying, homework and assignments, and enable the exchange of learning materials and clarifications. Our findings indicated that the social character of Facebook groups, and consequent interaction possibilities with peers, lie at the root of the learning processes occurring. The findings highlighted that insights were gained and knowledge was constructed through interaction with peers. More specifically, insights were gained into the subject matter, the learning method, the study process, progress and grades because of the possibility of comparing themselves and interacting with peers (e.g. giving feedback or conducting an evaluation). Moreover, students’ reflection was provoked by comparing with peers the learning and solution strategies, the way things were handled, the progress made and the grades received. This comparison and eventually reflection served as stimulators and motivators for learning. Facebook groups have thus the potential to encourage students to reflect.

As learning in Facebook groups seems to be collaborative, learner-centred, spontaneous and bottom-up, they comply with the elements crucial for informal learning (Commission of the European Communities 2001; Manca and Ranieri 2013, 2014; Marsick and Watkins 1990; Siemens and Weller 2011) and suggest that learning can take place in an

environment not intentionally conducive to learning (Marsick and Watkins 1990). Therefore, Facebook class groups have the potential to extend the formal learning time that is often limited to the classroom (Wong et al. 2015). Hence, this study confirms the findings of previous research (Madge et al. 2009; Siemens and Weller 2011; Tsovaltzi et al. 2014) that Facebook class groups can bridge formal and informal learning contexts. SNSs seem to blur the distinction between education or learning spaces, and social or leisure spaces, which enforces the idea that mixing all sorts of activity can be useful (Siemens and Weller 2011). Thus, Facebook class groups appear to provide seamless learning and offer opportunities to bridge in-school and out-of-school environments. This bridge between environments is not only at an academic level, but also at a social and emotional one. Lewin's idea of 'the group as a dynamical whole' (1943, 1948) is confirmed as students stress the encouragement that they feel to persevere, but also the possible negative spiral they fall into when frustrations take over and, consequently, they become demotivated.

The findings show that Facebook class groups respond to several features of affinity spaces more than usual classrooms do (Gee 2005). First, the Facebook class groups enabled students to adopt the role of the teacher and to 'teach' each other (Dalsgaard 2016). This can also be considered an example of peer-tutoring (Dalsgaard 2016). Second, the Facebook class groups demonstrated the importance of distributed knowledge as students knew who to consult for their issues. Facebook class groups allow students "to network with each other as well as with various tools and technologies" (Gee 2005, p. 230) and to benefit from the networking. Therefore, Facebook class groups support the theory of connectivism and, more specifically, that the ability of knowing who to access and address is equally as important as individual knowledge. Furthermore, Facebook class groups provide students with different routes of participation (i.e. active and passive), engage students in different ways (learning and teaching) and involve different levels in different contexts (e.g. formal and informal, in-school and out-of-classrooms). Also, status is achieved in many different ways (e.g. by explaining physics, sharing study notes). Hence, following the theory of Gee (2005), Facebook class groups can be considered an important space for social affiliation and effective learning nowadays.

The study highlighted the importance of peer-to-peer dialogue, support and exchange for social and learning opportunities. Moreover, these are all beneficial for motivation, persistence and integration within the educational environment and encouraging for a positive class climate. Therefore, educators are encouraged to facilitate or organise various possibilities for students to communicate and connect with each other, increase interaction and devote more effort to building a strong sense of connectedness and cohesion amongst peers. By exploring interaction patterns, this study moved beyond dichotomous worlds (individual versus social, in-school versus out-of-class, face-to-face versus virtual). Furthermore, instead of employing 'online to offline' and 'offline to online' measures, the study acknowledged that the online—offline channels are integrated communicative spheres (Ellison et al. 2011). More particularly, a guiding principle was to explore social, learning and group dynamics.

