A mixed methods summative and formative evaluation of a relatedness-enhancing intervention in the classroom

A design-based research pilot study in a Norwegian high school

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PED4591 Master Thesis in Pedagogy:
Communication, Design and Learning

45 ECTS Credits

University of Oslo
Faculty of Educational Sciences

Autumn 2021, 01/11/2021

2021

Title: A mixed methods summative and formative evaluation of a relatedness-enhancing intervention in the classroom: A design-based research pilot study in a Norwegian high school.

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SAMMENDRAG
MASTER I PEDAGOGIKK – MASTEROPPGAVE

Tittel	A mixed methods summative and formative evaluation of a relatedness-enhancing intervention in the classroom: A design-based research pilot study in a Norwegian high school
Av	Damaggio Mattia
Emnekode	PED4591
Semester	Autumn 2021

Stikkord
Relatedness-enhancing intervention
Classroom peer relatedness
Peer relatedness
Relatedness
Social inclusion
Belongingness
Social relationships
Relatedness satisfaction
Relatedness frustration
Social and emotional learning
Classroom climate
Classroom environment
Self-determination theory
Need-to-belong theory
Social intervention

Summative evaluation

Formative evaluation

Design-based research

Survey

Group interview

Thematic analysis

Mixed methods

Pilot study

Intervention study

Longitudinal study

Quasi-experimental study

Pragmatism

Technology-enhanced learning

Learning design

Innovation

High school

Norway

Education

Classroom

Students

COVID-19

Online intervention

Digital learning

Abstract

Social inclusion of students in the classroom context has been shown to be related to a series of important positive outcomes, but the research on preventive relatedness-enhancing programs is scarce. This thesis researched a pilot intervention aimed at creating a more positive and socially secure classroom environment, by performing a design-based research summative and formative evaluation. The three research questions posed to meet these evaluative goals were: 'to which extent did the intervention work?', 'what worked and what did not work?', and 'how can the intervention be improved?'.

The PeopleUknow pilot program studied in this thesis was applied to 1st and 2nd year students (16 and 17 years old) of a Norwegian high school. It lasted 8 weeks and consisted of six social activities in which the students were arranged together in various combinations that changed weekly. Each exercise lasted 20-45 minutes and was held once a week during school hours.

The study involved a three-round (pre- (T1), mid- (T2), and post- (T3) test) quantitative survey that was administered to both a treatment (N = 60) and a control condition (N = 98), selected with a quasi-experimental cluster sampling technique. A semi-structured qualitative group interview was held at the end of the intervention with five students from the intervention group.

With self-determination and need-to-belong theory as theoretical framework and Dewey's pragmatist epistemological assumptions, the first research question was assessed utilizing the survey results measuring the students' relatedness with classroom peers – distinguished in relatedness satisfaction and frustration. This evaluation was based on dependent and independent T-tests, bivariate correlations, and linear regressions. The second and third questions were explored with a thematic analysis of the group interview rooted in the theoretical framework.

The summative evaluation presented a quantitative dominant complementary mixed methods design, such that the quantitative results from the first research question were complemented by the relevant qualitative findings from the second question. The formative evaluation was based on the qualitative analysis of the answers to the second and third questions.

Due to unexpected COVID-19 restrictions, in the first time interval T' (T1 → T2) the

intervention had to be held online, while in the second research period T'' (T2 → T3) it took place in the classroom, but still with a '1-meter' social distancing rule. For this reason, the summative and formative evaluations were mostly based on results from T''.

The mixed methods summative evaluation of the digital learning period T' showed a significantly negative impact on the classroom peer relatedness frustration (it increased frustration) in the treatment – compared to the control – condition, likely due to the low quality of online interactions during the social activities. In T'', the effect of the program was mostly neutral, with a minor positive impact on relatedness satisfaction and a minor negative on frustration. The positive effect was likely due to the support of the intervention in facilitating conversation and in helping students to get to know each other. The negative effect was likely caused by unnatural interactions, prolonged sitting, starting the intervention too late in high school, and by the activities feeling like chores and taking away time from school.

The formative evaluation – based on a theoretically approached thematic analysis of the group interview – produced emerging evidence that helping students to get to know each other, fun and games, moving one's body, and beginning the intervention at the start of the first school year could all make PeopleUknow a better relatedness-enhancing program. Getting students to know each other was said to support deeper connection. Fun and games were described as more motivating and as leading people to more naturally getting to know each other. Moving one's body was defined as energizing and as increasing engagement and attention. Finally, the interviewees agreed on that, by beginning at the start of the first school year, the intervention would be received by students that would be more motivated to form new social connections.

We conclude that the intervention was detrimental to relatedness frustration when mediated online (in T'), and mostly neutral in the more normal circumstances (in T''). Moreover, based on the results of this study and on previous research, we recommend PeopleUknow and similar relatedness-enhancing programs to consider starting at the first school year, to emphasize helping students in getting to know each other, and to integrate fun and games, bodily motion, and positive interdependence. Future research should further explore the potential of these aspects.

Due to the small sample size, the generalizability of the findings is limited, and future research should involve larger samples.

Acknowledgments

Throughout the writing of this thesis, I received a good deal of support and assistance.

I would first like to thank my supervisor, professor Frode Stenseng. Your expertise has been invaluable for the decision of the theoretical framework, for choosing the content of the survey, for the analysis and interpretation of the quantitative data, for the revision of the whole document, and in many other ways. It has been a pleasure to collaborate with you.

I would also like thank Marianne Johnsen – the PeopleUknow CEO – and the 'PeopleUknow teacher' that made all this possible. Without your contribution there would have not been any intervention. You supported me in the recruitment of the classes and teachers, in the communication with them, in the creation of a self-made scale, in the preparation to the group interview, and in many other aspects of my project. I am very grateful for your help.

To all the students who participated in the survey rounds and in the group interview, your generosity has been essential for this study, thank you!

Moreover, I would like to thank professor Elisabeth Hovdhaugen who assisted me in the early decision around mixed methods design, professor Joshua Lawrence who helped me in the interpretation of the quantitative data and advised me on its limitations, and professor Anders Mørch who reviewed the qualitative part of the thesis.

A great thanks goes to my wife Annie Ås Hovind, who has advised me, encouraged me, and patiently tolerated me throughout the whole process. Thank you for having pushed me and for having believed in me! I would also like to thank Carlo Epifanio, for advising me to save time for the editing phase, for all the conversations about epistemology, thesis structure, and much else, and for the thorough revision of the whole document. Another thanks goes to Stefano Merlo for the review of the last drafts and the comments on style.

Oslo, November 2021

Damaggio Mattia

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Structure of the thesis

This thesis is divided in six chapters.

Chapter *1. Introduction* presents first the political context of this study, and it then introduces the theoretical framework, constituted by the self-determination and the need-to-belong theories. A literature review follows on relatedness in education, and on classroom peer relatedness-enhancing interventions. The chapter then presents the design-based research approach and Dewey's pragmatist epistemological position. It concludes describing the PeopleUknow intervention, and with a presentation of the problem statement and the research questions.

Chapter *2. Methods* introduces the DBR-inspired research design of this study, and the context and participants of the intervention. The procedures and content of the survey are first descried and then those of the group interview. The mixed methods typology of this project is defined and finally, the relation between the research design and the epistemological position is articulated.

Chapter *3. Analysis* offers the quantitative analysis of the survey material used to assess the effectiveness of the intervention, which include descriptive statistics, dependent T-tests, bivariate correlations, independent T-tests, and linear regressions. In the second part, the results from the thematic analysis of the group interview are elaborated, first presenting those relative to how the intervention worked and did not work (second research question), and then those related to how the intervention could be improved (third question).

Chapter *4. Discussion and results* presents first a summary of the main quantitative and qualitative findings, and then a discussion of the mixed methods summative evaluation and formative evaluation of the intervention.

Chapter *5. Conclusion and implications* summarizes the answers to the research questions on the background of theory and research. It offers design recommendations for future iterations of PeopleUknow and similar programs, and it provides the implications for theory and practice.

Chapter *6. Limitations, validity, and future research* explains the major limitations of the study, discusses the validity of the findings, and advances some recommendations for future research.

1. Introduction

In autumn 2020, the Norwegian government enacted the new national school reform *Fagfornyelsen 2020* for K-12 students. Among its main objectives, there is a shift of learning content in the different subjects, now revolving around three main interdisciplinary themes. Together with 'democracy and citizenship', and 'sustainable development', the theme 'life coping and public health (*livsmestring og folkehelse*)' is included (Utdanningsdirektoratet, 2020) which signals the accepted importance of students' development of skills that promote mental health (Utdanningsdirektoratet, n.d.a). In the *Overordnet del*, a statutory text that determines which values and principles must characterize Norwegian education, the paragraph 3.1. is dedicated to the school's role in "developing an inclusive community that supports health, wellbeing and learning" (Utdanningsdirektoratet, n.d.b). A secure and supporting learning environment is described as the basis of both academic and social development, and the responsibility for achieving it is assigned to both adults and pupils. By showing each other respect, trust, accept and appreciation, they are all said to be able to contribute to an inclusive environment where they can feel a sense of belonging (*tilhørighet*).

Through *Fagfornyelsen*, school leadership and teachers are now responsible for creating an inclusive classroom environment for each student. However, there is sparse research around interventions that directly aim at increasing students' sense of belonging in the classroom, when not focusing on particular disadvantaged subgroups – like students with special needs or disability, or from a specific minority or socioeconomic background. Following from this lack of relevant knowledge, the present study conducted a semi-summative[1] and formative evaluation (Plomp, 2007, p. 15; McKenney & Reeves, 2018, p. 166) of a pilot intervention targeted at creating a more positive and socially secure classroom environment. The content of the intervention was partially developed based on principles associated with self-determination theory (Deci & Ryan, 1985, 2000, 2008).

[1] The summative evaluation is called 'semi' as it happened at the end of the first of possibly multiple iterations of the program, and it was not the final, conclusive evaluation.

1.1 Theoretical framework

In this subsection we present the two macrotheories utilized in this study as the theoretical framework. We introduce first the self-determination, and then the need-to-belong theory.

1.1.1 Self-determination theory

Self-determination theory is a universal macrotheory of motivation, development, and well-being (Deci & Ryan, 1985, 2000, 2008) which has been applied to many contexts, among which that of education (Deci et al., 1991). Self-determined individuals, as the name suggests, are those that decide to engage in a behavior out of sheer will, for the pleasure and satisfaction that derives from the chosen activity. The prototype of self-determination is in fact intrinsically motivated behavior, that is, behavior that is engaged for its own sake (Deci et al., 1991).

At the opposite of the intrinsic motivation there is extrinsic motivation, that is characterized by external sources of rewards and punishment. Between these two opposite poles the theory also provides a more nuanced spectrum of motivations that vary in the degree to which the related activities are moved by an autonomous choice or are controlled by an external influence. The most important distinction in this theory is in fact between what is called autonomous and controlled forms of motivation. Autonomous motivation includes intrinsic motivation at one extreme, and the more moderate types of extrinsic motivation – called identified regulation – that have been fully integrated into one's own sense of self, in which one identifies with the activity's value. Controlled motivation on the other side, presents at its extreme extrinsic motivation, and more moderated forms called introjected regulation, in which motivation for activities has been only partially internalized, and still depend for example on external approval and avoidance of shame (Deci & Ryan, 2008).

This macrotheory posits that the achievement of self-determination occurs when three basis psychological needs are satisfied together. These are the needs for competence, autonomy, and relatedness. Competence involves understanding how to attain a specific goal and being efficacious in performing the required actions to achieve that goal, and autonomy implies being able to freely decide and regulate which actions one does (Deci et al., 1991). Finally, the satisfaction of relatedness, defined as "the need for belongingness and connectedness with

others" (Ryan & Deci, 2000), involves "developing secure and satisfying connections with others in one's social milieu" (Deci et al., 1991).

Social contexts that provide people the opportunity to satisfy these three needs together will maintain or enhance their motivation, performance, and development. Fulfillment of any of them in isolation will also contribute to people's motivation but satisfying the need for autonomy is necessary for people to be self-determined. Relatedness alone, for example, is expected to enhance motivation in general but it should support intrinsic motivation only if the people to whom one is connected are also promoting a sense of autonomy (Deci et al., 1991).

1.1.2 Need-to-belong theory

Another influential and widely empirically supported macrotheory, relevant for the goals of the intervention studied here, is the need-to-belong theory. According to Baumeister and Leary (1995), the need to belong represents a fundamental and innate human motivation in pursuing interpersonal attachment. The theory hypothesizes that human beings have a "pervasive drive to from and maintain at least a minimum quantity of lasting, positive, and significant interpersonal relationships" (Baumeister & Leary, 1995, p. 497). Satisfying this drive implies two different conditions.

The first is frequent, affectively pleasant interactions with a few other people. These should ideally be positive, but what is most important is that the majority of them are free from conflict and negative affect.

The second is that such interactions must involve temporally stable and enduring affective concern for each other's well-being. People need to believe that there is a lasting interpersonal bond or a relationship with another person, but the reciprocity of this belief is only desirable and not essential. The most important aspect is that one perceives that one is the recipient of the other's lasting concern, that "you care for me, and that you will take care of me for a long time".

In other words, the need to belong is a need for regular social contact with few other people to whom one feels connected. The satisfaction of this need in forming and solidifying social bonds should induce positive affect, whereas negative affect should be elicited when relationships are

broken, threatened, or refused.

One of the major implications of this theory is that interactions with a series of different partners will be perceived as less satisfactory compared with repeated interactions with the same person/s. Moreover, relationships where there is a strong emotional bond but that lack frequent contact will also be unsatisfactory. And interactions with people with which we do not have an intimate relationship – like strangers or new acquaintances – are not sufficient for satisfying our need to belong.

As belongingness is hypothesized to be pursued with few other people, the need should show a satiation pattern. A person that for example has no regular and intimate relationships will feel this need more intensely and will be more motivated to act on it than a person that has one such connection. At some point, people with multiple relationships characterized by frequent contact and persistent caring will feel that their belongingness is satisfied and will be much less motivated to pursue new intimate, regular, and enduring social bonds.

The main emotional implications of this theory are that real, potential, or imagined changes in one's belongingness status will differentially cause positive or negative emotional responses. And that prolonged, stable conditions of high or low belongingness should cause abundant positive or negative affect. According to empirical evidence the satisfaction or frustration of this need has been found to have various strong effects on emotional patterns and cognitive processes, while the lack thereof appeared causing a variety of ill-effects on health, adjustment and well-being (Baumeister & Leary, 1995).

1.2 Literature review

The literature review presents first previous research on self-determination theory, and on relatedness and peer relatedness in the educational context. Studies concerning the outcomes associated to peer relatedness are then introduced. Finally, the subsection presents articles that investigated classroom peer relatedness-enhancing interventions, and it concludes with an argument on the usefulness of distinguishing relatedness satisfaction from relatedness frustration.

1.2.1 SDT, relatedness, and peer relatedness in education

In the context of education, several studies have indicated that self-determined motivation is linked to various educational outcomes, such as positive academic performance (Pintrich & De Groot, 1990), greater conceptual learning and better memory (Grolnick & Ryan, 1987) to only name a few. When it comes to the relation between the various basic needs in isolation and student motivation at school, there is a wealth of research dedicated to competence and autonomy, while less attention has been given to the effects of relatedness (Fedesco et al., 2019; Trenshaw et al., 2016). This may be because different previous studies have found relatedness to have a low or non-significant relation to motivation. However, the literature dedicated to the role that relatedness has on motivation in the educational context is divided, presenting various cases for and against its positive impact (Fedesco et al., 2019).

According to Fedesco et al. (2019), this fluctuating evidence may be caused by the fact that many studies treat student relatedness as a single construct and fail to distinguish between relatedness toward the teachers and towards class peers, which may function differently and produce different outcomes. In a questionnaire administered to 877 college students, they created two modified versions of the Basic Satisfaction Needs at Work scale (Schultz et al., 2014) measuring the two constructs separately. They found that instructor relatedness and student relatedness were significantly unrelated and that they were associated with different outcomes. While students that were more related to the course instructor also showed more interest in the content, put more effort and perceived they learned more, those that had better class peers' connections had no significant association with any of these measures.

The abovementioned study offers empirical evidence in support of the usefulness of treating the construct of relatedness in educational settings as two-dimensional, separating instructor from peer relatedness. This distinction is particularly relevant for the present study as it focused primarily on the sub construct of classroom peer relatedness and did not involve any measure of the instructor counterpart. The literature on the effects of peer relatedness presents a majority of cases in which it is associated with positive, rather than neutral or negative outcomes.

1.2.2 Outcomes associated to classroom peer relatedness

Positive outcomes of classroom peer relatedness[2] in the education context

An example of research in support of the positive effect of peer relatedness is given by the study of Beachboard et al. (2011). In their article they examined how feelings of relatedness in learning communities contributed to learning outcomes in higher education. They hypothesized that environments that were relatedness supportive would have increased students' motivation, and therefore positively influenced their learning behavior. Based on data available from a national survey of student engagement, they investigated students' perceptions on the contributions of their institutions and found that increased relatedness towards peers and faculty – together with increased higher order thinking assignments – substantially predicted educational outcomes that were relevant to literacy, critical thinking and job preparation. In this study, students' sense of relatedness was the single most influential factor predicting their perceptions of the institutions' contributions to their educational development.

In a longitudinal study involving 1084 middle and high school students, Mikami et al. (2017) investigated the implications of adolescents' perceptions of relatedness with classroom peers for their academic learning. One of their hypotheses was that classroom peer relatedness would have predicted an increase in engagement in their classroom, and they administered three rounds of questionnaires across an academic year to test it. In line with their expectations, they found that perceived relatedness with classroom peers predicted their increased self-reported behavioral engagement in the classroom across one academic year.

In another longitudinal study involving 641 elementary students between third and sixth grade (between 8-9 to 11-12 years old), Furrer et al. (2003) investigated children's relatedness as a factor for academic engagement and performance. In two questionnaires administered at a seven-month distance, they measured relatedness to parents, teachers, and to peers, which combined items about classmates' and friends' relatedness. Together with the two main other types of relatedness, the one towards peers was found to have unique and separate effects. In particular,

[2] The main construct measured in this study is called 'classroom peer relatedness' in the same way as it is used in Mikami et al. (2017), and it means 'students' relatedness towards or with their classroom peers (their classmates)'.

relatedness to peers contributed to their reported classroom engagement and even more so to the emotional feature of engagement.

In an intervention designed to promote students' autonomy to increase their intrinsic motivation and through that their learning outcomes, a study by Trenshaw et al. (2016) showed that relatedness was by far the most relevant need in support of their motivation. A course for second-year engineering students was redesigned to foster their autonomy during the semester, and when 17 of them were interviewed it was not autonomy nor competence that appeared as the most salient motivating factor, but relatedness towards peers and instructors.

Schmidt et al. (2019) investigated the relation between children's feelings of peer relatedness at school and well-being through two intensive longitudinal studies and found a clear association between peer relatedness and positive affect. Jiang et al. (2013) looked at how different kinds of school-related social support were related to adolescents' school satisfaction and found that peer support for learning significantly contributed to it.

Neutral or negative outcomes of peer relatedness in the education context

The literature also presents various cases in which peer relatedness in the school context is not associated with positive outcomes. A study involving 606 students between 12 and 14 years old examined their perceptions of relatedness toward teachers, parents, and friends in relation to their school adjustment and motivation (Ryan et al., 1994). Based on survey results, they found that adolescents' relatedness to friends – in contrast to that toward teachers and parents – was unrelated to school motivation and adjustment. Two other longitudinal studies showed that relatedness to friends in 834 adolescents (Guay et al., 2008) and 946 high school students (Guay et al., 2017) did not predict academic motivation.

In the same article arguing for the distinction of peer- and instructor relatedness constructs discussed above, Fedesco et al. (2019) examined the associations between the two relatedness subscales, motivation, and academic outcomes. On data based on a questionnaire administered to 877 American college students, they found that while instructor relatedness was most predictive of student interest and enjoyment in the course and of their self-reported effort, peer relatedness was not significantly associated with any of the motivation and academic outcomes. They speculated that the effects of class peer relatedness on such outcomes likely depend on the

specific attitudes of the peers at issue. Depending on the peers' positive or negative attitudes towards academic achievement, they can influence a student in opposite directions. The authors further argued that high class peer relatedness could even be a sign of a negative learning environment, as these relationships could be improved in reaction to a dissatisfying course, in the attempt to bond together and feel a sense of comradery.

1.2.3 Interventions aimed at enhancing classroom peer relatedness

To my knowledge there is little research concerning preventive[3] interventions that directly aimed at enhancing relatedness towards classroom peers as the present study did.

One such study by Van Ryzin & Roseth (2018) investigated cooperative learning as a means to improve peer relations and to reduce bullying, victimization, and perceived stress. The intervention consisted of three training sessions with the school staff based on principles from the book *Cooperation in the Classroom* (9th ed.) by Johnson et al. (2013) in a four-month period. Under this approach, cooperative learning included reciprocal teaching, peer tutoring, collaborative reading, and other methods in which students could help each other learn in small groups. Teachers were taught to design collaborative learning activities with the main goals of creating a better context for socially isolated students for developing new friendships, and of breaking down the natural process of bonding among bullies. Their hypotheses were that these positive interactions would increase peer relatedness among the more marginalized (less engaged) students, and reduce bullying, victimization, and perceived stress. In a cluster randomized trial involving 1460 students from 15 different American middle schools, they administered two online surveys (baseline and follow-up) at a five-month distance. Among the various measures included, the construct of relatedness was operationalized with four items from the Relatedness Scale used by Furrer and Skinner (2003). In this study they found that the more

[3] The PeopleUknow intervention was called 'preventive' for two reasons. The first was that its goal was not only to increase relatedness with classroom peers, but also to decrease their frustration towards them, and therefore to prevent socially negative outcomes such as peer rejection and mobbing. The second reason is that the intervention was not directed to a subgroup of students that were already characterized as disadvantaged, but to all students instead. In this sense, it could also have been called a 'generalized' intervention, but since it also had preventive goals, the 'preventive' adjective was preferred.

marginalized students reported significantly lower bullying, victimization and perceived stress when compared to those in the control group. Moreover, the intervention did not seem to increase relatedness among the marginalized students specifically, but it did so for the students in general – independently on their level of behavioral school engagement at the baseline level.

Another study on the effects of an intervention on classroom peer relatedness is given by Mikami et al. (2005) in which they investigated whether a program prevented peer rejection and promoted social acceptance in the classroom environment. The intervention consisted of three main parts: collaborative games, cooperative learning based academic activities, and teacher meetings for maintaining these activities. The collaborative games were not academically oriented and were aimed at reducing peer rejection, while the cooperative academic activities and the related teacher meetings served to strengthen the effects of the collaborative games and to create socially accepting classroom environments to prevent future peer rejection. They hypothesized that children participating to the intervention would report less peer rejection compared to those in the control group. The study involved around 600 middle school American students and 24 teachers from 24 different classrooms, half of which were randomly assigned to the intervention condition, and the other half to the waitlist control condition, that served as a control group. Data was collected through a questionnaire in three time points, in which classroom peer relations were measured on a self-report seven items scale that was created for the purposes of the study. The results confirmed the hypotheses that the intervention would reduce the average level of self-reported peer rejection and increase social acceptance in the classroom environment.