This study had some limitations. First, it focused on one particular SNS, namely, Facebook. Following recent SNSs evolutions, other platforms, such as Whatsapp, are also gaining popularity and might encourage class group discussion. Therefore, it would be interesting to explore their social and educational possibilities. However, our exploration of Facebook class groups still could provide insights into the role of students' class groups on SNSs (Ranieri et al. 2012). Second, a methodological limitation could be the focus on closed spaces (i.e. the class-related Facebook groups). Knowing that they were being observed might have caused students to feel uncomfortable and eventually lead to reduced

and/or altered activity and involvement within the group. Furthermore, because of the retrospective approach applied within the study, students were able to delete contributions before adding the researchers to their groups. However, we were willing to take this risk in order to limit the possible discomfort amongst participating students from knowing that all participants could see their comments, which might have otherwise led to reduced and/or altered activity and participation within the group. This might have been because students had the impression that the group could no longer be considered ‘closed’, because the researcher seemingly would make the activities within the group visible—although in an anonymous manner—to the rest of the world. Third, during the focus groups, some students attributed their better achievement results to their Facebook class group. Therefore, it would be valuable to verify whether this perception is correct and explore whether achievement improves because of the support and extra explanation received in the Facebook class group, or whether Facebook use lowers academic achievement. Fourth, students sometimes considered their participation within the group beneficial for learning and school because of the diverse platform affordances, and sometimes considered it as a non-participatory trigger. Therefore, future research could investigate in greater depth the use of self-regulation strategies by students to avoid social media platforms from distracting them when their work demands it. Fifth, because the social representation of the students and their diverse backgrounds were outside the scope of the research, we were not able to connect them with certain specific behaviours shown in the Facebook groups and throughout the interactions taking place there. However, certain relationship and perspective would be highly valuable to take into account in further research concerning students’ online interactions. Sixth, it could be relevant to broaden research questions to include the potential role of SNSs and, more specifically Facebook class groups, for education in general. For example, it is conceivable that the rise of Facebook class groups made teachers adjust their way of communicating, teaching and giving assignments. This could be further explored.

References

- Aaen, J., & Dalsgaard, C. (2016). Student Facebook groups as a third space: Between social life and school-work. *Learning, Media and Technology*, 41(1), 160–186.
- Aboudan, R. (2009). Laugh and learn: Humor and learning a second language. *International Journal of Arts and Sciences*, 3(3), 90–99.
- Armstrong, J., & Franklin, T. (2008). *A review of current and developing international practice in the use of social networking (Web 2.0) in higher education*. York: St John University.
- Bolliger, D. U., & Inan, F. A. (2012). Development and validation of the online student connectedness survey (OSCS). *The International Review of Research in Open and Distance Learning*, 13(3), 41–65.
- Bosch, T. E. (2009). Using online social networking for teaching and learning: Facebook use at the University of Cape Town. *South African Journal for Communication Theory and Research*, 35(2), 185–200.
- Bowers-Campbell, J. (2008). Cyber pokes: Motivational antidote for developmental college readers. *Journal of College Reading and Learning*, 39(1), 74–87.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101.
- Chen, B., & Bryer, T. (2012). Investigating instructional strategies for using social media in formal and informal learning. *The International Review of Research in Open and Distributed Learning*, 13(1), 87–104.
- Cheung, C. M. K., Chiu, P.-Y., & Lee, M. K. O. (2010). Online social networks: Why do students use facebook? *Computers in Human Behavior*, 27, 1337–1343.
- Commission of the European Communities. (2001). *Communication from the European commission: Making a European area of lifelong learning a reality*. Brussels: European Commission, Directorate-general for Education and Culture and Directorate-general for Employment and Social Affairs.