In a similar study, McMahon and Hanrahan (2020) explored the effects of a life skills program on students' relatedness and social anxiety. The LifeMatters program included games and mental skills activities for students with behavioral and developmental issues, and differed in this sense from the present study as it was not preventive. It consisted of 10 sessions of two hours each, all held within a two-week period. Different types of games were performed in a specific order (starting from 'ice-breakers', through 'deinhibiters', 'trust and empathy', and ending with 'initiative' games) with the goals of being fun, and to teach trust, communication, and problem solving. The mental skills activities involved the training of concentration and attention, goal setting, self-talk, optimal activation, imagery, and self-confidence. The sample was taken from an Australian special assistance school and included 20 students in the intervention condition, and

20 in the control group. All between 16-17 years of age, the participants completed self-report measures before and after the intervention period. The relatedness concept from SDT was assessed using the BMPN scale developed by Sheldon and Hilpert (2012) and contained, among others, two three-item subscales, one measuring relatedness satisfaction and the other relatedness frustration. The researchers found that, as they had hypothesized, the intervention sample showed a significant increase in relatedness and a decrease in social anxiety, compared to the control condition. Most notably, this means that the LifeMatters intervention successfully managed to enhance the students' sense of relatedness.

In another study Mikami et al. (2020) investigated the effects of an intervention on teachers' use of practices designed to enhance peer inclusivity and to address child behavior that are off-putting to peers, on students' sociometric ratings. The MOSAIC program consisted of a series of orientation and consultation meetings for the 12 teachers involved during an academic year. They were taught to enact seven different strategies, five to increase peers' inclusiveness (e.g. reinforcing expectations for inclusiveness, highlighting positive attributes), and two to prevent children's behavior problems (e.g. reinforcing expectations for behavior). Data were collected through observed and self-reported teachers' practices, and by asking 194 elementary students to give sociometric ratings – liking or disliking – on each of their classmates. Within the limitations of a pilot study, they found some support for teachers' influence on children's sociometric ratings by increasing peers' inclusiveness and inhibiting their disruptive behavior toward peers.

Other interventions that partially or wholly intended to enhance peer relatedness in the educational context did so through a generic social skills program in an elementary school (DeRosier, 2004), through a 2-year intervention with early elementary students that enhanced their relationships with their peers and teachers (García Bacete et al., 2019), through two creative drama prevention programs at the elementary school level (Walsh-Bowers & Basso, 1999), through a social support intervention aimed at reducing loneliness and increasing academic achievement among college freshmen (Mattanah et al., 2012), and through an online discussion board for graduate students in synchronous hybrid masters (Butz & Stupnisky, 2017).

1.2.4 Relatedness satisfaction and relatedness frustration

It is noteworthy that many of the correlation and intervention studies cited above (e.g. Mikami et al., 2005, 2017; DeRosier, 2004; García Bacete et al., 2019) distinguished the construct of classroom peer relatedness into two different, somehow separate sub constructs. These can be called relatedness *satisfaction* and relatedness *frustration*, and are more or less synonymous with peer acceptance and peer rejection, or peer inclusion and peer exclusion.

Also according to self-determination theory (Ryan & Deci, 2000) it makes sense to distinguish the satisfaction of a need from its frustration (Vansteenkiste & Ryan, 2013). While the first causes immediate well-being and strengthens inner resources that contribute to one's resilience, the second tends to evoke ill-being and to increase vulnerability for defensiveness and psychopathology. They should be distinguished not only as they have different effects, but also because their relationship is not symmetrical, and they should therefore not be conceived as two ends of a continuous spectrum. For example, there is an important difference between the lack of fulfillment of a need and the experience of need frustration. Low need satisfaction does not necessarily involve need frustration, while need frustration by definition involves low need satisfaction. These distinct effects can be illustrated by a metaphor on plants' care. If plants do not receive sunshine and water (i.e., low need satisfaction) they will fail to grow and will die with time, while if salted water is given to them (i.e., need frustration), they will wither more quickly. So, while low need satisafction causes negative effects over time, actively frustrated needs accelerate this process (Vansteenkiste & Ryan, 2013). And the difference between the two is a critical issue "as unfulfilled needs may not relate as robustly to malfunctioning as frustrated needs may" (Vansteenkiste and Ryan, 2013, p. 6).

1.3 Design-based research in education

The origin of design-based research (DBR) is commonly traced back to the work of Brown (1992) and Collins (1992) at the end of the 20th century (Barab & Squire, 2004; Alghamdi & Li, 2013). Their innovative work was advanced in response to the difficulty of implementing learning innovations as they were produced in lab settings that were too different from the demands and constraints of the classroom. They developed therefore a learning research approach

that would take place in naturalistic settings with the assumption that findings obtained in close proximity to real schools would be more easily and rapidly implemented in the classrooms in general (Reimann, 2011).

The main purpose of this approach is to address complex, authentic and context-specific problems in educational settings (Sari & Lim, 2012) to build a stronger connection between educational research and real-world issues (Amiel & Reeves, 2008), while supporting the design and development of prototypical solutions (Lai et al., 2009).

The design-based research is a growing and evolving field (Anderson & Shattuck, 2012; Joseph, 2004) and without the ambition of being exhaustive, we provide here a description of its main common characteristics.

One of the main objectives of DBR is that of effectively bridging the gap between the theoretical and the practical aspects of research within the educational environment (Henn et al., 2006). This approach aims both at developing solutions to real problems and at conducing theory-building research that can be applied to other contexts. DBR is therefore simultaneously used to meet local needs, as it is devoted to the creation of broad models of how humans think, know, act, and learn (Barab & Squire, 2004).

An essential requirement for the production of both practically and theoretically relevant research is that it should be situated in naturalistic settings. As we have seen above, the conviction of the founders Brown and Collins was exactly that researching a problem in a real world situation, would yield more valid results that could be more effectively used to assess, inform, and improve practice in the specific context at issue and likely in other ones too (Anderson & Shattuck, 2012).

As researchers are often not in a position to master all the complex factors of the specific educational environment in which they operate, they establish a collaborative parnership between them and the practitioners (e.g. teachers, students). This collaboration spans from the beginning to the end of the research cycles, from the initial problem identification to the final assesment and publication of theoretical and design principles (Anderson & Shattuck, 2012).

Another defining characteristic of DBR is that it involves multiple iterations. DBR evolves through the creation and development of prototypes that are tested in real world situations

(Anderson & Shattuck, 2012). Each prototyped solution is iteratively refined based on their cyclical formative and summative evaluation (Plomp, 2007) which are partially informed by the collected feedback of the user groups involved.

DBR typically utilizes mixed methods and involves a variety of research tools and techniques (Anderson & Shattuck, 2012). Mixed methods are employed to increase the credibility of ongoing research (Wang & Hannafin, 2005) and multiple resources and different kinds of data are triangulated to maintain and improve the objectivity and reliability of the DBR findings (O'Donnell, 2004; Thurmond, 2001; Wang & Hannafin, 2005; Dix, 2007).

To sum up, DBR aims at bridging the gap between theory and practice, it produces both practical solutions and generalizable knowledge, it is performed in naturalistic settings, it is based on a tight collaboration between researchers and practitioners, it involves multiple iterations, and typically involves the use of mixed methods.

1.4 Epistemological and ontological position

As the majority of writers in the literature on research methodologies agree that pragmatism is a suitable paradigm for underpinning both design-based research (Barab & Squire, 2004; Juuti & Lavonen, 2006) and mixed methods research (Johnson et al., 2007; Morgan, 2007; Tashakkori & Teddlie, 2013) We proceed by presenting the pragmatist epistemological and ontological position assumed in this study, based more specifically on Dewey's pragmatism.

1.4.1 Dewey's pragmatist epistemology and ontology

Pragmatism is a philosophical tradition that broadly speaking understands knowing the world as inseparable from agency within it (Legg & Hookway, 2021). Knowing is seen as an activity that requires an inter*action* with the world in the attempt to solve real world problems (Biesta, 2015).

Actions are necessary for knowledge, but not all actions are conducive to it. It is the process of inquiry that through a combination of thoughtful reflection and interaction with the environment allows humans to find solutions to problematic situations (Morgan, 2014; Biesta, 2015). The model Dewey offers of such a process can be summarized in five phases: "1. Recognizing a situation as problematic; 2. Considering the differences it makes to define the problem one way

rather than the another; 3. Developing a possible line of action as a response to the problem; 4. Evaluating potential actions in terms of their likely consequences; 5. Taking actions that are felt to be likely to address the problematic situation" (Morgan, 2014, p. 1047). Inquiry is understood not as something exclusive to academic or scientific researchers, but also as an activity that people engage in in everyday life. What mainly distinguishes research from more everyday forms of inquiry is the amount of careful attention and self-conscious decision making it requires (Morgan, 2017).

The outcome of such process can be called knowledge, but of a particular kind. Dewey's view of knowledge differs importantly from the more normal correspondentivist version characteristic of traditional epistemology. While knowledge and truth are typically understood as concerning the correspondence between a proposition and reality and general claims are treated as universal and definitive, for Dewey we cannot say anything that is not based on our interactions with the environment, and the knowledge we can produce is therefore seen as situated and temporary. As an inquiry process engages with a problematic situation, its resolution and the knowledge gained from it will be closely linked to the specific characteristics of that situation (Boyles, 2006).

In a world in constant flux, no situation is exactly the same and therefore the knowledge originated in one circumstance cannot be unproblematically generalized to another. This may appear as an extreme relativist stance, and even if it is the case that for Dewey there cannot be definitive truths, valid knowledge is still possible based on what he calls warranted assertions (Morgan, 2017; Boyles, 2006; Biesta, 2015).

A warranted assertion is the outcome of a successful cycle of inquiry. When we meet a situation that we perceive as problematic, we develop a line of action, we execute it (see the five-steps model of inquiry described above), and we experience the consequences of our actions. By executing similar lines of actions in similar situations and by repeatedly experiencing their consequences, we come to learn the likely outcomes of acting one way or another. And these repeated inquiries produce warranted assertions (Morgan, 2017).

Dewey himself often describes his own philosophy as experimentalism, naturalism, or instrumentalism (Brinkmann, 2013, p. 19) and his pragmatic approach has a strong empirical component that resembles that of the scientific method. In a similar way to how a scientist

conduces an experiment, the pragmatic knower has some expectations of how to solve a problem (hypothesis), puts them into practice (experiment, or testing) and measures their validity based on the consequences of these actions (evaluation). One key difference between the two though is the way they treat the conclusions of their inquiries. While a scientist – that shares a correspondentivist theory of truth – would think of the knowledge produced by some experiment as an additional truth about reality to be added to those already established by the scientific enterprise, the pragmatist treats her warranted assertion as a workable solution for a set of problems. The first evaluates a hypothesis in a framework of truth and falsity, the other judges her warranted assertion following a principle of utility. For a pragmatist therefore, the best we can achieve are useful tools that have been shown to be instrumental for achieving a purpose in particular situations (Legg & Hookway, 2021).

Dewey's theory of knowledge is perhaps better described as a theory of knowing. Knowledge is not seen as a final product that should be abstracted from the context in which it is emerged, but rather as a continuous process (know*ing*) that is deeply rooted in the various circumstances in which it is practiced, and which needs to be constantly renewed (Boyles, 2006; Biesta, 2015). While traditional epistemology is concerned with building piece by piece the stable foundations of what is known, pragmatists' warranted assertions are always fallible and their warrantedness is a temporal phase which is a portal to further inquiry in an ever-changing world (Boyles, 2006; Morgan, 2014).

After having discussed the core epistemological issues of Dewey's pragmatism we briefly look at his ontological stance.

In a world understood as a moving whole of interacting parts characterized by both stability and instability, some of these parts are living organisms that make interactions with the environment. These transactions with the outside world are what constitute their experiences which are used to learn about the relationship between organisms' actions and their consequences. Through a process of trial-and-error – sometime mixed in humans with reflection – they acquire a "complex and flexible set of predispositions for actions" that allow them to "maintain a dynamic coordination with their environment" (Biesta, 2015, p. 14). In the attempt to achieve an always higher coordination, the organism creates constructs of the world and uses them in action, and based on the consequences of these actions it tries to produce more effective reconstructions of it.

(Biesta, 2015; Vanderstraeten, 2002).

What is particular of this view is that the creation of constructs is not seen as something that organisms do arbitrarily and independently from the outside world (Vanderstraeten, 2002). Organisms influence the environment and vice versa, and through these reciprocal transactions they continuously refine their constructs. The creation of constructs is therefore strictly embedded in action and they are constrained and shaped by the nature of the world out there (Morgan, 2014).

As knowledge is seen as constructed, Dewey's position can be labeled as transactional constructivism (e.g. Vanderstraeten, 2002; Biesta & Burbules, 2003). But differently from how constructivism is often understood, this view does not define constructs as being purely mental and therefore subjective (Biesta, 2015), but rather as emerging from an adjustive process that involves the constant interaction of both the organism and the environment (Hall, 2013). In this sense, this same view is also defined as transactional realism (e.g. Sleeper, 1986; Hall, 2013).

Dewey's position goes beyond the classic subjective-objective or idealist-realist dualisms (Hall, 2013; Morgan, 2014) and offers a vision of knowledge and reality as being both constructed and real (Biesta, 2015).

1.5 The intervention – PeopleUknow

In its pilot form, the PeopleUknow intervention general goal was to create a more positive and socially secure peer climate in the classroom. It consisted of two main elements combined together: social exercises, and week buddies and groups.

The five exercises were: 'say hi' (*hilse på*), 'did the same' (*gjort det samme*), 'get to know each other bingo' (*bli kjent bingo*), 'stay in touch' (*hold kontakt*) and 'community' (*felleskap* – description below). These were organized around different social configurations that were created with the support of the 'Week Buddy and Group Buddies' function of the newly developed PeopleUknow app. The idea behind this function is to allow the teacher to easily create and keep track of the various social configurations used in the exercises, and to automatically ensure that there is a complete rotation, so that at the end of a cycle everybody has been paired with

everybody else in the classroom – possibly multiple times during a school year. These social configurations can be the Week Buddies, which is constituted by two (on occasion three) students which have been put together for one week; and the Group Buddies, which are composed by two pairs of Week Buddies – which also rotate with the same frequency. In most exercises, different configurations were used, both the Week Buddies and the Group Buddies, and some also involved partial individual work.

The intervention was implemented in two different classes between mid-December 2020 to end of February 2021. In this period of eight weeks (excluding winter vacations) each class undertook a social activity once a week, and some exercises were repeated twice. The duration of each activity varied between 20 to 45 minutes, and each class engaged in all the activities named above. The degree of participation of the teacher varied for each exercise but was often limited to an initial introduction of 10 to 15 minutes. All activities involved a power point presentation and some of them required the use of phones or of a physical cardboard.

The exercise ‘say hi’ exposed the students to different ways to say hi and invited discussions about why we say hi to different people in different ways and how these affect us and others. It tried to make students more aware about this important initial social interaction and served as an occasion for talking together about non-school related things.

The activities ‘did the same’ and ‘get to know each other bingo’ served to start conversations among pairs of students (Week Buddies) about which similar activities they had done in the weekend or which things they had in common more in general. The main goal was to create the conditions for some harmless small talk with somebody they may not know so well and to get to know each other better.

The exercise ‘stay in touch’ asked the students to stay in touch during the week outside of school hours. They were shown twelve different ways to start a conversation (like: ‘any advice for a film or a series?’ or ‘have you done homework?’) and they were expected to write a message to their week buddy at least once a week. This activity aimed at training their ability to initiate low commitment conversations and at creating the opportunity for more frequent contact.

While the others were mostly warm-up exercises, ‘community’ was the most challenging and required higher effort in the sharing and discussion of ideas. Each student had first to individually write down a few ideas on what defined a good community and later had to discuss them with their Week Buddy and reach an agreement on two definitions. They had to evaluate the degree to which those definitions applied to their class, and later all Week Buddies had to send them to the teacher that shared them with the whole classroom. Organized in groups – set up by the app’s algorithm –, they had to reach an agreement on which definition best applied to their class, and then had to discuss how they could become better at some of those aspects. At the end they had to individually write to the teacher various ways for contributing to the class as a community that they found easy, and others that they found difficult. The activity aims were to create awareness on what defines a good community and especially on the sense of community in the classroom, and to show how they could contribute to it if they wanted to.

1.6 Problem statement and research questions

Goals for the research

As illustrated above, classroom peer relatedness has been shown to be related to various positive outcomes (e.g. Grolnick & Ryan, 1987; Pintrich & De Groot, 1990) and the literature about preventive relatedness-enhancing interventions in the classroom context is scarce. Inspired by design-based research (Anderson & Shattuck, 2012) the twofold aim of the present study is to expand the literature about this topic and, at the same time, to create valuable insights for future iterations of PeopleUknow and of similar relatedness-enhancing interventions.

Problem statement and research questions

In accordance with the DBR approach, I conducted a summative evaluation that assessed how well the intervention worked to engender a desirable phenomenon (McKenney & Reeves, 2018, p. 166), and a formative evaluation directed at improving and refining the program (Plomp, 2007, p. 15). To achieve the summative goals, I posed the first research question ‘did the intervention work?’ which was complemented by the answers to the second question ‘what worked and what did not work?’. The formative goals were addressed with the second and the third question ‘how can the intervention be improved?’.

The three research questions therefore were:

1. To which extent did the intervention work?
2. What worked and what did not work?
3. How can the intervention be improved?

Hypotheses

Based on the fact that intervention under examination was partially designed according to self-determination theory principles, and that the majority of the introduced relatedness-enhancing interventions showed a prevalence of positive outcomes (e.g. Van Ryzin & Roseth, 2018; Mikami et al., 2005; DeRosier, 2004; García Bacete et al., 2019), I expected the PeopleUknow program to produce an increase in relatedness satisfaction and a decrease in frustration. More specifically, the hypotheses for the effectiveness of the PeopleUknow intervention were:

1. The treatment condition shows a higher relatedness satisfaction compared with the control condition.
2. The treatment condition shows a lower relatedness frustration compared with the control condition.

As the second and the third questions were explorative, they were not associated with any hypothesis.

2. Methods

2.1 Research design

Since the educational case involved the application of an intervention and the development of innovation, within the limited scope of this graduate thesis, I deemed adequate (Anderson & Shattuck, 2012) to utilize a design-based research inspired[4] research design. This research was designed to study the implementation of the pilot PeopleUknow program, and it involved a semi-summative and formative evaluation of it.

The semi-summative goal was to assess how well the intervention worked to produce a desirable phenomenon (McKenney & Reeves, 2018, p. 166). And the formative evaluation aimed at improving and refining the intervention (Plomp, 2007, p. 15). The summative evaluation is called 'semi' as it happened at the end of the first of possibly multiple iterations of the program, and it was not the final, conclusive evaluation. Moreover, as it is often the case (Plomp, 2007, p. 15), this evaluation was also intended to produce recommendations for improvements of the intervention.

To achieve the summative and formative goals, I posed the three main research questions: 'did the intervention work?' (intervention effectiveness), 'what worked and what did not work?', and 'how can the intervention be improved?'. The summative evaluation was conducted with a mixed methods design that integrated the quantitative answers about the intervention effectiveness and the relevant qualitative findings on the second research question. The formative assessment, on the other hand, combined the qualitative results from the second and the third questions.

The effectiveness of the program was investigated based on a three-round (pre- (T1), mid- (T2), and post- (T3) test) quantitative survey administered to both a treatment (N = 60) and a control condition (N = 98). The usability and improvability questions were explored through a qualitative

[4] The research design of the present study was called DBR *inspired* because it presented various similarities with but also some differences from a prototypical DBR study, mostly due to the limited extension of the thesis format. However, Anderson and Shattuck (2012) encouraged graduate students to engage in design-based research, even if they could only produce an incomplete work seen in the perspective of the longer iterative processes typical of DBR.

group interview that involved five students that had participated to the intervention.

2.2 Context and participants

Context

This study investigated a pilot intervention that was implemented in a Norwegian high school. A total of six classes took part in the research, of which two as the treatment condition and four as the control condition[5].

For each class, one or two teachers were made responsible for the administration of the survey to the students. The one teacher who was in charge of carrying out the PeopleUknow program (to whom we will refer now on as the 'PeopleUknow teacher') had also been a core collaborator in the design of the PeopleUknow digital solution and in the development of the social activities.

Period

The data collection spanned from the second and third week (T1) of December 2021 to the third week of February (T3) – covering about ten to eleven weeks. The intervention started after all pre-tests were completed, and was implemented from the third week of December to the third week of February, lasting therefore (excluding winter vacations) a total of eight weeks.

In T' (T1 → T2), the COVID-19 situation caused a lockdown of society, imposing students a period of digital learning. In T'' (T1 → T2), the pupils could come back to school but the '1-meter' social distancing rule and some other minor restrictions were still in force.

Participants

Only students were involved as participants in this study. The PeopleUknow teacher – which represented the other major user group – was also interviewed, but the material could not be included as it exceeded the capacity of this work.

The total number of students that participated in the data collection and that were included in the data analysis were 158. The six classes counted 163 pupils in total, of which 160 partook to the

[5] The original plan was to have four treatment classes (N = 103) and two control ones (N = 60), but because COVID-19 related complications the treatment condition ended up including only two classes.

survey[6], and two had to be discarded as their class identification could not be determined. Of these 158, 60 belonged to the treatment (38%) and 98 to the control (62%) condition. The response rate in T1 was of 81.60%, in T2 of 65.03%, and in T3 of 65.03%. The percentile distribution of the treatment and of the control condition was quite constant at all time points, with forty percent of students belonging to the intervention and sixty to the control group (*T1* TX = 38%, CO = 62%; *T2* TX = 37% CO = 63%; *T3* TX = 41%, CO = 59%).

The overlap in respondents between T1 and T2 was of 86 individuals (response rate = 53%), of which 33 were associated with the treatment (38%) and 53 to the control (72%) condition. In T2 and T3, the common respondents were 72 (response rate = 44%), and 28 belonged to the intervention (39%), while 44 to the control (71%) group.

Demographic data

Data about gender was collected only in T1 and 50% of students declared to identify as females, 44% as males, while 3% chose the alternative 'other', and 2% chose not to answer. In the sample the male and female genders were therefore equally distributed.

Even if the age was not directly collected, the respondents were all from either the first (66%) or the second year (34%) of high school, and most of them were therefore between 16 and 17 years old.

Other demographic data was collected about the number of parents in the main household and the number of siblings, but it was not included in the analyses.

2.3 Survey

The desired goal of the intervention was to support a more positive and socially secure classroom environment, that I decided to operationalize with the construct of relatedness (Deci & Ryan, 1985, 2000, 2008; Chen et al., 2015). A quantitative survey was therefore administered to answer the question on the effectiveness of the program – as a part of the DBR inspired semi-summative

[6] The number of $N = 158$ was an estimate that came with a degree of uncertainty. The total number of respondents from the survey was initially $N = 169$, which was six more than all the potential participants, but after the data cleaning process, the number went down to $N = 160$.

evaluation.

2.3.1 Procedures

Pilot survey

Before the start of the data collection the survey was piloted. With the collaboration of the PeopleUknow teacher and her colleagues, we managed to gather four students outside of the study sample. Their participation was voluntary, and their feedback was only recorded through notes. Since the content of the survey – as we will see later in this section – was derived from validated scales (Chen et al., 2015; Schultz et al., 2014; van der Kaap-Deeder et al., 2015) that we translated from English to Norwegian, the focus of the piloting process was to ensure that the translated content was not misleading and easily comprehensible.

Recruitment

The recruitment for the survey happened in collaboration with the PeopleUknow teacher. She took contact with her colleagues and managed to involve six classes. Because of COVID-19 related complications, only the two classes (instead of the planned four) associated with the PeopleUknow teacher ended up being selected for the intervention. Since the assignment to the treatment or control condition happened at the class level and was determined by practical reasons, the survey was based on a quasi-experimental cluster sample (Chan et al., 2017; Batistatou et al., 2014).