- Crook, C. (2008). Web 2.0 technologies for learning: The current landscape—opportunities, challenges and tensions. *Becta Research reports*.
- Dalsgaard, C. (2016). Students' educational use of Facebook groups. *Educational Media International*, 53(4), 261–273.
- Deutsch, M. (1949). A theory of cooperation and competition. *Human Relations*, 2, 129–152.
- Dwyer, K. K., Bing, S. G., Carlson, R. E., Prisbell, M., Cruz, A. M., & Fus, D. A. (2001). Communication and connectedness in the classroom: Development of the connected classroom climate inventory. *Communication Research Reports*, 21(3), 264–272.
- Ellison, N. B., Steinfield, C., & Lampe, C. (2011). Connection strategies: Social capital implications of Facebook-enabled communication strategies. *New Media & Society*, 13(6), 873–892.
- Gee, J. P. (2003). *What video games have to teach us about learning and literacy*. New York: Palgrave/Macmillan.
- Gee, J. P. (2005). Semiotic social spaces and affinity spaces: From the age of mythology to today's schools. In D. Barton & K. Tusting (Eds.), *Beyond communities of practice: Language, power, and social context* (pp. 214–233). New York: Cambridge University Press.
- Ghaith, G. (2003). The relationship between forms of instruction, achievement and perceptions of classroom climate. *Educational Research*, 45(1), 83–93.
- Gold, R. L. (1958). Roles in sociological field observation. *Social Forces*, 36, 217–223.
- Greenhow, C. (2011). Online social networks and learning. *On the horizon*, 19(1), 4–12.
- Grieve, R., Indian, M., Witteveen, K., Tolan, G. A., & Marrington, J. (2013). Face-to-face or Facebook: Can social connectedness be derived online? *Computers in Human Behavior*, 29, 604–609.
- Hammersley, M., & Atkinson, P. (2007). *Ethnography: Principles in practice* (3rd ed.). London: Routledge.
- Hew, K. F. (2011). Students' and teachers' use of Facebook. *Computers in Human Behavior*, 27, 662–676.
- Heyman, R. (2015). *Facebook & users: Who is using whom? A material semiotic approach to the irreversibilisation of Facebook as a case of lifeworld colonisation by social media* (Doctoral dissertation). Vrije Universiteit Brussel.
- Jiménez Guamán, L. V. (2012). EFL Teenagers' social identity representation in a virtual learning community on Facebook. *Profile*, 14(2), 181–194.
- Jonassen, D. H. (1991). Evaluating constructivist learning. *Educational Technology*, 28(11), 13–16.
- Lampe, C., Whon, D. Y., Vitak, J., Ellison, N. B., & Wash, R. (2011). Student use of Facebook for organizing collaborative classroom activities. *Computer-Supported Collaborative Learning*, 6, 329–347.
- Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. New York: Cambridge University Press.
- Lee, R. M., & Robbins, S. B. (1998). The relationship between social connectedness and anxiety, self-esteem, and social identity. *Journal of Counseling Psychology*, 45(3), 338–345.
- Lewin, K. (1943). Psychology and the process of group living. *Journal of Social Psychology*, 17, 113–131.
- Lewin, K. (1948). *Resolving social conflict*. New York: Harper.
- Lin, Q. (2011). The role of web-based activities in mediating student interaction and engagement in four teacher education classes. *Journal of Online Learning and Teaching*, 7(1), 99–107.
- Lomax, R. G., & Moosavi, S. A. (1998). Using humor to teach statistics; Must they be orthogonal? *Understanding Statistics: Statistical Issues in Psychology, Education, and the Social Sciences*, 1(2), 113–130.
- Ma, G. (2006). *Online learning community in the context of distance education: A case study*. Dissertation, Department of Instructional Systems Technology, Indiana University.
- Madge, C., Meek, J., Wellens, J., & Hooley, T. (2009). Facebook, social integration and informal learning at university: 'It is more for socialising and talking to friends about work than for actually doing work'. *Learning, Media and Technology*, 34(2), 141–155.
- Manca, S., & Ranieri, M. (2013). Is it a tool suitable for learning? A critical review of the literature on Facebook as a technology-enhanced learning environment. *Journal of Computer Assisted Learning*, 29(6), 487–504.
- Manca, S., & Ranieri, M. (2014). Does Facebook provide educational value? An overview of theoretical and empirical advancements of affordances and critical issues. In G. Mallia (Ed.), *The social classroom: Integrating social network use in education* (pp. 312–338). Hershey, PA: IGI Global.
- Marsick, V. J., & Watkins, K. (1990). *Informal and incidental learning in the workplace*. London, New York: Routledge.
- Marsick, V. J., & Watkins, K. E. (2001). Informal and incidental learning. *New Directions for Adult and Continued Education*, 89, 25–34.
- McNeely, C., & Falci, C. D. (2004). School connectedness and the transition into and out of health-risk behaviour among adolescents: A comparison of social belonging and teacher support. *Journal of School Health*, 74(7), 284–292.
- Mediaraven, & LINC. (2016). Onderzoeksrapport Apestaartjaren 6. Belgium.