Information document

Before the recruitment, the students and the teachers received an NSD-approved (*Norsk senter for datasikkerhet*) information document (*informasjonsskriv* – see appendix) that explained the research goals, the data collection methods and the general research structure, the people involved and their responsibilities, and the implications for participating. Information about privacy and consent were also included in this document and students were also informed that the participation in the study was fully voluntary.

Modalities of completion

The pre-test was created digitally on the *Nettskjema* (nettskjema@usit.uio.no) platform and it was later shared through a link to all the teachers involved. Most students took the pre-test (T1) at

school during school hours. Under lockdown, they all filled out the mid-test (T2) separately outside school at the time of the day they preferred. Finally, some of the students completed the post-test (T3) at school, and others outside school.

Rewards

In the mid- and late test the students were offered an incentive. By filling out the questionnaire they automatically took part in a lottery with gift cards as reward. In T2, ten gift cards with a value of NOK 200 each were offered, which had to be used in an online store. In T3 there were twelve gift cards of the same value, but the winners could also choose to utilize them in the school canteen.

2.3.2 Measurements and scales

Content

The content of the survey varied in the three rounds (see table below – see appendix for the complete questionnaires). At all three time points it included a consent form (see appendix) and required the students to provide an identification code that corresponded to the last four digits of their telephone number. Class belonging was only asked in the pre-test, together with the demographic data, which included questions on gender identification, number of parents and of siblings in the main household. The 'need-to-belong sensitivity scale' (Leary, 2013) was also only present in T1. The relatedness scale, which was adjusted for the classroom, family, and school contexts, represented the main measurement and was administered at all time points. Finally, the 'PeopleUknow perceived impact' scale was administered only in T2 and in T3.

	T1		T2		T3	
	TX	CO	TX	CO	TX	CO
Consent and identification code	x	x	x	x	x	x
Class	x	x				
Demographic data	x	x				
Need-to-belong sensitivity scale	x	x				
Relatedness scale (in the classroom, family, and school context)	x	x	x	x	x	x
PeopleUknow perceived impact scale			x		x	

The ‘need-to-belong sensitivity’, the ‘PeopleUknow perceived impact’, and the relatedness scales adjusted for the family and school contexts were not included in the analyses, as their elaboration exceeded the capacity of the present study. The need-to-belong sensitivity scale aimed at measuring students’ sensitivity to the desire for acceptance and belonging which is supposed to reflect a personal trait (Leary et al., 2013). The ‘PeopleUknow perceived impact’ was a self-made scale developed in collaboration with the PeopleUknow teacher and with the PeopleUknow CEO to gather quantitative feedback relevant for the summative evaluation of the intervention. It was partially inspired by the relatedness scale and it addressed more directly the impact of the two major components of the program – social activities, and Week and Group buddies.

Relatedness scale

The main measurement to assess the efficacy of the intervention (first research question) was a classroom peer relatedness scale adapted to the classroom context and to the adolescent sample, and translated in Norwegian.

The scale was derived from the relatedness items of the ‘Basic psychological need satisfaction and frustration scale’ (BPNSFS) (Chen et al., 2015). The BPNSFS originally contained 24 items of which eight corresponded to the relatedness construct that was selected for this study. These eight items were in turn divided into two subparts: four addressed the relatedness *satisfaction* (e.g. ‘I feel that the people I care about also care about me’), and the other four focused on relatedness *frustration* (e.g. ‘I feel excluded from the group I want to belong to’).

Since these items had to be adjusted to the classroom context, I took inspiration from the adapted version of the BPNSFS to the work context (Chen, et al., 2015; Schultz et al., 2014) (e.g. ‘I feel that the people I care about at work also care about me’).

As all these questions were directed to adults but had to be administered to adolescents, I decided to integrate some of the simpler formulations from the corresponding items of the BPNSF children scale (van der Kaap-Deeder et al., 2015) (e.g. ‘The people I like, also like me’).

The translation from English to Norwegian was mainly done by the researcher, but I received important help from the PeopleUknow CEO and the thesis supervisor, who are both Norwegian mother tongue. One example of a classroom peer relatedness satisfaction item is ‘*I klassen føler*

jeg meg nær de menneskene jeg bryr meg om', and one of relatedness frustration '*I klassen føler jeg meg holdt utenfor den gruppen jeg vil være en del av*'.

The classroom peer relatedness scale was measured on a five-point Likert scale (Joshi et al., 2015) going from '*helt uenig*' (completely disagree, value = 1) and '*noe uenig*' (somehow disagree = 2) on one side, having '*usikker'* (uncertain = 3) in the middle, and with '*noe enig*' (somehow agree = 4) and '*helt enig*' (completely agree = 5) at the other extreme.

The classroom peer relatedness satisfaction subscale showed a Cronbach's alpha in T1 of 0.86, and in T2 and T3 of 0.83. The relatedness frustration subscale presented an alpha of 0.73 in T1, of 0.76 in T2, and of 0.73 in T3. All were therefore beyond the standard threshold of significance of 0.70.

	Cronbach's alpha		
	T1	T2	T3
Relatedness satisfaction	0.86*	0.86*	0.83*
Relatedness frustration	0.73*	0.76*	0.73*

*$\alpha > 0.70$.

T2 mid-test: changes from T1 to T2

The main modification made to the pre-test (T1) in the mid-test (T2) was the context to which the relatedness scale referred. While in T1 the relatedness scale was directed toward the broader *school* setting, due the COVID-19 related lockdown that hindered interactions outside one's class, the items were corrected in T2 to the narrower *classroom* context, and were maintained that way in T3.

2.3.3 Quantitative analysis methods

Cleaning the data

Before starting with the analysis, the quantitative material went through a data cleaning was aimed at eliminating survey responses that were inaccurate or wrong (Andreadis, 2014). These were divided in disingenuous answers and double answers.

Disingenuous answers

In the evaluation of apparently disingenuous answers, multiple factors were simultaneously taken in consideration for each student response, such as: duration of completion, extreme results, inconsistent responses throughout various rounds, very repetitive answers, and wrong identification number provided.

Regarding the length of completion, all answers that took more than two and a half minutes in T1 were considered acceptable. In T2 and in T3, the survey administered to the treatment and the control group contained different amounts of items, and the duration limit for their acceptability was adjusted accordingly. Moreover, a decreasing threshold was considered for each round as it was assumed that the students got familiar with the questions that were equal across the questionnaires and would therefore use less time to answer them. In T2, the minimum duration for the treatment group was set to two minutes, and for the control group to one and a half minutes. In T3, the limit was kept to two minutes for the intervention condition, and it was lowered to one minute and 15 seconds for the control sample. In addition to a minimum acceptability threshold, a maximum limit of 20 minutes was also taken in consideration.

Uncommon answer patterns were also carefully considered. Examples of such patterns were scores that were extremely positive (maximum average of 5.0) or extremely negative (minimum average of 1.0), and results that were very repetitive (e.g. the student answered '*noe enig*' to all questions of the questionnaire).

Unusual changes across the different rounds were given particular attention, especially if students gave very contrasting answers or extreme results in the later rounds – extremely positive, negative, or repetitive. A degree of coherence was regarded as important and if some student had for example extremely positive responses in all three rounds, that was considered acceptable.

I also investigated more closely those responses that provided an inaccurate identification.

All these elements were evaluated in combination with each other and in a conservative way. Aware that my judgment could be wrong and that by removing some data points the study results could be distorted, only the responses that seemed problematic on multiple of these aspects simultaneously were eliminated. Some examples of such answers were a student with a non-

existing identification number of '1234' that had extremely positive results and a very low completion time; another pupil that responded only '*usikker*' to all items in T2 and then showed extremely positive scores on all relatedness satisfaction scales and extremely negative on all frustration scales in T3.

Double answers

I had to select out a few other responses that were double answers in T1, that is, questionnaires that were filled more than once by the same students in the same time point. Because of a technical error on my side, in one class only a few students managed to deliver their responses in their first attempt. As a consequence, they all had to take the pre-test again a week later, including those which feedback was successfully registered. I had to choose which of the double answers I had to keep, and I decided to preserve those of the genuine first pre-test.

After this selection process of eliminating seemingly disingenuous responses and double answers, the number of total participants went down from 169 to 160.

***P* value < 0.10**

For the whole quantitative analysis, I considered the significant threshold of the p value as *.10* instead of the standard *.05*. Since pilot studies in general – and this case specifically – tend to be underpowered to achieve statistical significance at the 5% level, Lee et al. (2014) argue that researchers should consider using the 10% level instead. One of the main reasons for doing so is that the advantages appear to outweigh the disadvantages. Having a more generous threshold likely causes Type I – false positive – error, but in the context of a pilot study the consequences are minor compared to what they would be if the same error was made for a policy that had to be implemented at the societal level. With pilot studies, the impact of a Type I error would be that a definitive study may be falsely undertaken, while in the second case the result could consist in implementing a policy, for example about the effect of an intervention in improving the classroom environment, that is falsely concluded as beneficial (Lee et al., 2014). Since pilot studies are more about learning than confirming, and since they are normally underpowered, if their purpose is to provide evidence of the efficacy of the intervention, Lee et al. (2014) argue that the significance level for hypothesis testing can be justifiably increased.

2.4 Group interview

2.4.1 Procedures

Recruitment

The recruitment for the group interview was the result of a collaboration between the PeopleUknow teacher and it resulted in a convenience type of sample comprised of five students that participated to the intervention.

2.4.2 Interview guide

Developing the interview guide

In preparation to the interview, I investigated the program together with the PeopleUknow teacher. I asked for explanations on what the intervention consisted of and on what where the intentions behind the different exercises. We discussed about the frequency and duration of these activities, and on the different social configurations they included – whether the students were participating individually, with their Week or Groups Buddies, or with the rest of the classroom. I was informed on the role of the teacher and on which exercises happened digitally and which face-to-face. Finally, in line with the DBR approach (Anderson & Shattuck, 2012), we tried to empathize with the students' reception of the intervention (second research question) and I asked the teacher what she would ask if she was investigating the same research question. The feedback from this meeting was used to inform the interview guide that was utilized in the group interview.

For the group interview I chose a semi-structured type of interview (Barriball & While, 1994) to compromise between the pilot level of the intervention that required a partially explorative approach (formative evaluation), and the clearly defined research questions that needed to be addressed.

Interview guide

For the beginning of the interview, I prepared a short introduction divided in four parts in which:

1. I would do some small talk to make them feel comfortable and thank them for participating;

2. I would briefly explain what my research questions were and the expected duration and structure of the interview;
3. I would repeat the rules of voluntary participation and of giving and withdrawing consent, and I would tell them what type of data I would collect and who would have had access to it and with which purposes;
4. and finally where I would give a brief introduction of the types of behavior I wished for the conversation (e.g. “It is your turn to talk, not mine. I am here to listen to you and to hear about your experiences and opinions”, “I am interested in both the positive and the negative aspects of the intervention”, “Do not rush. Some questions can be difficult and could take time to answer, so take some time to reflect if you need to”, “There are no right or wrong answers, it is only your experience that matters”, etc.).

For the development of the interview guide, I kept in mind the second and third research questions and the theoretical background of self-determination and need-to-belong theory (Deci & Ryan, 1985, 2000, 2008; Baumeister & Leary, 1995), and I prepared two documents based on these.

One document was a mind map that visually illustrated the research questions and that included various suggestions and dichotomies that could help me moderating the interview. Examples of such suggestions are: have a comparative perspective and use time as an organizational principle, sum up what they said and ask for confirmation. While some examples of dichotomies are: ‘let them talk’ versus ‘focus on the research questions’, ‘concentrate on the past’ and on how the intervention was’ versus ‘focus on the future and on how the program could improve’, ‘ask for general opinions’ versus ‘concrete examples’, ‘request personal experiences’ versus ‘impressions of others’ perception (at the class level)’, ‘analyze the intervention components separately’ versus ‘all of them combined at the same time’.

The second document contained a few specific questions that were a more contextualized version of the research questions connected with the theoretical background, which were developed also partially based on the meeting with the intervention teacher held in preparation to the interview.

The interview

The group interview happened digitally through the Zoom videoconference application (Zoom

Video Communications Inc., 2016) and involved two separate smaller groups at the same time. Of the five participating students, three from one class called from a room, and two from the other class called from another room.

I proceeded with the short introduction that I planned to have with small talk as warm up, with a brief explanation of the expected content and structure of the interview, with a repetition of the rules around consent, and with an invitation to give open and honest feedback. I asked for their consent to record the conversation and finally started with the first research-related questions.

We started with a discussion of what worked and what did not work in the intervention (second research question) and concluded with a conversation on how the intervention could be improved (third question).

The planned duration for the interview was of one hour (included the introduction), but as the interviewees were eager to talk it ended up lasting one hour and eighteen minutes (excluded the introduction). Only one student had to leave the conversation and they did so ten minutes before it ended.

After the interview was finished, I collected their consent in writing by sending them a consent form they signed (see appendix).

2.4.3 Qualitative analysis methods

Thematic analysis

For analyzing the group interview I have utilized a thematic analysis approach (Braun & Clarke, 2006). TA is not tied to any particular pre-existing theoretical framework nor epistemological position (Braun & Clarke, 2006) and is therefore compatible both with self-determination and need-to-belong theories (Deci & Ryan, 1985, 2000, 2008; Baumeister & Leary, 1995), and with Dewey's pragmatist philosophical assumptions (Vanderstraeten, 2002; Boyles, 2006; Hall, 2013; Biesta, 2015; Morgan, 2014, 2017).

According to Braun and Clarke (2006), there is a number of decisions that should be explicitly considered and discussed when using thematic analysis. Among those that I have not already implicitly tackled there are: the identification of a theme, the amount of data set utilized in and

the richness or detailedness of the analysis, the use of inductive (bottom-up) or theoretical (deductive, top-down) approach, and of semantic or latent themes.

Since a theme represents by definition a "*patterned* response or meaning with the data set" (Braun & Clarke, 2006, p. 82), I judged that it should be constituted by a few[7] utterances that shared something relevant for answering a research question.

The goal of the analysis was to prioritize a rich description of the students' declarations, which became also relatively detailed as it was based on only one interview.

The approach that I used was theoretical (deductive) and not inductive (Braun & Clarke, 2006) since the analysis was driven by pre-existing research questions and a theoretical framework and not from emergent topics.

The themes I developed in the analysis were a mixture of the semantic and the latent type (Braun & Clarke, 2006). They were semantic in the sense that they were to a large extent based on the surface meanings of the data, and latent as they were built with the research questions and the theoretical framework in mind.

Analysis procedure

I transcribed the whole conversation in the program NVivo12, and I proceeded with the analysis by flexibly and iteratively following the six step-by-step guide provided by Braun and Clarke (2006) that includes: familiarizing yourself with your data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, producing the report.

I familiarized myself with the data by reading it once and by noting down my initial reactions about some patterns that could be later used to form codes. From the second reading I started generating initial codes while mostly keeping in mind the research questions and the theoretical framework. Through multiple reading rounds I gradually and iteratively sorted different codes into themes and named them utilizing initially *in vivo* codes (Manning, 2017). I made sure that most of the relevant interview transcript was coded and categorized into themes, and I then refined them by making sure that each was associated to a coherent set of coded units. I

[7] The theme counting the least passages was 'online is not the same' with four references from the group interview.

distinguished the themes between main and sub-themes and organized them in a thematic map, and finally wrote a report.

It is worth highlighting that this process was not rigidly followed step-by-step, but that it involved various iterations, especially between the phases of generating codes and developing and organizing themes.

2.5 Mixed-methods typology

The mixed methods research paradigm is relatively new and still in the process of being established (Leech & Onwuegbuzie, 2009). For this reason, I specify here its definition offered by Johnson et al. (2007, p. 123): "mixed methods research is the type of research in which a researcher or team of researchers combine elements of qualitative and quantitative research approaches (e.g., use of qualitative and quantitative viewpoints, data collection, analysis, inference techniques) for the broad purpose of breath and depth of understanding and corroboration".

The main reason why a mixed methods design was used for the semi-summative evaluation of the PeopleUknow intervention, was to examine outcomes along with experiences in order to develop a more complete understanding of the subject matter (Creswell et al., 2011; Johson et al., 2014).

As a way to organize the multitude of mixed methods research designs that have emerged in the last years, various typologies have been suggested (e.g. Johnson & Onwuegbuzie, 2004; Leech & Onwuegbuzie, 2009; Tashakkori & Teddlie, 2013; Ponce & Pagán-Maldonado, 2015). Typologies are important for several reasons. They provide a flexible organizational structure to the mixed methods field, and help bringing more credibility to the research on education and in the social and behavioral sciences by providing examples of studies that are significantly different from monomethod design. Moreover, they contribute to advance a common language for the mixed methods field and provide guidance and direction for researchers to design their own mixed methods studies (Teddlie & Tashakkori, 2003). I proceed therefore with defining the dimensions proposed by the abovementioned and by other typologies for my study.

Time orientation. The timing or chronology of the quantitative and qualitative parts can be

defined in this instance as parallel or concurrent (Tashakkori & Onwuegbuzie, 2009; Leech & Onwuegbuzie, 2009), which means that these two processes have been implemented in the same period of time.

Fixed versus emergent. The design of this study can be described as fixed or *a priori* as the methods have been determined before the start of the research process and have been carried out accordingly (Creswell et al., 2011; Bazeley & Kemp, 2012).

Stage of integration (Tashakkori & Onwuegbuzie, 2009; Leech & Onwuegbuzie 2009). The stage where the integration between the quantitative and qualitative parts happened was the interpretation phase, which in this document corresponds to the discussion section.

Level of mixing: full of partial. As the integration is located only at the interpretation phase and therefore involves only one stage, this study can be defined as having a *partially* mixed methods design (Leech & Onwuegbuzie 2009).

Emphasis of approaches: equal versus dominant status. This mixed methods approach can be called 'QUAN+qual' as the quantitative part has a dominant status over the qualitative one (Leech & Onwuegbuzie, 2009).

Purpose of integration. The main purpose for integration is complementarity (Greene et al., 1989; Johnson & Onwuegbuzie, 2004), which in this case implies the clarification of the quantitative results (from the first research question) with the relevant qualitative ones (from the second research question). The more particular goal of this complementarity strategy is combining for enhancement as the quantitative method is judged as complete but inadequate without the supplementary qualitative method, and as the latter is not in a form that could support a complete analysis (Bazeley & Kemp, 2012).

Summing up the definitions from the various typologies at issue, the current study can be described as having a fixed parallel QUAN+qual (quantitative dominant) complementary partial mixed method design.

Validity in mixed methods research

Validity in mixed methods research is based on the compliance with the validity criteria

established in each research model. The quantitative and qualitative approaches of a mixed methods study should meet the criteria for internal and external validity of their respective models (Ponce & Pagán-Maldonado, 2015, p. 127).

2.6 Relation of DBR and MMR with Dewey's pragmatist epistemology

For this DBR-inspired mixed methods design I have chosen a Deweyan pragmatist epistemological and ontological position (Vanderstraeten, 2002; Boyles, 2006; Hall, 2013; Biesta, 2015; Morgan, 2014, 2017). Many researchers have argued for some version of pragmatism as the most useful philosophy to support design-based research (Barab & Squire, 2004; Juuti & Lavonen, 2006) and mixed methods research (eg. Johnson & Onwuegbuzie, 2004; Johnson et al., 2007; Feilzer, 2009; Bishop, 2015) as it offers an alternative paradigm to the qualitative and quantitative that allows to combine the streghts of both (Morgan, 2014). The way Dewey's pragmatism does so, is by offering a theory of knowledge (or knowing) and truth that goes beyond the traditional subjective-objective dualism (Bishop, 2015). Knowledge is seen as a situated, temporary, iterative and never-ending process that emerges from interactions and mutual contributions of *both* the social individual and its environment, and is in this sense considered both constructed and real. Truth is neither solely determined by understanding how an indiviual constructs her world (social constructionism) or by how well a proposition represents and independent reality (positivism), but it is rather about the relationship between actions and consequences. Knowledge is dependent on the quality of the process of inquiry that combines action and reflection to produce warrantable assertions, and it is defined by the degree to which we achieve our intended goals in practice. The pragmatist conception of truth aknowledges the epistemological differences between quantitative and qualitative approaches and likewise sees them as compatible, justifying the mixing of the two (Bishop, 2015). Pragmatism and design-based research share a vision of knowledge as situated, iterative, interactive (interventionist), and tightly connected to the differnce it makes in practice (consequentialist). Finally, all three – pragmatism, mixed methods, and DBR – the goal of research is to generate meaningful change in the world (Bishop, 2015; Anderson & Shattuck, 2012).

3. Analysis

In this section we first analyze the quantitative material from the survey that was utilized to answer the first question ('to which extent did the intervention work?') on the effectiveness of the intervention, which was used as the dominant component in the complementary mixed methods semi-summative evaluation (Greene et al., 1989; Plomp, 2007, p. 15). In the second part we present the thematic analysis (Braun & Clarke, 2006) of the qualitative material from the group interview that was performed to answer the second[8] ('what worked and what did not work?') and third ('how can the intervention be improved?') question.

3.1 Quantitative analysis – RQ 1

In this subsection we evaluate the statistics relevant for the effectiveness of the program. The survey measured the classroom peer relatedness satisfaction and frustration of an intervention and a control group in the three time points T1, T2, and T3. We consider first the descriptive statistics and dependent T-tests, and later look at the bivariate correlations. We then examine the independent T-tests, and conclude with the assessment of linear regressions.

3.1 RQ 1 – 'to which extent did the intervention work?'

3.1.1 Descriptive statistics and dependent T-tests

The descriptive statistics and dependent T-tests presented in table 1 (below) are used to show the development of the sub measures of classroom peer relatedness satisfaction and frustration within the treatment and the control condition separately. Based on the hypotheses[9], we expect the intervention group to show a statistically significant within-group positive development of relatedness satisfaction and a negative one on frustration (a significant decrease in frustration) in

[8] The relevant feedback from the second research question was also used as the complementary (non-dominant) component in the mixed methods semi-summative evaluation.

[9] The hypotheses for the answer to the first question (effectiveness of the intervention) were that 1) the treatment condition shows a higher classroom peer relatedness satisfaction and 2) a lower relatedness frustration, compared with the control condition.

		Intervention			T-test	Signficance	Control			T-test	Signficance
		n	***M***	**SD**	***t***	***p***	***n***	***M***	**SD**	***t***	***p***
Pair 1	T1 Relatedness satisfaction	33	4.26	0.75	0.489	0.63	53	4.07	0.74	-1.86	0.07*
	T2 Relatedness satisfaction		4.19	0.84				4.25	0.71		
Pair 2	T2 Relatedness satisfaction	28	4.11	0.85	-2.35	0.03**	44	4.38	0.68	-0.11	0.92
	T3 Relatedness satisfaction		4.31	0.82				4.39	0.75		
Pair 3	T1 Relatedness satisfaction	37	4.18	0.72	-0.49	0.63	53	4.13	0.79	-2.08	0.04**
	T3 Relatedness satisfaction		4.24	0.77				4.39	0.7		
Pair 4	T1 Relatedness frustration	33	1.79	0.61	-0.14	0.89	53	1.9	0.81	1.79	0.08*
	T2 Relatedness frustration		1.8	0.7				1.66	0.81		
Pair 5	T2 Relatedness frustration	28	1.87	0.72	1.1	0.28	44	1.56	0.77	1.32	0.19
	T3 Relatedness frustration		1.76	0.87				1.44	0.66		
Pair 6	T1 Relatedness frustration	37	1.79	0.6	0.71	0.48	53	1.91	0.86	3.99	0.00***
	T3 Relatedness frustration		1.72	0.79				1.49	0.71		

**p < 0.1; **p < 0.05; ***p < 0.01*

Table 1: Descriptive statistics and dependent T-tests – classroom peer relatedness satisfaction and frustration for the treatment and control group in T1, T2, and T3.

the various intervals. For the control group, we expect no such development.

Relatedness *satisfaction* in the treatment and control conditions

If we look at the development of relatedness *satisfaction* in the *intervention* group, we see that the mean values were quite stable and oscillated between 4.11 and 4.31, with a range of 0.20. The only statistically significant change in mean was between the increase from T2 to T3 ($p < 0.05$; pair 2, $N = 28$), but if we look at the wider time span from T1 and T3 (pair 3, $N = 37$) we see no statistically significant variation.

The mean values of class relatedness satisfaction in the *control* group were less stable and spanned from 4.07 to 4.39, presenting a higher range of 0.32. There was a significant increase between T1 and T2 ($p < 0.10$; pair 1, $N = 53$), and between the wider time span from T1 to T3 ($p < 0.05$; pair 5, $N = 53$).

In general, we see that for the intervention group, class relatedness satisfaction went slightly down between T1 and T2 (not sig.[10] change) and went up again with a statistically significant increase. Considering the wider span from T1 to T3 though, we do not see a significant increment as it was expected in the first hypothesis. The development of the control group, on the other side, started from a lower mean value in T1 and raised gradually in the two following periods. The change was significant between T1 and T2 and was statistically significant between the wider T1 and T3 time span.

The results of the digital learning T' period and of the wider interval (T1 → T3) indicate that the intervention did not have an impact in the intended direction, and that it may even have hindered a positive increase similar to that showed by the control group. In the more normal physical learning period T'' though, the results were in support of the first hypothesis.

Relatedness *frustration* in the treatment and control conditions

If we observe the development of class relatedness *frustration* through time in the *intervention* group, we see that it was stable, with a range of 0.15, and with no significant variations.

The class relatedness frustration of the *control* sample was less stable, with a range of 0.47, and

[10] 'sig.' it is used this document as an abbreviation for 'statistically significant'.

showed a decreasing trajectory. The reduction between T1 and T2 was statistically significant ($p < 0.10$; pair 4, $N = 53$), but not sig. in the second period between T2 and T3. And in the wider time frame from T1 to T3 we observe a significant decrease of relatedness frustration ($p < 0.01$; pair 6, $N = 53$).

The class relatedness frustration of the *control* sample was less stable, with a range of 0.47, and showed a decreasing trajectory. The reduction between T1 and T2 was statistically significant ($p < 0.10$; pair 4, $N = 53$), but not sig. in the second period between T2 and T3. And in the wider time frame from T1 to T3 we observe a significant decrease of relatedness frustration ($p < 0.01$; pair 6, $N = 53$).

The lack of variation in the intervention group, seen in contrast with a significant decrease in frustration in the control group in T' (digital learning) and the wider time span (T1 → T3), indicates that, in general, the intervention did not bring about the expected effects, and that it may even have obstructed a decrease in frustration analogous to the one presented by the control classes. The exception was again found in the physical learning period T'', where the intervention appeared to have a neutral effect.

3.1.2 Bivariate correlations

In the bivariate correlation analysis, we compare the relative stability of classroom peer relatedness satisfaction and frustration results between the treatment and the control condition. In accordance with the hypotheses, we expect the intervention group to show a significant higher instability (or lower stability) on both sub measures in most intervals.

Relatedness *satisfaction* in the treatment and control conditions

From table 2 and 3 (below)[11] we can see that T1 peer relatedness *satisfaction* showed a moderate stability toward satisfaction in T2 both in the intervention ($r = 0.50$, $p < 0.01$) and in the control group ($r = 0.52$, $p < 0.01$). Between T1 and T3 though, the correlation of relatedness satisfaction differed between the two conditions, with the intervention classes showing low ($r = 0.36$, $p <$

[11] For technical reasons, in the bivariate correlations, the more generous threshold of statistical significance at $p = 0.10$ recommended by Lee et al. (2014) could not be considered. Only the thresholds made automatically available by SPSS of $p = 0.05$ and $p = 0.01$ are therefore shown.

0.05) and the control classes presenting no significant stability. The correlation between T2 and T3 was also different in the two cases, with the treatment condition presenting a high stability ($r = 0.85$, $p < 0.01$) and the group condition an only moderate one ($r = 0.52$, $p < 0.01$).

These differences in stability in relatedness satisfaction in the intervals between T1 and T3, and T2 and T3 were against the hypothesized outcomes. As the program was supposed to have a higher impact on peer relatedness satisfaction, the expectations for the treatment group were to present a lower stability (higher instability) in the construct compared to the control group.

Study variables for TX	**1**	**2**	**3**	**4**	**5**	**6**
1. T1: Relatedness satisfaction	1					
2. T2: Relatedness satisfaction	.50**	1				
3. T3: Relatedness satisfaction	.36*	.85**	1			
4. T1: Relatedness frustration	-.50**	-.54**	-.43**	1		
5. T2: Relatedness frustration	-.36*	-.74**	-.61**	.56**	1	
6. T3: Relatedness frustration	-.08	-.74**	-.60**	.62**	.81**	1

**p < 0.05; **p < 0.01.*

Table 2: Bivariate correlations – classroom peer relatedness satisfaction and frustration for the treatment *group in T' (N = 33), T'' (N = 28), and T1-T3 (N = 37).*

Study variables for CO	**1**	**2**	**3**	**4**	**5**	**6**
1. T1: Relatedness satisfaction	1					
2. T2: Relatedness satisfaction	.52**	1				
3. T3: Relatedness satisfaction	.26	.52**	1			
4. T1: Relatedness frustration	-.35**	-.02	-.24	1		
5. T2: Relatedness frustration	-.53**	-.55**	-.33*	.30*	1	
6. T3: Relatedness frustration	-.43**	-.32*	-.52**	-.52**	.66**	1

**p < 0.05; **p < 0.01.*

Table 3: Bivariate correlations – classroom peer relatedness satisfaction and frustration for the control *group in T' (N = 53), in T'' (N = 44), and in T1-T3 (N = 53).*

Relatedness *frustration* in the treatment and control conditions

When it comes to the *frustration* of relatedness with the class peers, we observe that the stability between T1 and T2 is moderate for the intervention condition ($r = 0.56$, $p < 0.01$) and on the boundary between low and negligible for the group condition ($r = 0.30$, $p < 0.05$), while between

T2 and T3 the stability was moderate for both groups (TX: $r = 0.62$, $p < 0.01$; CO: $r = 0.54$, $p < 0.01$). In the interval spanning from T1 to T3, the stability in relatedness frustration was high for the intervention classes ($r = 0.81$, $p < 0.01$) and only moderate for the control classes ($r = 0.66$, $p < 0.01$).

These differences were again against the hypotheses. As it was the case for relatedness satisfaction, the expectation for the program was to have a higher impact on the peer relatedness frustration of the intervention classes compared to that of the control ones, and therefore for the intervention classes to show a lower stability (higher instability). Not only this was not the case, but in two out of the three time intervals the control condition showed a considerably higher instability, which was the opposite of what expected.

3.1.3 Independent T-tests

In the independent T-tests we compare the classroom peer relatedness satisfaction and frustration between the treatment and the control condition at the three different time points T1 (pre-test), T2 (mid-test), and T3 (post-test). Based on the hypotheses, we expect the intervention group to show a significant higher relatedness satisfaction and lower frustration in T2 and T3.

In the 'Significance' column of the table 4 (below) we see that all p-values are higher than the .10 threshold – recommended by Lee et al. (2014) – for all the comparisons between the intervention and the control conditions, except for two cases. Both of these significant differences appeared in the overlap of respondents of the between T2 and T3 (T'') and interested relatedness frustration. In T2, the intervention treatment condition showed a sig. higher frustration ($p < 0.10$; $M = 1.87$) compared to the control condition ($M = 1.56$). In T3, the same happened, with the intervention group ($p < 0.10$; $M = 1.76$) scoring a sig. higher frustration in comparison with the control counterpart ($M = 1.44$).

These results showed that in both time points T2 and T3 the intervention condition exhibited a significant higher relatedness frustration. Considering that these differences were not present in the pre-test (T1), these results were not only against, but in opposition to the second hypothesis, as they indicate that the intervention increased frustration instead of reducing it.

		Intervention			Control			T-test	Significance	Cohen's d
Interval		***n***	***M***	**SD**	***n***	***M***	**SD**	***t***	***p***	***d***
T'	T1: Relatedness satisfaction	33	4.26	.75	53	4.07	.74	-1.14	.26	.74
	T2: Relatedness satisfaction		4.19	.84		4.25	.71	.36	.72	.76
T"	T2: Relatedness satisfaction	28	4.11	.85	44	4.38	.68	1.5	.14	.75
	T3: Relatedness satisfaction		4.31	.82		4.39	.75	.42	.67	.78
T1 - T3	T1: Relatedness satisfaction	37	4.18	.72	53	4.13	.79	-.27	.79	.76
	T3: Relatedness satisfaction		4.24	.77		4.39	.70	.94	.35	.73
T'	T1: Relatedness frustration	33	1.79	.61	53	1.90	.81	.66	.51	.74
	T2: Relatedness frustration		1.8	.70		1.66	.81	-.84	.40	.77
T"	T2: Relatedness frustration	28	1.87	.72	44	1.56	.77	-1.71	.092*	.75
	T3: Relatedness frustration		1.76	.87		1.44	.66	-1.78	.08*	.75
T1 - T3	T1: Relatedness frustration	37	1.79	.6	53	1.91	.86	.73	.47	.77
	T3: Relatedness frustration		1.72	.79		1.49	.71	-1.42	.16	.74

** $p < 0.10$*

Table 4: Independent T-tests – Classroom peer relatedness satisfaction and frustration for the treatment and the control group in T1, T2, and T3.

If we look at relatedness frustration in the same time points T2 and T3 but in the other two intervals T' and T1 → T3, where the respondents considered were slightly different, we do not find the same significant differences. The common respondents in T' were TX *N* = 33 and CO *N* = 53, in T1 → T3 they were TX *N* = 37 and CO *N* = 53, while in T'' they were TX *N* = 28 and CO *N* = 44. Even if in the two other intervals T' and T1 → T3 the intervention group showed a higher relatedness frustration, these differences were smaller and not statistically significant. This indicates that in T2 and T3 the intervention did not have the same negative effects on frustration for all students, and that some of the significant effect measured in T'' may be explained by group differences.

For all other comparisons between the two conditions, we do not find any statistical difference. This indicates that in these time points, the differences between the treatment and the control condition – on both relatedness satisfaction and frustration – are not strong enough to be associated with an external influencing factor.

All in all, the independent T-tests showed that the intervention generally appeared not to have a statistically significant effect either in the desired, or in the opposite direction. More specifically, the program presented a negative effect on frustration (it increased frustration) in some but not all students in T2 and T3.

3.1.4 Linear regressions

Inspired by the graph of Vansteenkiste and Ryan (2013, p. 43), all models in the linear regressions (table 5 – below) included both classroom peer relatedness satisfaction and frustration as predictors – together with the variable about participation to the treatment or to the control condition (in the table referred as 'TX / CO condition'). The linear regressions show the development in the relatedness satisfaction and frustration of the intervention group compared with the control group, and if this development is statistically significant (*p*). In addition, they present the amount of variance explained by every model (R^2) and the strength of the effect of each individual independent variable (predictor) on the independent (predicted) variable (standardized beta coefficient *ß*). In accordance with the hypotheses, we expect that being assigned to the intervention condition would show a significant positive development for

relatedness satisfaction and a negative one for frustration (sig. decrease in frustration)[12].

In table 5, all models included relatedness satisfaction, frustration, and participation to the treatment or control condition as dependent variables. The first three models predicted classroom peer relatedness satisfaction in T', T'', and T1 → T3 in order. The last three models predicted relatedness frustration again first in T', in T'', and then in T1 → T3. All models were statistically significant at $p < 0.01$ and had a R^2 higher than 0.20, except for model 3 which had an R^2 of 0.13 with a model significance (p) at the boundary of the 0.01 significance threshold.

What we observe from the table is that being assigned to the intervention ('TX / CO condition') was a significant predictor only in model 4 ($p < 0.10$, $ß = 0.16$) and in model 6 ($p < 0.10$, $ß = 0.17$), both predicting relatedness frustration. In model 4, the dependent variable was T2 frustration, and it was predicted by measures from the adjacent time point T1. In model 6, the independent variable was frustration in T3, and the predictors were from the more distant time point T1. As in both cases the standardized beta coefficients of 'CO / TX condition' was positive, and as it referred to a categorical variable with a value of one for the treatment and of zero for the control condition, these results indicate that participating to the intervention significantly increased relatedness frustration. These outcomes concerning frustration in the digital learning interval T' and the wider T1 → T3 were not only against the second hypothesis but pointed in the opposite direction. In the other time intervals, the treatment predictor ('CO / TX condition') was not statistically significant, meaning that the intervention did not show any of the effects expected by the hypotheses.

[12] The models in which these significant predictions were expected to occur should also be significant themselves ($p < 0.01$) and should explain more than the 20% of the variance ($R^2 > 0.20$). As we see below, all models except model 3 satisfied these requirements.

		Significance							Significance	
Model	***R^2***	***F***	***p***	***Interval***	***n***	***Dependent variable***	***Independent variables***	***ß***	***t***	***p***
1	.26	9.83	.00**	T'	86	T2: Relatedness satisfaction	TX / CO condition	-.10	-1.09	.28
							T1: Relatedness satisfaction	.50	5.11	.00***
							T1: Relatedness frustration	-.05	-.47	.64
2	.45	18.87	.00**	T"	72	T3: Relatedness satisfaction	TX / CO condition	.09	1.03	.31
							T2: Relatedness satisfaction	.69	5.66	.00***
							T2: Relatedness frustration	.01	.06	.96
3	.13	4.08	.009**	T1-T3	90	T3: Relatedness satisfaction	TX / CO condition	-.09	-.93	.36
							T1: Relatedness satisfaction	.20	1.74	.085*
							T1: Relatedness frustration	-.20	-1.73	.088*
4	.29	11.38	.00**	T'	86	T2: Relatedness frustration	TX / CO condition	.16	1.71	.091*
							T1: Relatedness frustration	.27	2.83	.006***
							T1: Relatedness satisfaction	-.40	-4.15	.00***
5	.53	25.82	.00**	T"	72	T3: Relatedness frustration	TX / CO condition	.06	.66	.51
							T2: Relatedness frustration	.64	5.67	.00***
							T2: Relatedness satisfaction	-.11	-.98	.33
6	.31	13.09	.00**	T1-T3	90	T3: Relatedness frustration	TX / CO condition	.17	1.94	.055*
							T1: Relatedness frustration	.54	5.25	.00***
							T1: Relatedness satisfaction	-.02	-.18	.86

**p < 0.10; **p < 0.05; ***p < 0.01.*

Table 5: Linear regressions – classroom peers relatedness satisfaction, frustration and intervention predictors in T', T'', and T1-T3.

3.2 Qualitative analysis – RQ 2 and RQ 3

In this subsection we present the results of the theoretically approached thematic analysis (Braun & Clarke, 2006) rooted in the self-determination (Deci & Ryan, 1985, 2000, 2008) and need-to-belong (Baumeister & Leary, 1995) theories, applied to the semi-structured group interview held at the end of the intervention period with five students. We show first the findings associated to the second research question ('what worked and what did not work?') and then those connected to the third question ('how can the intervention be improved?') – that were used together to perform the formative evaluation (Plomp, 2007, p. 15). The analysis of the response to the second question produced six themes, of which the one positive was 'gets people to know each other', and the five negative were 'unnatural interactions', 'cant's stand sitting', 'too much time', 'started too late', and 'online is not the same'. Three themes were developed from the response to the third question, and these were 'fun and games', 'moving one's body', and 'start at the school start'.

Since the semi-summative evaluation had a *partial* mixed methods design, part of the qualitative findings had to be integrated with the quantitative ones in the interpretation phase (Leech & Onwuegbuzie 2009). I decided therefore to relocate the discussion of *all* qualitative findings (on the background of theory and research) in the discussion section, and to dedicate this subsection to their presentation.

3.2.1 RQ 2 – 'what worked?'

Gets people to know each other

This theme was the only one that represented the positive aspects of the intervention, but it encompassed most of them at once. It counted thirteen passages corresponding to about ten per cent (9.67%) of the transcript, and it referred to the role of PeopleUknow in supporting students getting to know each other, in facilitating conversations and deeper connections among them, and in creating bridges across otherwise isolated groups.

"I feel that, I think that it is very good that we get somebody encouraging you to get to know your classmates instead of just expecting you to get to know each other with time and by having to go

to class for three years. That you get an opportunity to get to know people … and not just like, superficially".

This excerpt sums up the most recurring topic of this theme which was the intervention supporting students in getting to know each other. In this and the other related passages, most of the students implied that in the three years period of high school all classmates ultimately get to know each other, but if this process is left on its own, it can take a long of time and it can end up with many possible relations remaining only superficial. Even if – as we will see in the negative aspects themes – the intervention had various limitations, the idea of a service entirely dedicated to stimulating and facilitating such interactions was generally considered in a positive way.

"P2[13]: It's a bit like that in the beginning, when we are set up with another one (Week Buddy), in a group of four. And then we were forced to just talk together.
P3: It's good to have a thing to get people to connect a bit.
P2: … that they don't just remain solitary, (that they) don't talk to anybody. One is forced out of one's comfort zone, and one takes a couple of steps in the dark".

In the quote above, the first student referred to having been assigned to a Week Buddy and to Group Buddies at the beginning of the intervention, and then, together with another student, they both agreed that it was a positive thing to have something that pushed you out of your comfort zone and created opportunities to connect with others. In the last two excerpts it emerged that some students not only were favorable to getting more easily acquainted with their classmates, but that they also valued deeper (more than just superficial) relationships.

In various parts of the interview, it appeared that getting more easily acquainted and deeper bonds might have been closely related. In the first of the following quotes, for example, a second-year student described how she felt when she first started high school and reflected on the importance that PeopleUknow might have had for her in that situation. They[14] implied that PeopleUknow was a useful tool for finding new friends, especially at the start of the school year

[13] When more than one interviewed student was mentioned in the same quote, they were referred as P1, P2, P3, P4, and P5.

[14] In this document the pronoun 'they' was used to refer to an individual student without disclosing their gender.

when one does not know anyone. A possible way to do so, they said, was precisely by starting conversations and finding common interests. In the second passage, we can glance at how such a process going from not knowing each other to a more meaningful relationship might start from a planned conversation about non-school related topics.

"But it was like that also in a class where I did not know a single person. I didn't know anyone when I first came. And there was a group of friends that were friends from before and (it was) very difficult to find new friends and such. So it (the intervention) would have been nice for starting a conversation, for getting started, for finding similar things people like to do".

"I think it is very fun to talk about other things and stuff, talk about what you did in the weekend. I think it is very nice to talk about other things than just school, then. It gets a little boring. Then you have like, a topic to talk about".

In the last quote, the student referred directly to the exchanges that happened during the 'did the same' exercise, and probably more in general to the non-school related content that was discussed in the 'say hi', 'know each other bingo', and maybe even in the 'keep contact' exercise. Such interactions that involved more personal conversations might have created the opportunity for finding out what one had in common with another person which in its turn could have contributed to initiating or solidifying a social bond.

Another appreciated feature of the intervention that was not expressed at the individual but at the group level was that PeopleUknow contributed to building connections among otherwise isolated groups.

"P5: "But … PeopleUknow creates relationships across the groups that are often formed. Like, when the class gets quickly divided in four groups, and with PeopleUknow you get some relations across groups. P1: I very much agree".

In this and other instances some of the students explicitly expressed that the intervention worked as a bridge among different groups in the classroom. Such groups were said to form quickly right after the school start during the first year – as in the quote above – or to be shaped in the second and third year as a consequence of the preparations to the high school graduation (*russefeiring*) and to university enrollment, that further strengthen group segregation.

"P4: We have now defined the russ *groups. […] And it (the class) got very divided. Outside the classroom I would say it is very divided. P1: It is very very divided outside classroom. Yes, we have a partially secure environment in the classroom, but outside class people don't almost talk to each other. […] And that's not all, but with this here (the intervention) I think it creates a much better connection between groups. And this is a time, especially in the second and end of the second class year, when people start to create groups for the* russ *(end of high school) celebration and start to think about future plans and think about what they want to study, […] and this makes people split even more. P4: Yes. P1: And I think that is why (the intervention) is a nice way to remember to keep in contact, and to give a sense of community and create bonds between groups. P4: Yes, I agree".*

3.2.2 RQ 2 – 'what did not work?'

Unnatural interactions

This theme concerned a set of aspects of the intervention that seemed not to work as that they elicited interactions that were described as awkward, unnatural, or forced. As all social exercises required the students to engage in dialog with some of their classmates, it is reasonable to expect that it felt sometimes imposed. The theme was coded eight times and spanned 6.62% of the transcript, which may signal something different than being a side-effect of inviting for interaction. Four out of five interviewees explicitly stated that in some circumstance they had experience with this sort of uncomfortable situations, and the impression is that all of them have shared this experience at some point.

"P1: Then in class we have somebody who is not as comfortable to talk to new people or that is shyer. There is no problem with it. But if you are forced to talk to somebody like this: "(imitates the teacher speaking) I am taking the time. Three minutes. Now you will look each other in the eyes and talk". And then you sit there and are like "(to another imaginary student and speaking slowly) What did you do four years ago?". P4: So yes, it can get a bit awkward at times".

"The reason why it (the conversation) does not flow naturally is often that it is difficult start a good dialogue because it can be felt as forced. (The reason is) that it is difficult for the conversation to make it feel like a natural dialogue if, as said before, one is just (told) (imitating the teacher) "Ok, you two talk together now".

In the quotes above the students argued that being explicitly told to talk together by the teacher could make the conversation feel forced and create awkward interactions. Probably referring to situations happened during one or more of the exercises ‘say hi’, ‘did the same’ and ‘get to know each other bingo’, the students showed a dissatisfaction with a relational aspect of how the activity unfolded. They implied here that they wished that the activity did not feel as forced and that it did not invite so directly to free dialogue.

Another source of awkwardness that might have partially been caused by some activity being too open or unstructured was the lack of conversational content. In multiple occasions, some of the students pointed out that after some time they were engaged in some exercise, they run out of things to talk about and suggested games as an alternative that would allow the interaction to keep on going.

“But if we take then the example of sport play … That is surely an activity that will continue no matter what, while a conversation can die out, and then suddenly you have three more minutes to talk. Games are activities that will keep on going, compared to a conversation that can die out as there is nothing left to talk about”.

Part of the unnaturalness of some situations was due the fact that the duration of the exercises was often set externally by the teacher. In more normal interactions, conversation is left to die out and end there without the awkwardness that can come from prolonging it further and unnaturally.

Finally, another source of unnatural interactions came from the casual and sometimes unfortunate combination of individuals in the arrangement of the Week and Groups Buddies. In multiple parts of the interview, most of the students explicitly stated that the positive or negative outcome of the activities was strongly dependent on the specific person(s) with whom one was set to collaborate. If one was assigned to a friend, the interactions run very smoothly, while if one ended up with a person unwilling to collaborate, the situation could get uncomfortable for both.

“On one side, there is one persona that really wants (to collaborate) and on the other side there is another who really does not want… then both get very uncomfortable in that situation. So, in many situations there can be… it really depends who you are put together with […]”.

Can't stand sitting

This theme is about an aspect of the intervention that hindered its implementation and therefore the achievement of its intended goal of creating a more positive and socially secure classroom environment. In nine different places of the interview, covering about eleven percent (11.05%) of the transcript, all the students expressed dissatisfaction with the sedentary quality of the social exercises and pointed out a few problems connected with it.