- Meishar-Tal, H., Kurtz, G., & Pieterse, E. (2012). Facebook groups as LMS: A case study. *The International Review of Research in Open and Distance Learning*, 13(4), 33–48.
- National School Boards Association. (2007). Creating & connecting: Research and guidelines on online social- and educational-networking. Retrieved June 3, 2018, from <http://www.webcitation.org/5aGqKNY66>.
- Powell, J. P. A. (1985). Humor and teaching in higher education. *Studies in Higher Education*, 10(1), 79–90.
- Provine, R. (2002). The science of laughter. *Psychology Today*, 33(6), 58–62.
- Pugsley, L. (1996). Focus groups, young people and sex education. In J. Pilcher & A. Coffey (Eds.), *Gender and qualitative research* (pp. 114–130). Aldershot: Avebury.
- Ranieri, M., Manca, S., & Fini, A. (2012). Why (and how) do teachers engage in social networks? An exploratory study if professional use of Facebook and its implications for lifelong learning. *British Journal of Educational Technology*, 43(5), 754–769.
- Rap, S., & Blonder, R. (2016). Let's Face(book) it: Analyzing interactions in social network groups for chemistry learning. *Journal of Science Education and Technology*, 25, 62–76.
- Rodríguez-Hoyos, C., Salmón, I. H., & Fernández-Díaz, E. (2015). Research on SNS and education: The state of the art and its challenges. *Australian Journal of Educational technology*, 31(1), 100–111.
- Sarason, I., Levine, H., Bashman, R., & Linder, K. (1983). Assessing social support: The social support questionnaire. *Journal of Personality and Social Psychology*, 44, 127–144.
- Selwyn, N. (2009). Faceworking: Exploring students' education-related use of Facebook. *Learning, Media and Technology*, 34(2), 157–174.
- Siemens, G. (2005). Connectivism: A learning theory for the digital age. *International Journal of Instructional Technology and Distance Learning*, 2(1), 3–10.
- Siemens, G., & Weller, M. (2011). The impact of social networks on teaching and learning. [online monograph]. *Revista de Universidad y Sociedad del Conocimiento (RUSC)*, 8(1), 164–170.
- Tsovaltzi, D., Judele, R., Puhl, T., Weinberger, A., Asterhan, C., Hever, R., et al. (2014). When friends argue: Investigating argumentative learning processes in facebook. *Proceedings of International Conference of the Learning Sciences, ICLS*, 3, 1342–1351.
- Valcke, M. (2007). *Onderwijskunde als ontwerpwetenschap: Een inleiding voor ontwikkelaars van instructie en voor toekomstige leerkrachten*. Ghent: Academia Press.
- Vlieghe, J., Muls, J., & Rutten, K. (2015). Everybody reads: Reader engagement with literature in social media environments. *Poetics*, 54, 25–37.
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Boston, MA: Harvard University Press.
- Weber, K., Maher, C., Powell, A., & Lee, H. (2008). Learning opportunities from group discussions: War-rants become the objects of debate. *Educational Studies in Mathematics*, 68, 247–261.
- Weick, K. E. (1995). *Sensemaking in organizations*. Thousand Oaks, CA: Sage.
- Wong, L. H., & Looi, C. K. (2011). What seems do we remove in mobile-assisted seamless learning? A critical review of the literature. *Computers & Education*, 57(4), 2364–2381.
- Wong, L. H., Milrad, M., & Specht, M. (2015). *Seamless learning in the age of mobile connectivity*. Singapore: Springer.
- Yu, A. Y., Tian, S. W., Vogel, D., & Chi-Wai Kwok, R. (2010). Can learning be virtually boosted? An investigation of online social networking impacts. *Computers & Education*, 55, 1494–1503.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.