"Just sitting and talking is almost the only thing we are doing in most activities".

"Also, we are sitting on our desk all the time, for eight hours, so it is very boring".

While everybody agreed that the intervention – and school in general – involved too much sitting, some further argued that it caused disattention and disengagement of various kinds.

"P3: About what you said, it is mostly that of having more active (exercises) … it is mostly that. Because when one sits still, it is very easy to lose one's attention and then one ends up doing something else. And so, this has a lot to do with PeopleUknow, when one does not find it interesting at all, and then just … I rather want to draw on paper, or … P2: (continues) lose oneself in one's own thoughts".

"(Unclear beginning of sentence) … and people … more exercises where one should be physically active rather than sitting still, because then it can be just, that people do not speak at all".

Too much sitting is described as inducing loss of focus, loss of interest in the exercises and even as a partial cause to why some people in an activity end up not talking at all. The general impression was that students' motivation and ability to benefit from the intervention was hindered by them being too physically disengaged.

Too much time

This theme referred to the feeling that the exercises used up more time than desired and the related negative consequences such as lowered engagement, the perception of exercises as chores, and that they took away time from lectures and from preparation to tests. The theme was coded eight times and covered about nine percent (8.62%) of the transcript, and the impression

was that the agreement was strong among most of the interviewed students. That is partly indicated by non-verbal cues like the tone of voice, which are not accessible to the reader from the cited transcripts, and more manifestly by the use of emphatic language, like in the following passage.

"The thing is mostly that … it is also in a way a problem that it happens so often. It is very often, really a lot. And since it happens so often and so much, then people are not engaged in it at all. […] We are encouraged to be engaged and such, but it is very very difficult to feel engaged when it happens so often and so much".

In this instance – which is the most extreme of those associated to the theme – the feeling of dissatisfaction with the frequency and the extension of the exercises was particularly evident. The student also pointed out that these aspects caused people to lose interest in the intervention, which appeared to be an important issue throughout the interview.

"P3: One is in a sense really bombarded by PeopleUknow so much that is it difficult to take the most of it seriously, when it is like that… And yes, one has 'keep contact' to do, and has 'get to know each other bingo' on Wednesday or… P2: It starts to feel like homework. P3: Yes, almost. One does not see at it as a… P2: (completes) Activity. P3: An activity. Or like, (engaged voice) "Oh yes! I can get to know my week buddy", more like (with low pitch, disengaged voice) "Oh. I got a new week buddy. Ok, then I'll do those things or whatever".

The impact of the intervention in terms of time was described in a way such that it was difficult for them to take the activities seriously which were therefore experienced as chores, like homework. Instead of looking forward to getting acquainted with the new assigned partner, some said they felt like they just wanted to get done with the exercises. In addition to low engagement, the other most important problematic consequence of too much PeopleUknow was that it took away a considerable amount of time from lectures.

"P5: We haven't talked so much about it, but I have heard some comments that there has been a lot of PeopleUknow. Because it took up such big parts of the lecture. There has been a lot of sitting still and talking about whether one has a cat or similar things when we had a test on Friday, if you know what I mean. P3: Yes, something like that. And then there's also the thing

that it often takes time away from natural science lectures. So in a way it feels like we get very little done, often. […] P2: Not very much learning in natural science. P3: Yes … That's like … It's a point that was brought up some time ago, but it's like "Oh yes, we are doing 'get to know each other bingo', but we have a test on Friday we have to practice on". […] P2: I actually liked natural science before PeopleUknow. Since it swallowed up the whole science class, we stopped learning that much".

In multiple instances during the interview, the students agreed that the intervention took away too much time from lectures, and more specifically from natural science. Other than the exercises themselves, they said, what often took too much of time was to shift from the activities to normal lectures. The biggest concern was that it took away from preparation to the tests, which intuitively caused them to feel more stressed – a feeling in conflict with the intervention goals. Another problem some of them mentioned, was that less lecture time meant also less learning. One student said that the intervention not only limited their learning, but that it even caused them to lose interest in a subject.

Started too late

This theme referred to the shared feeling that the intervention started too late, with some related implications. The theme was comprised of eight passages which covered only about four percent (4.36%) of the transcript, but the impact of this aspect was considerable and was clearly communicated.

"(If) you start it (the intervention) after one year has passed, then the relations have stiffened a good deal. But then I think that it would have been appropriate for us to start at the very beginning".

"RES[15]: It makes more sense to begin in first class than in second class. P1: (completes) … then to begin in second class. Because it becomes so unnatural because then people have already put up a façade and people know each other much better and such. If you start soon when people do not have time to be like "I am that person. Or, I am here, and you are there"."

"I feel that if we had done this (intervention) the first day, then it would have been a bit general,

[15] 'RES' referred to the researcher who also was the interviewer.

but then people would have had a desire to have a good classroom climate. So that there is a bit more will than just "Here I have my group of friends. Everything is ok. I don't bother and I don't care to do this (exercise) properly"."

In these and other passages, the students clearly implied that the intervention started too late than they wished, and pointed out a few complications connected to that. The main problem, they explained, had to do with the fact that the time when most of the relations are established is the beginning of the first school year. In that period nobody already knows each other, and that is when most classmates form bonds and friendships.

From the second and third quote above and other passages we can infer some consequences of this 'stiffening' process. When classmates have got to know each other well, they tend to form groups and organize around them. This causes a good deal of segregation as people identify with their associated group, put up a façade to maintain this order, and show a lack of engagement in the exercises. Starting the activities after these few initial months when bonds have solidified and people have lost interest in creating new ones, felt therefore unnatural and inconvenient.

Online is not the same

This last theme referred to the perceptions of the intervention during the digital learning interval T', when physical interactions at school were completely prohibited and had to happen digitally instead. Counting only four instances with a two percent coverage (2.20%), this theme was for the most part implicit in the interview and it was made explicit only sparsely. The relevance of this theme was partly made clear by exclusion, in the sense that throughout the whole interview the students referred to the intervention only as what happened during the second interval (T'') with physical learning, and they always used some additional qualifier to address the program during lockdown. In the few times they explicitly discussed the intervention during this period, they always did so in a resolutely negative way.

"P1: Yes, it ('hold contact' exercise) didn't work. At least not online under lockdown … I think it's very difficult because you don't have the other person you have to face. P4: It would have gone fine if one had talked on the pc as one talks on Zoom, but we didn't manage to do that. And there was nobody who bothered setting up a meeting either, that wanted to talk and such, and send a message. There was nobody who bothered".

In this passage, the first student started referring to the 'hold contact' exercise under lockdown and stated that not physically facing the other person made interactions more difficult. The other student argued that the exercise could have worked digitally if they managed to set up a video call like they were doing during this group interview and if they were enough motivated to interact with each other.

In this and the other fragments, the students agreed on the ineffectiveness of the intervention online. They explained that this may have been caused by the lower quality of the digital compared to the physical interactions, and by a general lack of engagement and motivation in taking part to the activities digitally.

3.2.3 RQ 3 – 'how can the intervention be improved?'

Fun and games

This theme concerned the main of three bulks of suggestions by the students on how the intervention could be improved. It generally referred to fun and games as means to get to know each other better, to ensure a flow in the activities, to take away the pressure from getting to know each other and shifting the focus towards having fun, and to achieve more engagement and participation. This theme counted nineteen different passages with a fifteen percent (15.02%) coverage.

"P2: Games were very effective. […] Those times we played (names a game but audio is unclear) it was a lot of fun in big groups. P3: Yes, exactly. Having more game-like activities. People gets in a way … since there is something fun to do, then one gets often more engaged in it. And often then, just by sticking together one becomes better known (with others) than one would (otherwise) be".

"If the point is 'getting to know each other' then it's more difficult to get to know each other compared to if it's just 'having fun together'. Because when one has fun together then one naturally gets more known and more comfortable with each other".

These two quotes introduce the most recurrent function of having fun and having game-like activities, which is getting to know each other. In the first passage we can see the topics of games

and fun and their relative importance emerging for the first time in the interview. The student argued that playful activities make people more engaged, which create the conditions for becoming better known with others. In the second quote the same student reiterated their position, stating that if the goal is to get to know each other, then it would be more effective to focus on having fun together, because it more naturally leads to knowing each other and feeling more comfortable with them.

In these and multiple other passages the main point was clear. The students meant that playing games and having fun together is a better approach to getting to know each other, and that they do so with additional benefits. Other than the already mentioned increase in engagement, another advantage of fun and games, they said, was that they take away the pressure from getting to know each other and shift the focus on having fun instead.

"P2: If the goal is to have fun, then the people that would normally have withdrawn if (the focus) had been to getting known instead … because they want to have fun. Because they don't like the sound of 'getting to know each other'. It is scary. P3: It takes away the pressure. P2: It takes away the pressure. In leisure activities, everyone is like "we are all here to have fun", then one wouldn't really talk seriously all the time".

In this and other passages the students argued that a too much focus on getting to know each other created an undesired pressure and a too serious atmosphere, and the sound of 'getting to know each other' was even described as scary. The student above also stated that focusing on having fun would bring those that would otherwise have withdrawn from the activities, to join them instead. So, shifting the focus from knowing each other to having fun would not only remove the counterproductive pressures and seriousness feelings, but it would further motivate students to participate to the activities for the enjoyment they give.

Another positive aspect of games, the interviewees said, was that they are activities that keep on going.

"But if we take then the example of sport play … That is surely an activity that will continue no matter what, while a conversation can die out, and then suddenly you have three more minutes to talk. Games are activities that will keep on going, compared to a conversation that can die out as

there is nothing left to talk about".

Differently from a conversation that can die out as the people involved run out of things to say, a game continues no matter what and so the feelings of unnaturalness and awkwardness – discussed above – are more easily avoided. The problem of being invited to an unstructured dialogue – also discussed above – may also be resolved by a game-like activity.

Moving one's body

This theme refers to another separate set of suggestions that concern the importance of moving one's own body. All students agreed that getting physically activated in the exercises would improve the intervention, and argued that it could avoid a series of negative issues like losing focus and getting distracted, and promote various positive reactions such as increasing engagement and being energized. 'Let's move our bodies' counted eleven references covering about eleven percent (11.39%) of the transcript.

"P1: So I think that, at least in our class, it would have helped a lot more, as mentioned, of what we said about moving one's body. Not like sprinting, because nobody bothers to be honest. But like, activities where you can move and don't need to write down so much. Or … P4: Also, we sit on our desk all the time, for eight hours, so it is very boring. And if there is some physical movement then people will gladly do that".

In the passage above and in other instances, the students expressed dissatisfaction with the lack of bodily motion[16], as they sit still for many hours during a school day. They saw in PeopleUknow an opportunity to break from the standard, monotonous format of being in class and said that people have a need to move their bodies and if they were given the opportunity they would gladly do so.

As we previously discussed in the 'can't stand sitting' theme, too much sitting was described as causing disinterest and loss of focus that led students to feeling distracted. Moving one's body, on the opposite, was said to have an engaging effect. In the quotes below we can see how physical

[16] The Norwegian '*fysisk aktivitet*' and '*bevegelse*' were translated as 'moving one's body' (or 'bodily motion') instead of 'physical activity' because the latter had closer associations with more intense forms of activity than the one meant by the students in this group interview.

activity integrated in a game was associated with engagement, activation and fun, and then how it was described as having the ability to energize the students.

"P1: Yes, games like Twister for example are better than a game where you just must sit still and take and move a piece. P2: Because then one is active. P1: Yes, one is active, one is moving, one has fun. P2: One is very engaged".

"In activities that are in the last school hour, where many are very tired and such, that (of being physically active) can get them to be very full of energy".

Start at the school start

This theme concerned a series of suggestions in favor of starting with PeopleUknow at the very beginning of the first year of school. Counting nine references that covered about five percent (5.29%) of the transcript, the importance of this potential improvement was endorsed by all students and was well articulated. The interviewees agreed on that the first months of school, especially of the first year when nobody knows each other, are the best period to start the intervention. As discussed in the 'started too late' theme, in this window of time classmates naturally enter in contact with each other, and relations are rapidly created both between single individuals and within different groups. The result is that these social relationships quickly solidify, and further interactions become more difficult. Students lose interest in establishing new social bonds, and people that at this point have not yet managed to become friends with anybody, struggle with being included.

The passages below give different examples of how this struggle for inclusion can take place in these crucial first months, and most notably, they all contain descriptions of how the intervention would have helped the students in those situations.

"But it was like that also in a class where I did not know a single person. I didn't know anybody when I came in. And there was a group of friends that were friends from before and (it was) very difficult to find new friends and such. So, it (the intervention) would have been nice for starting conversations, for getting started, for finding similar things people like to do".

"P1: I just wanted to say that I very much agree and, for example, two weeks after my class had started … because I went to another study specialization first, I went to drama studies before I

changed … As they say, that in my class they managed to get to know each other in two weeks before I came in. At that point there was no basis for getting to know people. I got to know P4 through other relations, but if I didn't have anybody, then where would I have started? Because it is a bit scary getting into a class two weeks after everyone else has got to know each other, and then having to try getting to know people, everybody at once. P4: Yes, it would have been nice to have had PeopleUknow. P1: Yes, for having a reason to start a conversation".

"P2: I actually think it is a very good time for having it (the intervention), because …
P5: I agree with that. In the first half-year there is … P1: A lot that happens.
P2: If there are no people who are very good at introducing others, or good at just start talking because they have nobody else they can do that (together with)".

We can see from the quotes that the reasons for struggling with inclusion can be different, and not necessarily linked to a lack of social disposition. In the first passage the problem was caused by changing study direction and coming into a new class two weeks after all other classmates. In the second passage the difficulty with inclusion had simply to do with the fact that in the initial class there was already a group of people that were friends before the start of the school year. And in the third reference it was hypothetically related to a lack of people who are good at introducing each other and at initiating conversations.

These and other particularly challenging situations appeared not to be caused by a lack of social skills or other deficiencies of the students, but seem rather to be a characteristic feature of the social processes that unfold in the first months of school. For this reason, the students argue that PeopleUknow should start from the beginning of the first year, so that it could ease this process by offering more opportunities to introduce people, by facilitating conversations, and by creating the conditions for getting to know each other.

"P1: I think especially for those who start in the first class, who start in a completely new school with completely new people, so it often takes many months before you get to know people, like properly. You don't need for example to have PeopleUknow for three years, because you manage to get to know people in three years. But maybe (it should) at least (be) mandatory the first half-year in the first (class)".

4. Discussion and results

In this section we present first a summary of the main quantitative and qualitative findings relative to the pilot PeopleUknow intervention. We then do a mixed methods semi-summative evaluation of the program, and conclude with its formative evaluation (Plomp, 2007, p. 15; McKenney & Reeves, 2018, p. 166).

4.1 Summary of main findings

4.1.1 Quantitative findings – RQ 1

The first research question – 'to which extent did the intervention work?' – was approached in a quantitative way. The analysis was based on a three-round (pre- (T1), mid- (T2), and post- (T3) test) survey that was administered to a treatment ($N = 60$) and a control condition ($N = 98$), selected via a quasi-experimental cluster sampling technique. The survey covered an eight-week period (excluding winter vacations) and contained an adapted version of the BPNSF scale (Chen et al., 2015; Schultz et al., 2014; van der Kaap-Deeder et al., 2015) that measured the students' relatedness satisfaction and frustration towards their classroom peers. The hypotheses for testing the intervention effectiveness were that the treatment condition should show an increase in relatedness satisfaction and a decrease in relatedness frustration – compared with the control group. The statistical tests utilized for these assessments were dependent and independent T-tests, bivariate correlations, and linear regressions. For all these tests[17] a more generous threshold of statistical significance of $p = 0.10$ – recommended by Lee et al. (2014) for pilot studies – was utilized.

Because of the remarkably different settings in which the intervention ended up taking place, I decided to separate the findings from the first 'digital learning' interval (T')[18] from the second

[17] In the bivariate correlations the statistical significance threshold at $p = 0.10$ could not be applied for technical reasons. Only the thresholds made automatically available by SPSS of $p = 0.05$ and $p = 0.01$ were used instead.

[18] The implementation of all the activities planned by PeopleUknow were considerably impacted by the change of setting, except for the 'stay in touch' exercise that was supposed to happen remotely anyway.

interval characterized by a return to more normal conditions (T'')[19]. For the same reason, I chose to exclude the results referring to the wider T1 → T3 period as the intervention was applied in two very distinct ways, and in a pragmatic sense it would have meant assessing two different programs in the same interval[20].

Even if the program was to a good extent designed to enhance relatedness in accordance with principles of self-determination theory (Deci & Ryan, 1985, 2000, 2008), the findings from the digital learning period T' indicate that the intervention increased the students' relatedness frustration toward their classroom peers, while in the more normal interval T'' it mostly had a neutral effect, presenting an minor positive effect on relatedness satisfaction and a minor negative one on relatedness frustration (it increased frustration).

We proceed by presenting a summary of the main quantitative findings on the intervention effectiveness first in T' and then in T''.

Summary of intervention effectiveness in the digital learning interval T'

In the digital learning interval, each significant outcome was not only against the hypotheses, but it always pointed in the opposite direction. In the dependent T-tests, the control group showed a sig. increase in relatedness satisfaction and a sig. decrease in frustration where no such changes occurred in the intervention condition. The bivariate correlations showed that relatedness frustration was also more unstable for the control group. The independent T-tests presented on the same line a sig. higher frustration in T2 for the intervention group. Finally, linear regressions showed that participating in the intervention had a sig. negative – contrary to the second hypothesis – impact on frustration. These results indicate that in this interval, the intervention had a partially neutral and only slightly significant negative influence on relatedness satisfaction, and an evident significant negative effect on class peer relatedness frustration (it increased

[19] In T'' the students went back to school but their interactions were still limited by a '1-meter' social distancing rule and some other minor restrictions.

[20] According to Dewey's pragmatist epistemology – utilized in this thesis – warranted assertions are developed by executing similar actions in similar situations (Morgan, 2017). The implementation of the PeopleUknow program in the digital (T') and more normal (T'') setting was in this sense a different action in different situations, and their evaluation should therefore be done separately.

frustration).

Summary of intervention effectiveness in the physical learning interval T''

The second interval involved for the most part the normal physical interactions for which the intervention was designed and showed considerably different outcomes. In this period, many results were still against the hypotheses, but most of them were just neutral, only two pointing in the opposite direction, and one in their favor. The one result supporting the hypotheses consisted of a statistically significant increase in relatedness satisfaction in the intervention group showed by the dependent T-tests – when no such variation occurred in the control condition. On the other hand, the two outcomes opposing the hypotheses presented a relatively less unstable (more stable) relatedness satisfaction in the intervention group in the bivariate correlations; and a significant higher relatedness frustration in T3 in the intervention condition, showed by the independent T-tests. Considered together, these results indicate that the intervention was mostly neutral and had only a minor, suggestive significant effect both in the desired and in the opposite direction.

4.1.2 Qualitative findings – RQ 2 and RQ 3

The second and third research questions were answered in a qualitative way based on a thematic analysis (Braun & Clarke, 2006) rooted in the self-determination (Deci & Ryan, 1985, 2000, 2008) and need-to-belong theory (Baumeister & Leary, 1995) of a semi-structured group interview held at the end of the intervention with a convenience sample of five students who had participated to the program.

The thematic analysis of the answers to the second question ('what worked and what did not work?') produced six themes, of which the one positive 'gets people to know each other', and the five negative 'unnatural interactions', 'can't stand sitting', 'too much time', 'started too late', and 'online is not the same'. Three themes were generated from the material related to the third question ('how can the intervention be improved?'), which were 'fun and games', 'moving one's body', and 'start at the school start'.

Some of the themes from the second question are presented in combination with some from the third as their content was closely connected (for example 'started too late' and 'starting at the

school start'). And as in the interview the students mostly referred to the intervention during the period of physical learning (T''), most of the themes concerned that interval – with the exception of 'online is not the same'.

We proceed with a summary of the main qualitative findings.

'Gets people to know each other'

The one positive theme of 'gets people to know each other' is the only one representing the positive aspects of the intervention. The interviewees showed agreement on the fact that PeopleUknow helped students to get to know each other, facilitated conversations, and created opportunities for finding common interests and for connecting with others. Moreover, the intervention was said to have established social relations between otherwise isolated groups and that it therefore worked as a bridge among them.

'Unnatural interactions'

The negative theme 'unnatural interactions' grouped together feedback about various uncomfortable interactions caused by the intervention, which were described as unnatural, awkward, or forced. One main reason for such unwanted feelings was that the conversations engaged during the activities were often externally defined by the teacher. Conversational features like the reason why people start talking to each other in the first place, the topic of focus and duration, are normally spontaneously regulated by the speakers. But because in the intervention these were externally prescribed, some dialogues felt imposed and had to be prolonged over their natural limit, causing feelings of awkwardness, partly due to a lack of conversational content. Sometimes the discomfort derived from the casual association with individuals that were unwilling to collaborate. As a solution to some of these – and other – problems, the students suggested including in the activities fun and games.

'Fun and games'

In the 'fun and games' theme, the interviewees agreed on that having fun and playing games naturally lead to getting to know each other, with a series of additional advantages. A good game, they said, regulates the interaction so that it always keeps on going, and the silence between people is more easily avoided, together with the relative awkwardness. The students also stated that having fun is a good motivator and that it would therefore increase engagement and

participation. Moreover, it would take away the pressure from the overly serious goal of getting people to know each other, and it would shift the focus on the more appealing 'having fun'.

'Can't stand sitting' and 'Moving one's body'

The theme 'can't stand sitting' expressed the difficulty that all students shared in keep sitting still during the intervention activities, as they already sit throughout the whole school day. They argued that too much sitting hindered their ability to concentrate and led them to distract themselves, feel disengaged, and lose interest in the activities. As a natural solution to this problem, they suggested including more bodily motion ('moving one's body' theme) that would engage and energize them more, and would hinder distraction and loss focus.

'Too much time'

The theme 'too much' referred to the shared feeling that the intervention used up more time than desired and to the associated negative consequences of lower engagement, perception of the exercises as chores, and that they took away time from lectures and preparation to tests.

'Started too late' and 'start at the school start'

In 'started too late' the students argued that the PeopleUknow intervention started too long after most of the social relations were established. Therefore, by the time the intervention had started, people had lost interest in making new acquaintances and forming new bonds. They explained that especially in the very beginning of the firs school year, people quickly get to know each other and divide themselves in pairs and groups of friends. And once these relations have solidified, those that did not manage to create any of these social bonds struggle with being included. To avoid all these problems, the students suggested that the program should start at beginning of the first school year ('start at the school start' theme) which would put PeopleUknow in a better position to introduce students to each other, to facilitate conversations – as they would still be open to forming new bonds – and, in general, to get classmates to know each other better.

'Online is not the same'

In the last negative usability theme 'online is not the same', the interviewees agreed on that the intervention was generally ineffective when held digitally during the lockdown period (T'). They explained that this may have been partially caused by the inferior quality of the digital

interactions, and to a general lack of engagement and motivation in taking part to the activities online.

4.2 Discussion of the findings

In this subsection, we do first a mixed methods semi-summative evaluation of the PeopleUknow intervention based on empirically supported theory, pre-existing research, and on literature presented in the introduction. We conclude with a formative evaluation on the background of theory and previous research.

4.2.1 Mixed methods semi-summative evaluation – RQ 1 and RQ 2

The semi-summative evaluation of the program assessed to which extent it managed to enhance students' relatedness towards their classroom peers (McKenney & Reeves, 2018, p. 166). The evaluation presented a quantitative dominant complementary mixed methods design. According to this approach, the quantitative findings related to the first research questions were given more weight and that the qualitative findings of the second question were used to complement them (Leech & Onwuegbuzie, 2009; Greene et al., 1989; Johnson & Onwuegbuzie, 2004).

As the change of setting for the implementation of PeopleUknow caused a division in both the quantitative and the qualitative findings, I also separated the mixed methods evaluation in the digital learning interval T', and in the more normal interval T''.

Mixed methods semi-summative evaluation in the digital learning interval T'

The quantitative results of this period generally indicated that the intervention had a mostly neutral and only slightly negative influence on classroom peer relatedness satisfaction, and a clear negative effect on relatedness frustration (it increased frustration). These results were against the hypotheses and pointed in the opposite direction. They deserve attention, as the active frustration of relatedness is more associated with psychological malfunctioning than the absence of its satisfaction (Vansteenkiste & Ryan, 2013). In this interval, the PeopleUknow intervention was deeply affected by the imposed lockdown of society, which dramatically changed the setting in which the program was implemented. As the 'online is not the same' theme testified, the intervention online was therefore perceived in a negative way. As possible explanations, the

students proposed the lower quality of digital interactions and the disengagement that came from participating in the activities digitally, which may have contributed to increasing relatedness frustration. As other research also indicates (e.g. Butz & Stupnisky, 2016), digital learning is likely to reduce students' relatedness, and in this case, it may have negatively affected the impact of the intervention as well, perhaps exacerbating its negative effects.

Contrary to the evidence above, the control group showed perhaps the most surprising result of the whole analysis, presenting both a significant increase in relatedness satisfaction and a sig. decrease in frustration during the lockdown period – compared with the intervention group. A possible explanation for this unexpected improvement is that in some cases the perception of the impact of COVID-19 has been found to be associated with increased social support and reduced loneliness (Tull, et al., 2020), which may have affected the students' relatedness in a positive way. But this would still not explain why this positive reaction was visible in the control and not in the intervention condition.

Summary for digital learning interval T'

The mixed methods semi-summative evaluation indicated that the intervention clearly increased the students' relatedness frustration. This may be partially explained by the digital context causing inferior quality interactions and a general disengagement in participating in the online activities.

The too different context in which the intervention ended up being implemented did not allow us to properly evaluate the program's functioning. What ended up being assessed instead, was the effect of the intervention while mediated by the unexpected imposition of digital learning. Nonetheless, since the results were so detrimental to relatedness frustration, they are still worth considering, as future iterations of the PeopleUknow and analogous interventions may encounter similar situations.

Mixed methods semi-summative evaluation in the physical learning interval T''

The second period T'' was characterized by more normal physical interactions[21], and the

[21] In T'' the students went back to school, but a '1-meter' social distancing rule and some other minor restrictions were still in force.

quantitative analyses indicated that the intervention had for the most part a neutral effect, and had a minor, suggestive significant effect both in the desired and in the opposite direction, meaning that the hypotheses were generally not confirmed. The qualitative findings from the second research question also showed some positive and some negative feedback. We proceed first by evaluating how the relevant qualitative findings complemented the quantitative based on empirically supported theory, and we conclude with a discussion on the background of the presented literature and other research.

Based on empirically supported theory

Considering the definition of belongingness from need-to-belong theory (Baumeister & Leary, 1995) it is possible to argue that some aspects of the 'gets people to know each other' theme may have been partly responsible for the observed quantitative positive effect. The theme described the support of the intervention in helping students getting to know each other, in facilitating conversations and deeper connections, and in creating bridges among otherwise isolated groups. Given that belongingness depends on frequent and affectively pleasant interaction with a few other people which involve temporally stable and enduring affective concern for each other's well-being (Baumeister & Leary, 1995), we can deduce that all the above-mentioned aspects could support belongingness to some degree, except for 'creating bridges among isolated groups'. Getting to know each other and having more conversations and deeper connections seem in fact all compatible with having more frequent and affectively pleasant interactions.

A similar discussion applies to the negative quantitative effects of the same period. As belongingness can decrease due to affectively unpleasant or conflictual interactions (Baumeister & Leary, 1995) all qualitative aspects that may have more or less directly caused these negative exchanges, may also explain the observed higher frustration in the intervention group.

These affectively unpleasant interactions may have been caused by the unnatural, forced, or awkward exchanges described by the interviewees. Other aspects that may have more indirectly contributed to such negative interactions could be the loss of concentration and engagement derived from the protracted sitting, the loss of commitment to the social activities due to the perception of the intervention taking up too much time, the stress from the feeling of it taking away time from lectures and test preparation, and the perception of the exercises as chores. All these aspects are in various degrees compatible with the definition above and may have

contributed to the observed higher frustration.

Summary for the physical learning interval T''

The mixed methods semi-summative evaluation concluded that the intervention had only a small positive effect on relatedness satisfaction, and a likewise small negative effect on relatedness frustration and that the positive impact may be partially explained by the role of the activities in helping students to get to know each other, and in facilitating conversations and deeper connections. The negative effects, on the other side, may have been produced by unnatural, forced, and awkward interactions, by the disengagement caused by prolonged sitting, by the activities lasting too long and feeling like chores, and by the stress caused by the intervention taking away time from lectures and test preparation.

Discussion on the background on presented literature and other research

Compared with the results of the other relatedness-enhancing interventions presented in the introduction, the findings of the PeopleUknow program were more in discordance than in accordance with them. While most of the introduced interventions showed a mixture of neutral and positive outcomes (e.g. Van Ryzin & Roseth, 2018; Mikami et al., 2005; DeRosier, 2004), only one of them contained both positive and negative results (i.e. García Bacete et al., 2019).

To try to understand how diverging results occurred, I looked at what the other interventions had in common which was absent in PeopleUknow.

Positive interdependence

One such aspect was the establishment of positive interdependence. Positive interdependence is realized in an activity "when goals are structured such that individuals can attain their goals if (and only if) others in their group also reach their goals" (Van Ryzin & Roseth, 2018, p. 1193). Both the intervention analyzed in Mikami et al. (2005) and that in Van Ryzin and Roseth (2018) involved cooperative learning activities that created interdependence within groups. Moreover, in Mikami et al. (2005) these activities were combined with non-academic collaborative games, that also required group members to work as a team to achieve common goals. According to research, under conditions of interdependence the type of peer interaction shifts from indifference or competition to mutual assistance, emotional support, and sharing of resources (Deutsch, 1949, 1962). In turn, this increases interpersonal acceptance, supports the development of new

friendships, and reduces social isolation (Johson et al., 2014; Mikami et al., 2005). The PeopleUknow program included activities involving collaboration, but none of them were centered around interdependence and could therefore not reap its benefits. This could partially explain why the present study did not produce as positive results as the other two mentioned above.

Unregulated combinations of students

Another aspect had to do with the rationale behind the formation of groups involved in the activities. In their intervention, Mikami et al. (2005) gave the teachers instructions to combine children with different social status, ethnicity, and academic ability, and to avoid putting best friends or bitter enemies together. In the PeopleUknow intervention, the social configurations (Week Buddies and Group Buddies) were automatically generated by the digital application and the PeopleUknow teacher did not receive any instruction on how to form groups. Even if she ended up making a few manual adjustments to put and avoid putting specific students together, the differences between these two grouping approaches may still partially explain the observed differences in outcomes.

Absence of games

Another aspect that distinguished other interventions from PeopleUknow was their adoption of games as a central tool for enhancing relatedness. Even if among the PeopleUknow activities, 'get to know each other bingo' presented game-like elements, the program as a whole cannot be said to have heavily relied on the use of games. As part of psychological skills programs, games have been shown to help adolescents to become more sensitive to others' needs, to learn to handle dominance and exclusion, and to learn to express their emotions – which enhance peer relatedness (Henley et al., 2007). Not benefiting from the use of relatedness-enhancing games may, therefore, partially explain the different results of the present study compared to those of Mikami et al. (2005) and McMahon and Hanrahan (2020).

4.2.2 Formative evaluation – RQ 2 and RQ 3

The formative evaluation of the PeopleUknow program was aimed at improving and refining the intervention (Plomp, 2007, p. 15) and was based on the answers provided in the group interview to the second ('what worked and what did not work?') and third research question ('how can the

intervention be improved?') which were analyzed with a theoretically approached thematic analysis.

We proceed with a discussion of the qualitative findings on the background of theory and previous research, and in line with the DBR approach (Plomp, 2007, p. 15), We also provide recommendations for improving of the intervention.

Getting to know each other through conversations

Based on pre-existing research, there is evidence supporting that getting to know each other through conversation promotes relatedness. Self-disclosure[22] during get-acquainted conversations has been shown to increase social attraction towards the conversational partner (Vittengl & Holt, 2000), and exchanging particular viewpoints has been proven to induce social unity and shared identity (Jans et al., 2011; Postmes et al., 2005). Substantial data and a number of theories support the importance of self-disclosure in forming and maintaining social relationships (Derlega et al., 1993). These results are in accordance with the interviewees' descriptions that the PeopleUknow intervention helped students to get to know each other by facilitating conversations, and future iterations of the program should consider emphasizing this feature even more.

Fun and games enhance relatedness

As we saw in the semi-summative evaluation, previous research has found that, under the right conditions, games can enhance relatedness (Henley et al., 2007; Mikami et al., 2005; McMahon & Hanrahan, 2020). This empirical evidence supports the students' convictions presented in the 'fun and games' theme that games lower the threshold to get to know each other. Fun is also described in research as an essential element in games and as something that promotes engagement and attention (Kapp, 2012, pp. 6-12). Moreover, in one of the relatedness-enhancing interventions (McMahon & Hanrahan, 2020), one of the main declared goals of the use of games was exactly that of being fun. Considering previous research and the results from the thematic analysis, future iterations of the PeopleUknow program should evaluate including more game-

[22] Self-disclosure refers to communication behavior through which the speakers consciously make themselves known to other people (Pearce & Sharp, 1973).

like and fun activities.

Creating games that are both fun to play and instructive is not an easy task. Transforming activities into games is more than just attaching badges, points, and rewards. Their development requires a great deal of design and up-front work to determine which game elements and rewards fit the instructional material, the user group, and the context of use. Moreover, games are not fit for every learning situation, and in many circumstances, gamification simply does not work (Kapp, pp. 12-15). Therefore, modification and additions to the current set-up should be therefore considered carefully by PeopleUknow.

A more immediate way in which fun and games could be integrated could be re-using (or taking inspiration from) evidence-supported games – like those in Mikami et al. (2005) and McMahon and Hanrahan (2020). Another alternative could be gradually developing PeopleUknow them through a design-based research approach (Anderson & Shattuck, 2012; McKenney & Reeves, 2018) for which this DBR inspired study could be used as the first – need finding (Patnaik & Becker, 1999) – partial iteration.

Positive interdependence

Another feature that could improve future versions of PeopleUknow, could be positive interdependence. As seen above, both interventions studied in Mikami et al. (2005) and Van Ryzin and Roseth (2018) presented activities structured so that the students could achieve their goals only if the other group members also reached their goals. If properly utilized, positive interdependence should promote relatedness, but this feature may not always be necessary. Among the activities that showed to be effective from both Mikami et al. (2005) and McMahon and Hanrahan (2020), some were not designed for positive interdependence.

Moving one's body increases engagement and attention

An aspect that clearly emerged from both the second and the third research questions was the importance of bodily motion. Various games described in McMahon and Hanrahan (2020) required the students to move their bodies, and exercises that involve being physically activated have also been linked to higher engagement and attention (Kubesch et al., 2009; Howie et al., 2014), also when combined with cognitive engagement (Schmidt et al., 2016). Research supports the interviewees' convictions that too much sitting causes disengagement and that moving one's

body activates and engages students. For these reasons, future versions of the PeopleUknow exercises should consider including bodily motion.

The importance of starting at the school start

Two themes were generated on the importance for the PeopleUknow to start at the school start, and ideally, at the very beginning of the first year of school. During adolescence students rely more on friendships and non-kin relationships for support and guidance (Cauce, 1986; Epstein & Karweit, 2014; Nichols, 2008) and as a consequences of the transition from primary to seconday school they experience a disruption of the old secure peer network, and a transformation of friendhsip networks and social hierarchies (Vaz et al., 2014). As the 'started too late' and 'start at the school start' themes testified, it is especially in this delicate phase that students need to adjust to new peers and that socially inclusive interventions can have the most impact. For this reason, future iterations of PeopleUknow should evaluate starting from the beginning of the very first year of high school.

Too much time?

The students' convictions, expressed in the 'too much time' theme were not supported by any relatedness-enhancing intervention articles explored so far. While the other programs involved activities with a similar if not higher duration and frequency, and with a similar or always higher intervention duration, this was never portrayed as a problem. The only exception was Mikami et al. (2005), as the authors deliberately addressed the problematic issue of session duration and decided to limit it to 45 minutes – which corresponded to maximum any PeopleUknow activity lasted. Since this concern did not appear in any of the other articles, it is possible that this dissatisfaction was not specifically due to the duration or frequency, but to some other feature of the program. Without any relevant empirical material nor pre-existing research it is hard to make and informed guess on why that could have been the case, and we therefore recommend future iterations of PeopleUknow to further explore this issue. Moreover, while the present pilot intervention lasted only eight weeks, its final form is planned to extend to the whole school year. If the majority of the interviewed students already judged the pilot intervention as taking away too much time, it is likely that this issue may become more problematic in future, longer iterations. Which is one more reason for further researching it.

Evidence-based rules for combining students

One of the sources of unnatural or uncomfortable interactions was, according to the students, the casual and sometimes unfortunate association with individuals who were unwilling to collaborate. As mentioned in the mixed methods evaluation, one partial solution may be to instruct the teachers on which kind of combination is desirable and which other should be avoided. For example, in Mikami et al. (2005), the educators were advised to create heterogeneous groups combining children across different social status, ethnicity, and academic ability, and to avoid pairing best friend and bitter enemies together. This type of grouping aimed to promote students' interactions with unfamiliar peers and to break down social status barrier.

Even if the outcomes of that intervention happened to be generally positive, resarch has shown that imposing contact among students who belong to different social cliques may sometimes worsen the perceived in- and outgroup differences, and reinforce the pre-existing competitive dynamics (Dovidio et al., 2009; Pettigrew & Tropp, 2000). Moreover, grouping together children with externalizing behavior might result in deviancy training (Dishion et al., 1999; Snyder et al., 2008).

Both the generated themes and research indicate that, if unregulated, the complete seat arrangements rotation featured by PeopleUknow may at times backfire and generate opposite effects to those originally intended. For this reason, We recommend future iterations of PeopleUknow to integrate more research around the topic of group formation, and to develop evidence-based guidelines for the teachers to follow.

5. Conclusion and implications

On the backdrop of an important and all-encompassing Norwegian school reform for which 'life coping and public health' (*livsmestring og folkehelse*) has become one of the three main themes around which the learning content will revolve (Utdanningsdirektoratet, 2020), and having considered the great importance that relatedness have for a series of valuable aspects like well-being (Ryan & Deci, 2000), mental health (Deci & Ryan, 2008), and self-esteem (Leary et al., 1995; Leary, 2005, 2012) – especially for adolescents (Berndt, 1982) –, the present study performed a semi-summative and formative evaluation (Plomp, 2007, p. 15; McKenney & Reeves, 2018, p. 166) of a pilot intervention intended to create a more positive and socially secure peer climate in the classroom. As it is often the case, these evaluations were also intended to produce recommendations for improvements (Plomp, 2007, p. 15) of the present and of similar interventions.

Semi-summative evaluation and implications

The mixed methods semi-summative evaluation[23] of the digital learning period T' showed that the intervention had a significant negative impact on the classroom peer frustration (it increased frustration) in the treatment compared to the control condition, which was likely caused by the low quality of digital interactions during the social activities and by a generalized disengagement in participating in the activities online. To avoid such negative consequences, PeopleUknow and other analogous relatedness-enhancing programs may consider being suspended for the duration of a suddenly imposed digital learning period.

In the interval T'', characterized by a more normal situation – but still with a '1-meter' social distancing rule and other minor restrictions – the intervention mostly had a neutral effect, and had a minor positive impact on relatedness satisfaction and a minor negative impact on relatedness frustration. The positive effect was likely influenced by the ability of PeopleUknow to support

[23] A summative evaluation aims at assessing the overall value of an intervention, and more in particular, at judging how well it is working to engender a desirable phenomenon (McKenney & Reeves, 2018, p. 166). The present semi-summative evaluation was called 'semi' as it happened at the end of the first of possibly multiple iterations of the program, and it was not the final, conclusive evaluation.

the students in getting to know each other by facilitating conversations and by promoting deeper connections. The negative effect, on the other side, may have been more or less directly produced by unnatural interactions, prolonged sitting, and by the activities feeling like chores, lasting too long, and taking away time from lectures and test preparation. How part of these negative aspects could be avoided – and more – was articulated in the second evaluation.

Formative evaluation and implications

The formative assessment[24] – based on a thematic analysis (Braun & Clarke, 2006) rooted in the self-determination (Deci & Ryan, 1985, 2000, 2008) and need-to-belong theory (Baumeister & Leary, 1995) of the group interview – produced emerging evidence supported by research that getting to know each other, fun and games, moving one's body, and beginning the intervention at the start of the first school year are all aspects of activities that can improve the relatedness-enhancing quality of PeopleUknow. Self-disclosing and exchanging viewpoints has been shown to increase social attraction in conversational partners (Vittengl & Holt, 2000) and to induce social unity and shared identity (Jans et al., 2011; Postmes et al., 2005). And various theories and empirical research support the importance of self-disclosure in beginning and maintaining social relationships (Derlega et al., 1993). Games have been linked to increased relatedness (Henley et al., 2007; Mikami et al. 2005; McMahon & Hanrahan, 2020), and fun to the promotion of engagement and attention (Kapp, 2012, pp. 6-12). The mechanisms are confirme by the interviewees' conviction that fun and games lead people to getting to know each other better. The students' proposed solution of including bodily motion in the activities has been associated to higher attention and engagement (Kubesch et al., 2009; Howie et al., 2014; Schmidt et al., 2016). Finally, their suggestion to begin the intervention at the school start was speak to the socially destabilising effects of the transition between primary and secondary school (Vaz et al., 2014).

Based on these conclusions, future iterations of PeopleUknow and similar interventions should consider emphasizing getting to know each other through conversations, beginning at the school start, and integrating bodily motion, and fun and games. Moreover, the inclusion of positive

[24] A formative evaluation is directed at improving and refining the intervention (Plomp, 2007, p. 15; McKenney & Reeves, 2018, p. 166).

interdependence[25] (Van Ryzin & Roseth, 2018) and clear guidelines for the grouping of students (e.g. Mikami et al., 2005) are also recommended. Future research is needed to determine the potential of these aspects for peer relatedness-enhacing programs.

Emergent evidence was also produced about features that hindered PeopleUknow. Unnatural interactions, being combined with an uncooperative partner, prolonged sitting, starting the intervention too late during high school, and activities being perceived as chores and as taking away too much time from school are all aspects that other iterations of PeopleUknow and analogous programs should consider avoiding. Future research should further investigate their impact on analogous interventions.

Other implications

This study contributed to support the usefulness of mixed methods in developing a more complete understanding of the subject matter (Creswell et al., 2011; Johson et al., 2014). The qualitative answers to the second research questions produced in depth material that complemented the assessment of the effectiveness of the intervention.

Moreover, this project extended prior research on relatedness in various ways. It corroborated the relevance of the relatedness construct in the classroom context as its importance was implicit in many of the qualitative themes, especially in the positive 'gets people to know each other', the negative 'unnatural interactions' and 'started too late', and in the themes 'fun and games' and 'start at the school start'. It supported the reliability (avg. $\alpha = 0.79$) of the BPNSF scale (Chen, et al., 2015) adapted to both the adolescent population, to the classroom context, and translated in the Norwegian language. Moreover, the present study expanded relatedness research based on the distinction suggested by Vansteenkiste and Ryan (2013) between relatedness satisfactio and frustration, and supported the reliability of these constructs (avg. $\alpha^{satisfaction} = 0.84$, avg. $\alpha^{frustration} = 0.74$).

[25] The definition of 'positive interdependence' in a collaborative activity is "when goals are structured such that individuals can attain their goals if (and only if) others in their group also reach their goals" (Van Ryzin & Roseth, 2018, p. 1193).

6. Limitations, validity, and future research

In this section we consider the major limitations of this study. First the one associated to the first interval, and then those that referred to both intervals. We discuss how some limitations may have impacted the intervention and control conditions differently. At the same time, we also evaluate how these may have affected the study's validity, and we propose suggestions for future research.

Major limitation in the digital learning interval T'

The main limitation concerning the first time interval was connected to a modification of the operationalization of the relatedness construct in the T2 survey mid-test, required by the sudden COVID-19 related lockdown. While the original plan was investigating the intervention effect on peer relatedness in the broader *school* context, when COVID-19 restrictions made interactions with students outside one's class impossible, the relatedness measurement had to be readjusted towards *classroom* peers instead (see the appendix for the full questionnaires). And since the interpretation of the results proposed to evaluate the *classroom* peer relatedness construct, this modification might have undermined to some extent the construct validity.

Major limitations concerning both T' and T''

The main limitations of the study concerning all three time points had to do with: the small sample size and the low response rate, the compromise made to compensate for this problem, the exclusive use of self-report measures, the gap between the relatedness construct and one of the main goals of the intervention, and finally, not accounting for the nested quality of the data.

Small final sample

One limitation of this study is associated to the involvement of a small sample – that by itself limited external validity –, and to the even smaller final sample size[26] that ended up being considered. Even if throughout all three rounds the survey counted 158 different valid respondents out of 163 possible students, the overlap between participants in T' was 86, and in

[26] By 'final sample size' it is meant the overlap of respondents (the respondents in common) between two survey rounds respectively, in the intervals T', T'' (the interval T1 → T3 is not mentioned here because it was not included in the quantitative analyses).

T'' it was 72. This meant that even if the response rate was originally good, the percentage of participants that ended up being included in the quantitative tests became much smaller. This aspect further decreases the generalizability of the outcomes, and it also reduces their general validity[27]. It weakens generalizability because less people were involved in the study, which limits our capacity to justifiably extend the conclusions to other contexts and to the wider population of interest. And it impairs validity as the intended goal was to measure the effect of the intervention in all (or most) students of the involved classes, and not only in half of them.

Slightly different groups considered

Another limitation of the validity of the results came from an attempt to limit exactly the problem of a reduced final sample size. Instead of considering the overlap between all three rounds (N = 62), I decided to analyze the common respondents of each time interval respectively (mentioned in the paragraph above). This meant that the sample included in the quantitative tests for T', T'', and T1 → T3 differed slightly. This compromise aimed at increasing external validity and general validity, at the expenses of internal validity.

Use of self-report

A limitation of the quantitative and qualitative findings was that they were exclusively based on self-report which has been associated with a series of drawbacks and biases (Garcia & Gustavson, 1997) like the Hawthorne effect (Sedgwick & Greenwood, 2015), the social-desirability bias (Grimm, 2010) – more relevant for the group interview –, the respondents' limited introspective ability (Peels, 2016). For this reason, future research should evaluate to include external observation methods.

Gap between the intervention goals and the relatedness construct

Another limitation concerned the discrepancy between the intervention goals and the relatedness construct chosen to evaluate them. The PeopleUknow program was designed to create a more positive and socially secure classroom climate and, one main strategy to accomplish that was getting as many students as possible to know each other and to encourage them to highlight their similarities. All exercises (especially 'get to know each other bingo' and 'did the same') and the

[27] For 'general validity' it is intended here whether one measures what one intends to measure (Cattell, 1946; Kelley, 1927).

other rotating arrangement function[28] shared this important objective. In this sense, a primary goal of the intervention was to develop relationships among *all* classmates, especially among those that had not formed a bond with each other yet. And so, the problem with the construct of relatedness as it was operationalized in the survey, was that out of the eight items of the scale, only one referred to all other classmates, while two to only a portion of them, and the last five referred to only a small subpart of the whole class[29]. This meant that the scale employed to evaluate the intervention effectiveness did not capture an important objective of the program, which impaired to some extent the internal validity of the related conclusions. Future research may consider extending the scope of the relatedness scale to all classmates, but this would somehow distort the construct of relatedness as it is directed towards relevant others (Baumeister & Leary, 1995). Other perhaps more valid alternatives could be to employ sociometric ratings (Newcomb et al., 1993; Volling et al., 1993; Mikami et al., 2012, 2020) and peer nominations (Coie et al., 1982; DeRosier, 2004) which could be better suited for detecting changes in relatedness at the whole class level.

Not accounting for nested data

The last major limitation derived from the study not accounting for the nested quality of the data, especially considered the interpersonal nature of the relatedness construct. The intervention was implemented in a pre-existing social system with multiple relational layers, such as dyadic relationships, within and between group relations, the different classes, and the school. All these relationships had a particular history that preceded the intervention, which constituted the social background where the program took place, and clearly influenced how it unfolded. Interpersonal factors such as a competitive or collaborative classroom climate may for example promote or inhibit a socially accepting environment (Mikami et al., 2005). Moreover, the intervention was – for the most part – applied to a plurality of people combined together (Week and Group Buddies). Nonetheless, the statistical inquiries of this study did not take into account these relational layers and analyzed the data as if the intervention was applied to each individual separately and in a

[28] I refer here to the second major component of the PeopleUknow intervention that required the students to be arranged together in various combinations that were changed each week.

[29] In the adapted relatedness scale used in this study, only one item referred to all classmates, two were directed to the narrower 'those you spend time with', and the remaining five referred to even narrower 'the group you want to belong to', 'those that you care about', and 'those that are important to you'.

social vacuum. Each of these layers may have functioned as extraneous variables affecting the intervention outcomes, and this is likely to have negatively impacted the study's internal validity. In addition, Fishman et al. (2004) even argue that any classroom context, as it is impacted by the systemic constraints in which it is nested, makes the external validity of any naturalistic findings highly suspect. Future studies with larger samples should evaluate conducting more sophisticated multilevel analyses to examine the potential effect of these interpersonal layers.

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Appendix

Information document (*Informasjonsskriv*)

Vil du delta i forskningsprosjektet:

PeopleUknow og 'livsmestring' i skolen

Virkningen en teknologistøttet sosioemosjonell læringsarena har på klassemiljøet

Dette er et spørsmål til deg om å delta i et forskningsprosjekt hvor formålet er å lære mer om bruk av PeopleUknow sine tjenester i klasserommet. I dette dokumentet gir vi deg informasjon om målene for prosjektet og hva deltakelse vil bety for deg.

Formål og omfang

Formålet til forskningsprosjektet er å lære mer om hvordan PeopleUknow sine tjenester påvirker klassemiljøet.

Forskningsprosjektet vil begynne tidligst den 30. november 2020 og avsluttes rundt slutten av februar 2021, men dere vil bruke verktøyene i klassen ut skoleåret. Fem forskjellige klasser fra skolen din (**** vgs.) vil delta i forskningsprosjektet.

Som elev blir du bedt om å delta i tre runder med spørreundersøkelser. Spørreundersøkelsene vil foregå i skoletiden.

Noen elever (ca. fem) fra klassene som deltar i forskningsprosjektet vil også delta i en runde med gruppeintervjuer som vil ta totalt èn time.

Dette dokumentet gir dere informasjon om deltagelse i forskningsprosjektet der resultatene vil bli brukt for å lage en masteroppgave. Masterstudenten studerer pedagogikk ved Universitet i Oslo, og veilederen hans er professor i pedagogisk psykologi ved **** og i spesialpedagogikk ved ****.

Data som blir innsamlet gjennom spørreundersøkelsene og gruppeintervjuene vil være tilgjengelig i anonymisert og digital form for PeopleUknow etter prosjektslutt. PeopleUknow kan bruke disse anonymiserte dataene i analyser og sammenligninger med lignende tiltak i fremtiden.

Hvem er ansvarlig for forskningsprosjektet?

Universitetet i Oslo (UiO) er den ansvarlige institusjonen for prosjektet.

Hvorfor får du spørsmål om å delta?

PeopleUknow har inngått en avtale med skolen din, og klassen din er en av tre klasser som er valgt av rektor, avdelingsleder og involverte lærere for å prøve ut en tidlig versjon av PeopleUknow sine tjenester og delta i forskningsprosjektet.

Hva innebærer det for deg å delta?

Spørreundersøkelser (komparativ undersøkelse)

Hvis du velger å delta i prosjektet, betyr det at du deltar i tre runder med spørreundersøkelser. Selve utfyllingen av spørreundersøkelsen vil ikke ta lengre enn 15-20 minutter for hver runde. De vil foregå elektronisk og i skoletiden.

Anonymitet og registreringsmåte ved spørreundersøkelser

Personopplysninger fra undersøkelsene vil behandles konfidensielt, og vil anonymiseres ved prosjektslutt. Ingen vil kunne identifiseres i masteroppgaven og i materialet som skal publiseres.

Siden vi kommer til å spørre deg om bl.a. din psykisk helse i bred forstand og om noen av dine sosiale forhold, vil vi informere deg at noen av dataene vi kommer til å samle inn faller inn i kategorien 'helse opplysninger'.

Spørreundersøkelsenes innhold

I spørreskjemaet vil du først bli bedt om å angi noe personlig informasjon om f.eks. ditt kjønn, om du bor med familien din, hvor mange det er i familien din, osv.

For å se på hvordan PeopleUknow sine tjenester påvirker klassemiljøet kommer vi til å be deg om å svare på spørsmål som ser på:

a) hvordan du pleier å bli påvirket av at du føler deg inkludert eller utenfor på skolen, og

b) hvordan PeopleUknow sine tjenester bidrar til at noen av dine sosiale behov er tilfredsstilt når du er på skolen.

c) for å bedre forstå effekten PeopleUknow har på hvordan du opplever å være inkludert i hverdagen, vil vi også stille deg spørsmål om din følelse av å høre til både i familien din og sammen med venner utenfor skoletiden.

Hvis du velger å ikke delta i spørreundersøkelsene, vil du kunne bruke den tiden for å jobbe selvstendig med hjemmelekser eller andre skolerelaterte oppgaver, som renskriving av

notater, osv.

Gruppeintervju

Noen av elevene (ca. fem) fra klassene som deltar i forskningsprosjektet vil også kunne delta i en runde med gruppeintervjuer som vil vare i cirka èn time.

Anonymitet og registreringsmåte ved gruppeintervjuer (gjelder kun de som deltar her)

Du vil ikke kunne delta helt anonymt i gruppeintervjuene siden du vil være fysisk eller digitalt tilstede, men personopplysninger fra gruppeintervjuene vil behandles konfidensielt, og vil anonymiseres ved prosjektslutt. Ingen vil kunne identifiseres i masteroppgaven og i materialet som skal publiseres.

Måten intervjuene vil foregå på er ikke bestemt ennå. Om de skal foregå fysisk, vil gruppen samles på ett og samme sted og lyden vil bli tatt opp. Om intervjuene skal foregå digitalt, vil det skje via et videosamtaleprogram og lyden vil bli tatt opp elektronisk. Videoe vil ikke bli tatt opp, men deltakelsen bør skje via video for å sikre bedre kommunikasjon.

Gruppeintervjuenes innhold

Hvis du deltar i gruppeintervju da vil du bli bedt om å delta i en diskusjon om hvordan PeopleUknow sine tjenester påvirker klassemiljøet.

Det er frivillig å delta

Det er frivillig å delta i forskningsprosjektet (komparative spørreundersøkelser og gruppeintervjuer). Hvis du velger å delta, kan du når som helst trekke samtykket tilbake uten å oppgi noen grunn. Alle dine personopplysninger vil da bli slettet. Det vil ikke ha noen negative konsekvenser for deg hvis du ikke vil delta eller senere velger å trekke deg.

Hvis du velger å trekke samtykke ditt, vil det på ingen måte påvirke ditt forhold til skolen eller til de lærerne som er involvert.

Ditt personvern – hvordan vi oppbevarer og bruker dine opplysninger

Vi vil bare bruke opplysningene om deg til formålene vi har fortalt deg om i dette skrivet. Vi behandler opplysningene konfidensielt og i samsvar med personvernregelverket.

Institusjonen som er behandlingsansvarlig for innsamlet data er UiO. De personene som vil ha tilgang til data vil være følgende:

- Mattia Damaggio, masterstudent;
- Frode Stenseng, masterveileder og professor;
- Marianne Johnsen, CEO i PeopleUknow.

For å forsikre at ingen uvedkommende vil få tilgang til personopplysningene vil vi følge en rekke sikkerhetsprosedyrer (se under).

Sikkerhetsprosedyrer for gruppeintervjuer

Ved fysiske intervjuer vil lyd tas opp med en diktafon fra UiO eller **** sine IT-tjenester. Diktafon er en mikrofon som er spesielt tilpasset å trygt kunne brukes i forskning. Ved digitale intervjuer vil lyd fra et videosamtaleprogram (f.eks. Zoom) tas indirekte opp med en diktafon. Lyden vil ikke bli lagret på pc, men direkte på diktafonen.

Deltakerne vil ikke kunne gjenkjennes i en eventuell publikasjon av masteroppgaven.

Hva skjer med opplysningene dine når vi avslutter forskningsprosjektet?

Opplysningene anonymiseres når prosjektet avsluttes/oppgaven er godkjent, noe som etter planen er juni 2021. Ved prosjektslutt vil personopplysninger og opptak slettes definitivt.

Hva gir oss rett til å behandle personopplysninger om deg?

Vi behandler opplysninger om deg basert på ditt samtykke. På oppdrag fra UiO har NSD – Norsk senter for forskningsdata AS vurdert at behandlingen av personopplysninger i dette prosjektet er i samsvar med personvernregelverket.

Hvor kan jeg finne ut mer?

Hvis du har spørsmål til studien, eller ønsker å benytte deg av dine rettigheter, ta kontakt med: UiO ved:

- Mattia Damaggio, masterstudent. Epost: mattia.damaggio@gmail.com. Tlf.: ****
- Frode Stenseng, masterveileder og professor. Epost: frode.stenseng@ntnu.no. Tlf.: ****

  PeopleUknow ved:
- Marianne Johnsen, PeopleUknow CEO. Epost: marianne@peopleuknow.no. Tlf.: ****
- Vårt personvernombud: Svein Stølen, Universitet i Oslos rektor for perioden 2017-2021. Epost: rektor@uio.no. Telefonnummer: ****

Hvis du har spørsmål knyttet til NSD sin vurdering av prosjektet, kan du ta kontakt med:

- NSD – Norsk senter for forskningsdata AS på epost (personverntjenester@nsd.no) eller på telefon: 55 58 21 17.

Med vennlig
hilsen Mattia
Damaggio

(Forsker/veileder Frode Stenseng)

Consent form for survey (*Samtykkeerklæring*)

Samtykkeerklæring Komparativ spørreundersøkelse elever

Jeg har mottatt og forstått informasjon om prosjektet 'PeopleUknow og 'livsmestring' i skolen: virkningen en teknologistøttet sosioemosjonell læringsarena har på klassemiljøet', og har fått anledning til å stille spørsmål. Jeg samtykker til:

- ☐ å delta i tre runder med spørreundersøkelser

Jeg samtykker til at mine opplysninger behandles frem til prosjektet er avsluttet

---

(Signert av prosjektdeltaker, dato)

Consent form for group interview (*Samtykkeerklæring*)

Samtykkeerklæring gruppeintervju elever

Jeg har mottatt og forstått informasjon om prosjektet 'PeopleUknow og 'livsmestring' i skolen: virkningen en teknologistøttet sosioemosjonell læringsarena har på klassemiljøet', og har fått anledning til å stille spørsmål. Jeg samtykker til:

- ☐ å delta i en runde meg gruppeintervju som elev

Jeg samtykker til at mine opplysninger behandles frem til prosjektet er avsluttet.

(Signert av prosjektdeltaker, dato)

Complete survey rounds – T1, T2, and T3

Pre-test (T1)

Komparativ undersøkelse - første runde

Samtykkeerklæring Komparativ spørreundersøkelse elever
Jeg har mottatt og forstått informasjon om prosjektet 'PeopleUknow og 'livsmestring' i skole: virkningen av en teknologistøttet sosioemosjonell læringsarena på klassemiljøet', og har fått anledning til å stille spørsmål.

Jeg er klar over at det er frivillig å delta i denne undersøkelsen, og at jeg kan trekke meg fra undersøkelsen nårsomhelst uten å få noen form for negative konsekvenser.

Hvis du har noen spørsmål eller om du vil trekke deg fra undersøkelsen kan du ta kontakt med masterveileder og professor via epost ved å skrive til frode.stenseng@ntnu.no.

Jeg samtykker til:

Å delta i tre runder med spørreundersøkelser

Jeg samtykker til at mine opplysninger behandles frem til prosjektet er avsluttet

Skriv inn de siste fire tallene i telefonnummeret ditt
Hvis f.eks. telefonnummeret ditt er 91 92 13 14, da kan du skrive inn 1314.

Husk disse fire tallene siden du vil bli bedt om å skrive de samme inn på de neste to rundene av denne spørreundersøkelsen.

Hvilken av følgende er klassen din?
Vi minner deg på at de siste fire sifrene i telefonnummeret ditt vil bli kodet slik at dine svar på denne undersøkelsen ikke vil kunne spores tilbake til deg. I tillegg, vil svarene i denne formen være tilgjengelig for bare masterveilederen og masterstudenten, og skal på ingen måte vises fram til hverken lærere eller andre personer.

Skal PeopleUknow sin web- eller mobilapp tas i bruk i din klasse?
Hvis du er usikker kan du spørre læreren din om din klasse er deltagende, eller om den er en

kontrollklasse.

- Ja (klassen min skal ta i bruk PeopleUknow sin web- eller mobilapp)
- Nei (klassen min er en kontrollklasse)

1. Hvilket kjønn identifiserer du deg med?

- Hun
- Han
- Annet
- Vil ikke svare

2. Hvor mange foreldre eller foresatte bor du sammen med i hovedhusstanden din?

Med 'hovedhusstanden din' menes den hustanden du tilbringer mest tid i. Hvis du bor bare i en husstand, da kan du tenke på det. Hvis du ellers har f.eks. to forskjellige husstander og tilbringer mest tid i en av dem, kan du ha den i bakhodet. Hvis du tilbringer like mye tid i to husstander, du kan ha begge i bakhodet.

- 0
- 1
- 2
- Mer enn 2

3. Hvor mange søsken bor du sammen med i hovedhusstanden din?

Med 'hovedhusstanden din' menes den hustanden du tilbringer mest tid i. Hvis du bor bare i en husstand, da kan du tenke på det. Hvis du ellers har f.eks. to forskjellige husstander og tilbringer mest tid i en av dem, kan du ha den i bakhodet. Hvis du tilbringer like mye tid i to husstander, du kan ha begge i bakhodet.

- 0
- 1
- 2 eller 3
- Mer enn 3

De følgende spørsmålene omhandler deg GENERELT, I ALLE SITUASJONER (på skole, utenfor skole, med familie, venner, på fritid, osv.)

Svaralternativer: Helt uenig / Noe Uenig / Usikker / Noe enig / Helt enig

4. Når andre ikke godtar meg slik jeg er, så plager det meg

5. Jeg passer på å ikke gjøre ting som får andre til å unngå eller avvise meg

6. Jeg er ofte bekymret for hva andre tenker om meg

7. Det er viktig for meg å ha noen rundt meg som jeg kan snakke med når noe plager meg

8. Jeg ønsker at andre personer skal akseptere meg

9. Jeg liker ikke å være alene

10. Å være borte fra venner i lange perioder plager meg

11. Jeg har et sterkt behov for å være en del av et fellesskap

12. Det plager meg veldig når jeg ikke blir inkludert i andres planer

13. Når andre ikke aksepterer meg blir jeg lett lei meg

De følgende spørsmålene omhandler deg PÅ SKOLEN

Svaralternativer: Helt uenig / Noe Uenig / Usikker / Noe enig / Helt enig

14. Jeg føler at de jeg bryr meg om på skolen, også bryr seg om meg

15. På skolen føler jeg meg holdt utenfor den gruppen jeg vil være en del av

16. På skolen føler jeg meg nær de menneskene jeg bryr meg om

17. Folk som er viktige for meg på skolen er kalde og fjerne for meg

18. Jeg føler meg nær og knyttet til de menneskene som er viktige for meg på skolen

19. Jeg har inntrykk av at de jeg tilbringer tid sammen med på skolen ikke liker meg

20. På skolen føler jeg meg nær de menneskene jeg tilbringer tid sammen med

21. Jeg føler at relasjonene til de andre elevene bare er overfladiske

De følgende spørsmålene omhandler deg I FAMILIEN DIN (i din hovedhusstand)

Med 'hovedhusstanden din' menes den hustanden du tilbringer mest tid i. Hvis du bor bare i en

husstand, da kan du tenke på det. Hvis du ellers har f.eks. to forskjellige husstander og tilbringer mest tid i en av dem, kan du ha den i bakhodet. Hvis du tilbringer like mye tid i to husstander, du kan ha begge i bakhodet.

Svaralternativer: Helt uenig / Noe Uenig / Usikker / Noe enig / Helt enig

22. Jeg føler at familien min bryr seg om meg

23. I familien min føler jeg meg holdt utenfor

24. Jeg føler meg nær de jeg bryr meg om i familien min

25. Jeg føler at familien min er kald og fjern fra meg

26. Jeg føler meg nær og knyttet til de andre i familien min

27. Jeg har inntrykk at de andre i familien min ikke liker meg

28. I familien min føler jeg meg nær de menneskene jeg tilbringer tid sammen med

29. Jeg føler at relasjonene jeg har i familien min er bare overfladiske

De følgende spørsmålene omhandler deg MED VENNENE DINE (utenfor skoletid)

Hvis du i det siste har, f.eks. pga. koronasituasjonen, hatt lite kontakt med vennene dine utenfor skolen, kan du tenke mer generelt på kontakt med jevnaldrende i stedet. Og hvis, igjen, f.eks. pga. koronasituasjonen, du har hatt lit fysisk kontakt med venner eller jevnaldrende utenfor skolen, kan du i stedet tenke på andre typer kontakt, som digital, via telefon, sosiale medier, osv.

Svaralternativer: Helt uenig / Noe Uenig / Usikker / Noe enig / Helt enig

30. Når jeg ikke er på skolen, føler jeg at vennene mine bryr seg om meg

31. Når jeg ikke er på skolen, føler jeg meg holdt utenfor den vennegruppen jeg vil være en del av

32. Når jeg ikke er på skolen, føler jeg meg nær de vennene jeg bryr meg om

33. Når jeg ikke er på skolen, føler jeg at de vennene som er viktige for meg er kalde mot og fjerne fra meg

34. Når jeg ikke er på skolen, føler jeg meg nær og knyttet til de vennene som er viktige for meg

35. Når jeg ikke er på skolen, føler jeg at de vennene jeg tilbringer tid sammen med ikke liker meg

36. Når jeg ikke er på skolen, føler jeg meg nær de vennene jeg tilbringer tid sammen med

37. Når jeg ikke er på skolen, føler jeg at relasjonene med vennene mine er bare overfladiske

Mid-test (T2)

Komparativ undersøkelse - andre runde

Samtykkeerklæring Komparativ spørreundersøkelse elever
Jeg har mottatt og forstått informasjon om prosjektet 'PeopleUknow og 'livsmestring' i skole: virkningen av en teknologistøttet sosioemosjonell læringsarena på klassemiljøet', og har fått anledning til å stille spørsmål.

Jeg er klar over at det er frivillig å delta i denne undersøkelsen, og at jeg kan trekke meg fra undersøkelsen nårsomhelst uten å få noen form for negative konsekvenser.

Hvis du har noen spørsmål eller om du vil trekke deg fra undersøkelsen kan du ta kontakt med masterveileder og professor via epost ved å skrive til frode.stenseng@ntnu.no.

Jeg samtykker til:

Å delta i tre runder med spørreundersøkelser

Jeg samtykker til at mine opplysninger behandles frem til prosjektet er avsluttet

Skriv inn de siste fire tallene i telefonnummeret ditt
Hvis f.eks. telefonnummeret ditt er 91 92 13 14, da kan du skrive inn 1314.

Husk disse fire tallene siden du vil bli bedt om å skrive de samme inn på de neste to rundene av denne spørreundersøkelsen.

Hvilken av følgende er klassen din?
Vi minner deg på at de siste fire sifrene i telefonnummeret ditt vil bli kodet slik at dine svar på denne undersøkelsen ikke vil kunne spores tilbake til deg. I tillegg, vil svarene i denne formen være tilgjengelig for bare masterveilederen og masterstudenten, og skal på ingen måte vises fram til hverken lærere eller andre personer.

De følgende spørsmålene omhandler deg I KLASSESAMMENHENG (både fysisk og digitalt) SIDEN BEGYNNELSEN AV DESEMBER til i dag
Svaralternativer: Helt uenig / Noe Uenig / Usikker / Noe enig / Helt enig

1. Jeg føler at de jeg bryr meg om i klassen, også bryr seg om meg

2. I klassen føler jeg meg holdt utenfor den gruppen jeg vil være en del av

3. I klassen føler jeg meg nær de menneskene jeg bryr meg om

4. Folk som er viktige for meg i klassen er kalde mot og fjerne fra meg

5. Jeg føler meg nær og knyttet til de menneskene som er viktige for meg i klassen

6. Jeg har inntrykk av at de jeg tilbringer tid sammen med i klassen ikke liker meg

7. I klassen føler jeg meg nær de menneskene jeg tilbringer tid sammen med

8. Jeg føler at relasjonene til de andre klassekameratene er bare overfladiske

De følgende spørsmålene omhandler deg I FAMILIEN DIN (i din hovedhusstand) SIDEN BEGYNNELSEN AV DESEMBER til i dag

Med 'hovedhusstanden din' menes den husstanden du tilbringer mest tid i. Hvis du bor bare i en husstand, da kan du tenke på det. Hvis du ellers har f.eks. to forskjellige husstander og tilbringer mest tid i en av dem, kan du ha den i bakhodet. Hvis du tilbringer like mye tid i to husstander, du kan ha begge i bakhodet.

Svaralternativer: Helt uenig / Noe Uenig / Usikker / Noe enig / Helt enig

9. Jeg føler at familien min bryr seg om meg

10. I familien min føler jeg meg holdt utenfor

11. Jeg føler meg nær de jeg bryr meg om i familien min

12. Jeg føler at familien min er kald og fjern fra meg

13. Jeg føler meg nær og knyttet til de andre i familien min

14. Jeg har inntrykk at de andre i familien min ikke liker meg

15. I familien min føler jeg meg nær de menneskene jeg tilbringer tid sammen med

16. Jeg føler at relasjonene jeg har i familien min er bare overfladiske

De følgende spørsmålene omhandler deg MED VENNENE DINE (utenfor skoletiden) SIDEN BEGYNNELSEN AV DESEMBER til i dag
Hvis du i det siste har, f.eks. pga. koronasituasjonen, hatt lite kontakt med vennene dine utenfor skoletiden, kan du tenke mer generelt på kontakt med jevnaldrende i stedet. Og hvis, igjen, f.eks. pga. koronasituasjonen, du har hatt lite fysisk kontakt med venner eller jevnaldrende utenfor skoletiden, kan du i stedet tenke på andre typer kontakt, som digital, via telefon, sosiale medier, osv.

Svaralternativer: Helt uenig / Noe Uenig / Usikker / Noe enig / Helt enig
17. Utenom skoletiden føler jeg at vennene mine bryr seg om meg

18. Utenom skoletiden føler jeg meg holdt utenfor den vennegruppen jeg vil være en del av

19. Utenom skoletiden føler jeg meg nær de vennene jeg bryr meg om

20. Utenom skoletiden føler jeg at de vennene som er viktige for meg er kalde mot og fjerne fra meg

21. Utenom skoletiden føler jeg meg nær og knyttet til de vennene som er viktige for meg

22. Utenom skoletiden føler jeg at de vennnene jeg tilbringer tid sammen med ikke liker meg

23. Utenom skoletiden føler jeg meg nær de vennene jeg tilbringer tid sammen med

24. Utenom skoletiden føler jeg at relasjonene med vennene mine er bare overfladiske

Har klassen din startet med PeopleUknow sin webapp med ukekompiser, grupper og øvelser?
- Ja
- Nei

Hvilke øvelser har du deltatt i?
- Si hei
- Gjort det samme
- Hold kontakt
- Felleskap
- Hjelpe hverandre

(De følgende elementene vises kun dersom alternativet «Ja» er valgt i spørsmålet «Har klassen din startet med PeopleUknow sin webapp med ukekompiser, grupper og øvelser?»)

De følgende spørsmålene omhandler deg I KLASSESAMMENHENG (både fysisk og digitalt)

Disse ØVELSENE MED UKEKOMPISER OG GRUPPER har hjulpet meg til ...
Svaralternativer: Helt uenig / Noe Uenig / Usikker / Noe enig / Helt enig

25. ... å lettere ta initiativ overfor andre (ta kontakt, foreslå, snakke, lytte, hjelpe, osv.)

26. ... å føle meg mindre ensom i klassen

27. ... å føle meg mer inkludert i klassen

28. ... lettere å få nye relasjoner i klassen

Disse ØVELSENE MED UKEKOMPISER OG GRUPPER har ført til at ...
Svaralternativer: Helt uenig / Noe Uenig / Usikker / Noe enig / Helt enig

29. ... klassekameratene mine bryr seg mindre om meg

30. ... jeg føler meg holdt utenfor av klassekameratene mine

31. ... klassekameratene mine ikke liker meg

Det å ha en UKEKOMPIS hver uke ...
Svaralternativer: Helt uenig / Noe Uenig / Usikker / Noe enig / Helt enig

32. ... har hjulpet til å føle meg mer inkludert i klassen

33. ... gjør det lettere å bry meg om klassekameratene mine

34. ... har gjort meg mer usikker overfor klassekameratene mine

Post-test (T3)

Komparativ undersøkelse - tredje runde

Samtykkeerklæring Komparativ spørreundersøkelse elever
Jeg har mottatt og forstått informasjon om prosjektet 'PeopleUknow og 'livsmestring' i skole: virkningen av en teknologistøttet sosioemosjonell læringsarena på klassemiljøet', og har fått anledning til å stille spørsmål.

Jeg er klar over at det er frivillig å delta i denne undersøkelsen, og at jeg kan trekke meg fra undersøkelsen nårsomhelst uten å få noen form for negative konsekvenser.

Hvis du har noen spørsmål eller om du vil trekke deg fra undersøkelsen kan du ta kontakt med masterveileder og professor via epost ved å skrive til frode.stenseng@ntnu.no.

Jeg samtykker til:

Å delta i tre runder med spørreundersøkelser

Jeg samtykker til at mine opplysninger behandles frem til prosjektet er avsluttet

Skriv inn de siste fire tallene i telefonnummeret ditt
Hvis f.eks. telefonnummeret ditt er 91 92 13 14, da kan du skrive inn 1314.

Husk disse fire tallene siden du vil bli bedt om å skrive de samme inn på de neste to rundene av denne spørreundersøkelsen.

Hvilken av følgende er klassen din?
Vi minner deg på at de siste fire sifrene i telefonnummeret ditt vil bli kodet slik at dine svar på denne undersøkelsen ikke vil kunne spores tilbake til deg. I tillegg, vil svarene i denne formen være tilgjengelig for bare masterveilederen og masterstudenten, og skal på ingen måte vises fram til hverken lærere eller andre personer.

De følgende spørsmålene omhandler deg I KLASSESAMMENHENG (både fysisk og digitalt) ETTER SKIFTET FRA RØDT TIL GULT NIVÅ på skolen (slutten av januar) til i dag
Svaralternativer: Helt uenig / Noe Uenig / Usikker / Noe enig / Helt enig

1. Jeg føler at de jeg bryr meg om i klassen, også bryr seg om meg

2. I klassen føler jeg meg holdt utenfor den gruppen jeg vil være en del av

3. I klassen føler jeg meg nær de menneskene jeg bryr meg om

4. Folk som er viktige for meg i klassen er kalde mot og fjerne fra meg

5. Jeg føler meg nær og knyttet til de menneskene som er viktige for meg i klassen

6. Jeg har inntrykk av at de jeg tilbringer tid sammen med i klassen ikke liker meg

7. I klassen føler jeg meg nær de menneskene jeg tilbringer tid sammen med

8. Jeg føler at relasjonene til de andre klassekameratene er bare overfladiske

De følgende spørsmålene omhandler deg I FAMILIEN DIN (i din hovedhusstand) ETTER SKIFTET FRA RØDT TIL GULT NIVÅ på skolen (slutten av januar) til i dag
Med 'hovedhusstanden din' menes den husstanden du tilbringer mest tid i. Hvis du bor bare i en husstand, da kan du tenke på det. Hvis du ellers har f.eks. to forskjellige husstander og tilbringer mest tid i en av dem, kan du ha den i bakhodet. Hvis du tilbringer like mye tid i to husstander, du kan ha begge i bakhodet.

Svaralternativer: Helt uenig / Noe Uenig / Usikker / Noe enig / Helt enig
9. Jeg føler at familien min bryr seg om meg

10. I familien min føler jeg meg holdt utenfor

11. Jeg føler meg nær de jeg bryr meg om i familien min

12. Jeg føler at familien min er kald og fjern fra meg

13. Jeg føler meg nær og knyttet til de andre i familien min

14. Jeg har inntrykk at de andre i familien min ikke liker meg

15. I familien min føler jeg meg nær de menneskene jeg tilbringer tid sammen med

16. Jeg føler at relasjonene jeg har i familien min er bare overfladiske

De følgende spørsmålene omhandler deg MED VENNENE DINE (utenfor skoletiden) ETTER SKIFTET FRA RØDT TIL GULT NIVÅ på skolen (slutten av januar) til i dag
Hvis du i det siste har, f.eks. pga. koronasituasjonen, hatt lite kontakt med vennene dine utenfor skoletiden, kan du tenke mer generelt på kontakt med jevnaldrende i stedet. Og hvis, igjen, f.eks. pga. koronasituasjonen, du har hatt lite fysisk kontakt med venner eller jevnaldrende utenfor skoletiden, kan du i stedet tenke på andre typer kontakt, som digital, via telefon, sosiale medier, osv.

Svaralternativer: Helt uenig / Noe Uenig / Usikker / Noe enig / Helt enig

17. Utenom skoletiden føler jeg at vennene mine bryr seg om meg

18. Utenom skoletiden føler jeg meg holdt utenfor den vennegruppen jeg vil være en del av

19. Utenom skoletiden føler jeg meg nær de vennene jeg bryr meg om

20. Utenom skoletiden føler jeg at de vennene som er viktige for meg er kalde mot og fjerne fra meg

21. Utenom skoletiden føler jeg meg nær og knyttet til de vennene som er viktige for meg

22. Utenom skoletiden føler jeg at de vennnene jeg tilbringer tid sammen med ikke liker meg

23. Utenom skoletiden føler jeg meg nær de vennene jeg tilbringer tid sammen med

24. Utenom skoletiden føler jeg at relasjonene med vennene mine er bare overfladiske

Har klassen din startet med PeopleUknow sin webapp med ukekompiser, grupper og øvelser?

- Ja
- Nei

Hvilke øvelser har du deltatt i?

- Si hei
- Gjort det samme
- Hold kontakt
- Bli kjent bingo

(De følgende elementene vises kun dersom alternativet «Ja» er valgt i spørsmålet «Har klassen din startet med PeopleUknow sin webapp med ukekompiser, grupper og øvelser?»)

De følgende spørsmålene omhandler deg I KLASSESAMMENHENG (både fysisk og digitalt) ETTER SKIFTET FRA RØDT TIL GULT NIVÅ på skolen (slutten av januar) til i dag
Disse ØVELSENE MED UKEKOMPISER OG GRUPPER har hjulpet meg til ...
Svaralternativer: Helt uenig / Noe Uenig / Usikker / Noe enig / Helt enig

25. ... å lettere ta initiativ overfor andre (ta kontakt, foreslå, snakke, lytte, hjelpe, osv.)

26. ... å føle meg mindre ensom i klassen

27. ... å føle meg mer inkludert i klassen

28. ... lettere å få nye relasjoner i klassen

Disse ØVELSENE MED UKEKOMPISER OG GRUPPER har ført til at ...
Svaralternativer: Helt uenig / Noe Uenig / Usikker / Noe enig / Helt enig

29. ... klassekameratene mine bryr seg mindre om meg

30. ... jeg føler meg holdt utenfor av klassekameratene mine

31. ... klassekameratene mine ikke liker meg

De følgende spørsmålene omhandler deg I KLASSESAMMENHENG (både fysisk og digitalt) ETTER SKIFTET FRA RØDT TIL GULT NIVÅ på skolen (slutten av januar) til i dag
Det å ha en UKEKOMPIS hver uke ...
Svaralternativer: Helt uenig / Noe Uenig / Usikker / Noe enig / Helt enig

32. ... har hjulpet til å føle meg mer inkludert i klassen

33. ... gjør det lettere å bry meg om klassekameratene mine

34. ... har gjort meg mer usikker overfor klassekameratene mine

Quotes in original language (Norwegian)

Gets people to know each other

1. *"Jeg kjenner at, jeg synes det er veldig bra at vi får inn noen som legges vekt på å bli kjent med klassekameratene dine over å bare forvente at dere skal bli kjent gjennom tid og gjennom at dere må gå i klassen sammen i tre år. At du får en mulighet til å bli kjent med folk da. Og ikke bare sånn, overfladisk."*

2. *"P2: Det er jo litt sånn i starten, når vi blir satt opp med en annen en, i gruppe med fire. Og så ble vi tvunget til å bare snakke sammen."*
   "P3: Det er bra å ha en ting for å få folk til å koble seg sammen litt."
   P2: At de ikke bare blir solitærer, (at de) ikke snakker med noen. Man blir tvunget ut a komfort sonen sin, og man tar et par steg i blindet.

3. *"Men sånn var det jo i en klasse der jeg ikke kjente en eneste person - jeg kjente jo ingen da jeg kom inn, og det var en vennegjeng som var venner fra før og veldig vanskelig å finne nye venner og sånt. Så det hadde vært fint (PUk) da for å få startet samtaler, for å komme i gang, for å finne like ting man liker sammen."*

4. *"Jeg synes det er veldig gøy å prate om andre ting og sånt, prate om hva du gjorde i helgen, jeg synes det er fint å prate om noe annet enn bare skole da, det blir jo litt kjedelig. Da har man sånn en evne (kanskje de mente 'emne') å prate om da."*

5. *"P5: Men, PUk skaper relasjoner over de gruppene som ofte skapes, som at i klassen det blir fort fire grupper, og med PUk så får du litt relasjoner over i grupper (de mener 'på tvers av grupper'). P1: Jeg er veldig enig."*

6. *"P4: (fortsetter det P1 sa) Nå har vi funnet russegrupper. […] Og det blir veldig delt. Utover klasserommet ville jeg si det er veldig delt. P1: Det er veldig veldig delt utover klasserommet. Jo vi ha i hvert fall et delvis trygt klassemiljø i klassen, men utover klassen så snakker man ikke med hverandre nesten. […] Også er ikke bare det, men ved dette her (PUk = ved å drive med PUk) så tror jeg det danner veldig mye mer bånd mellom (=på tvers av) grupper. Og så er dette her en tid spesielt i andre og slutten av andre (klassen),*

folk begynner å lage seg grupper til russetiden og gjør seg klar til å tenke på fremtidsplaner og tenker hvordan de vil studere […] og det vil jo få folk til å splitte seg enda mer. […] Og jeg tenker dette her er en fin måte å huske på å holde kontakten, og gi en fellesskapsfølelse og skaffe bånd mellom grupper da. P4: Ja, enig."

Unnatural interactions

7. *"P1: Også har vi i klassen som kanskje ikke er like komfortabel med å prate med nye folk eller er litt mer sjenert. Så det er ikke noe problem med det men hvis du bli tvunget til å stå og prate med noen sånn, "nå tar jeg tiden, 3 minutter, nå skal dere se hverandre inn i øynene og prate" og så står der sånn "Hva gjorde du for fire år siden". P4: Så det kan bli litt kleint av og til."*

8. *"Når det på en måte ikke kommer naturlig så er det ofte at det er vanskelig å få det til å bli en bra samtale fordi det er - på begge sider det kan føles forced, at det er vanskelig, for den samtalen til å få det til å føles ut som en naturlig samtale hvis man bare blir som sagt "Ok, dere to snakker sammen nå"."*

9. *"Men hvis tar da eksempelet med sportsspill (litt usikker om de sier 'sport') så er jo det en aktivitet som vil fortsette uansett, mens en samtale kan jo fortsatt dø av, og så skal man plutselig snakke tre minutter til. Spill det er en aktivitet som vil kunne fortsette å gå, i forhold til en samtale som kan dø av at det ikke er noe mer å snakke om."*

10. *"På den ene siden så er det en som virkelig vil og på den andre siden er den som virkelig ikke vil, at begge kan bli veldig ukomfortable i den situasjonen. Så i mange situasjoner så kan det være - det varierer så sterkt på hvem du blir puttet med, og om det er noen som er kompatibel med din personlighet."*

Can't stand sitting

11. *"Å bare sitte og snakke er nesten det eneste man gjør i de fleste aktivitetene."*

12. *"Altså, vi sitter jo på pulten vår hele tiden, i åtte timer, så det er jo veldig kjedelig."*

13. *"P3: Med det er mer det at det å ha mer aktive, det er det meste, fordi når man bare sitter*

*i ro, så er det veldig enkelt å bare miste attention og at man (**unclear**) til å gjøre noe annet. Og så da går inn masse i det der PUK (mener sikkert 'øvelser') hvor man ikke finner det interesat i det hele tatt, og da bare, vil jeg heller tegne på ark eller. P2: Miste seg bort i tankene sine."*

14. *"(unclear beginning of sentence ...) ... og folk ... mer oppgaver hvis det man skulle være fysisk i klasserommet enn å sitte i ro fordi da kan det være bare, at folk ikke prater i det hele tatt."*

Too much time

15. *"Det som er sak er mer at når det er ... det er også på en måte et problem at det skjer så ofte, det er veldig ofte, veldig masse og siden det skjer så ofte og så masse så er det veldig lite engasjement i den. […] Man man blir jo oppfordret til å være engasjert og sånn, med det er veldig veldig vanskelig å engasjere seg når det skjer så ofte og så masse."*

16. *"P3: Man blir på en måte bombardert så mye med PUk så masse at det er vanskelig å ta masse av det seriøst når det er sånn, og ja man har 'hold kontakten' (→ øvelsen) som man skal gjøre, og har 'bli kjent bingo' på onsdag eller... P2: (avbryter naturlig) Det begynner å føles som lekser. P3: Ja, nesten. At man ser ikke på det som... P2: Aktivitet. P3: (fortsetter) En aktivitet, eller sånn "Og ja! Jeg kan bli kjent med ukekompisen min" mer sånn som (low pitch, disengaged voice) "Oh, jeg fikk ny ukekompis, ok, da får jeg gjøre de tingene eller hva"."*

17. *"P5: Det blir ikke snakket så mye om det, men jeg har hørt noen kommentarer at det har vært litt mye PUk. Fordi det tok opp så store deler av timen. Det har vært mye 'sitte i ro' og snakk om man har en katt eller sånne ting når vi har hatt prøve på fredag liksom. P3: Ja, noe sånt (bekreftende). Og så i tillegg det der at det ofte tar vekk fra bare naturfagtimene. Så det føles som det er på en måte lite vi får gjort der, ofte. RES: Ahah (bekreftende - as if, I am listening, go on). P3: At det føles som en ting ... P2: (avbryter naturlig) Ikke veldig mye læring i naturfag. P3: Ja. At det er liksom, det er et punkt som ble tatt opp for litt siden da, men det er sånn "Oh ja, vi skal ha en bli kjent bingo, men, vi har en prøve på fredag det må vi øve på" (implying there is a problem with this). RES:*

Skjønner, skjønner, skjønner. P2: Jeg likte egentlig naturfag litt før PUk. Pga. at det svelget opp hele naturfagstimen. Vi sluttet å lære så veldig mye."

Started too late

18. *"Du får etter at det har gått ett år så har relasjonene stiftet en del (? solidified), men så tror jeg egentlig det hadde passet å ta det helt fra starten for oss. (Unclear: I hvert fall ikke å begynne med det etter fire måneder vi startet på skolen)."*

19. *"RES: Det gir mer mening å begynne i første klasse enn i andre klasse. P1: (avbryter ganske fort men naturlig - fullfører min setning) ... enn å starte i andre, fordi det blir så unaturlig fordi da har folk allerede satt opp en fasade og folk kjenner hverandre mye bedre og sånn. Hvis du starter tidlig når folk ikke har tid til å være sånn "Jeg er den personen, eller jeg er der du er der" (they imply: starte tidlig før man har satt andre i bokser)."*

20. *"Jeg føler at hvis vi hadde gjort dette her første dagen, så hadde det vært litt generelt, men da hadde folk hadde hatt et ønske at jeg de ville ha hatt et godt klassemiljøet. Sånn at det er litt mer vilje enn at "jeg har vennegjengen min, alt er greit, jeg gidder ikke og bryr meg ikke å gjennomføre dette skikkelig"."*

Online is not the same

21. *"P1: Ja, det funket ikke. I hvert fall ikke på nettet når det er lock down så tror jeg det er veldig vanskelig fordi du har ikke den andre personen du må face (fra engelsk 'to face'). P4: Det hadde gått fint hvis man hadde snakket sånn på pc som man snakker på Zoom, men vi virket ikke til å gjøre det? (mener de: 'vi klarte ikke til å få den til å funke?'). Og det var ingen som orket å sette opp et møte heller, som ville prate og sånn, og send melding. Det var ingen som orket det. P1: (avbryter naturlig og fortsetter på P4) Folk er for lat til det, i hvert fall når det er på nett. En ting er når det er face to face, men det er noe annet på nett fordi folk er lat."*

Fun and games

22. *"P2: Spill var veldig effektiv […] De gangene vi spilte (names a game but unclear audio) det var veldig morsomt i store grupper. P3: Ja, akkurat. Å ha mer type spillaktige aktiviteter. Folk blir på en måte, siden det er noe å gjøre som er gøy, så er det ofte at man blir mer engasjert inn i det. Og ofte da, at bare ved å holde på sammen blir bedre kjent enn man ville være."*

23. *"[…] Hvis poenget er dere skal bli kjent så er det vanskeligere å bli kjent enn hvis det er bare ha det gøy sammen, fordi når man har det gøy sammen så blir naturlig mer kjent og mer komfortabel med hverandre."*

24. *"P2: Hvis oppdrag er det å ha det morsomt, da er de folkene som normalt ville ha dratt seg unna seg om det hadde vært å bli kjent i stedet, på grunn av at de vil ha det morsomt. Fordi de ikke liker, lyden av å bli kjent, det er skummelt. P3: Det ta bort presset. P2: Det tar bort presset. På fritidsaktiviteter er alle sånn der (med en slik holdning) "vi er alle her for å ha det morsomt", da ville man akkurat ikke ha talt (snakket) seriøst hele tiden."*

25. *"P5: Men hvis tar da eksempelet med sportsspill (litt usikker om de sier 'sport') så er jo det en aktivitet som vil fortsette uansett, mens en samtale kan jo fortsatt dø av, og så skal man plutselig snakke tre minutter til. Spill det er en aktivitet som vil kunne fortsette å gå, i forhold til en samtale som kan dø av at det ikke er noe mer å snakke om."*

Moving one's body

26. *"P1: (fortsetter) Så jeg tenker at, i hvert fall for vår klasse så hadde hjulpet mye mer som sagt, det vi sa med (om) fysisk aktivitet. Ikke som spurting, fordi det orker ingen for å være ærlig. Men sånn, aktiviteter der du kan røre deg og ikke trenger å skrive ned så mye. Eller... P4: Altså, vi sitter jo på pulten vår hele tiden, i åtte timer, så det er jo veldig kjedelig. Og hvis det blir noen fysisk aktivitet så vil gjerne folk gjøre det."*

27. *"P1: Ja, spill som for eksempel Twister er bedre enn et spill der du må bare sitte i ro og ta og flytte et brikke liksom. P2: Fordi da er man aktiv. P1: Ja, man er aktiv, man rører*

seg, man har det artig.
P2: Man blir veldig engasjert."

28. *"I aktiviteter som er i siste time for eksempel, hvor mange er veldig slitne og trøtte og sånn, det (å være fysisk aktive) kan få dem til å være veldig full av energi."*

Start at the school start

29. *"Men sånn var det jo i en klasse der jeg ikke kjente en eneste person - jeg kjente jo ingen da jeg kom inn, og det var en vennegjeng som var venner fra før og veldig vanskelig å finne nye venner og sånt. Så det hadde vært fint (PUk) da for å få startet samtaler, for å komme i gang, for å finne like ting man liker sammen."*

30. *"P1: Jeg skulle bare si at jeg er veldig enig og f.eks. at to uker etter klassen min startet, fordi jeg gikk på en annen linje først, jeg gikk på drama linje får jeg byttet studie. Som de sier at klassen min hadde rukket å bli kjent med hverandre i to uker får jeg kom inn, da var det ikke noe grunnlag for å bli kjent med folk. Jeg ble kjent med P4 gjennom andre relasjoner, men om jeg ikke hadde hatt noen, hvor ville jeg ha startet da? Fordi det er litt skummelt å komme inn i en klasse to uker etter at alle andre har blitt kjent og så skal prøve å bli kjent med folk - alle med en gang.*
P4: Ja, det hadde vært fint å ha hatt PUk. P1: Ja, for å kunne ha en grunn for å starte en samtale."

31. *"P2: Jeg synes egentlig at det er en veldig bra tid for å ha det, fordi...*
P5: (avbryter litt naturlig) Enig i det. Det første halvåret så skjer det... P1: (avbryter litt naturlig) Veldig mye.
P2: Hvis man ikke har personer som er veldig flinke til å introdusere folk, eller flink til å bare begynne å snakke pga de ikke har noen andre til å gjøre det (sammen med)."

32. *" Jeg tenker spesielt kanskje for de som starter i første, som starter på en helt ny skole med helt nye folk, så tar det ofte flere måneder før du blir kjent med folk, ordentlig liksom. Du trenger f.eks. å ha PUk i tre år, fordi du rekker å bli kjent med folk i tre år. Men kanskje i hvert fall obligatorisk det første halv året i første (klassen)."*